RUDY HIRSCHHEIM
ARMIN HEINZL
JENS DIBBERN
Editors

Information Systems Outsourcing

Enduring Themes, New Perspectives and Global Changes

Second Edition

Springer

Information Systems Outsourcing

Rudy Hirschheim
Armin Heinzl · Jens Dibbern
(Editors)

Enduring Themes, New Perspectives and Global Changes

Second Edition

With 55 Figures and 71 Tables

Professor Dr. Dr. Rudy Hirschheim
E.J. Ourso College of Buisness
Louisiana State University
Baton Rouge, LA 70803
USA

Professor Dr. Armin Heizl
Dr. Jens Dibbern

Universität Mannheim
Lehrstuhl für ABWL und Wirtschaftsinformatik
Schloss S 220
68131 Mannheim
Germany

ISBN-10 3-540-34875-1 2nd ed. Springer Berlin Heidelberg New York
ISBN-13 978-3-540-34875-7 2nd ed. Springer Berlin Heidelberg New York
ISBN 3-540-43103-9 1st ed. Springer-Verlag Berlin Heidelberg New York

Library of Congress Control Number: 2006928425

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilm or in any other way, and storage in data banks. Duplication of this publication or parts thereof is permitted only under the provisions of the German Copyright Law of September 9, 1965, in its current version, and permission for use must always be obtained from Springer. Violations are liable to prosecution under the German Copyright Law.

Springer is part of Springer Science+Business Media

springer.com

© Springer-Verlag Berlin Heidelberg 2002, 2006

The use of general descriptive names, registered names, trademarks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

Production: LE-TEX Jelonek, Schmidt & Vöckler GbR, Leipzig
Cover-design: Erich Kirchner, Heidelberg

SPIN 11769521 43/3100YL - 5 4 3 2 1 0 Printed on acid-free paper

Preface

Four years have been passed away since the first edition of this book has been published. While certain key issues on IS sourcing like determinants and application service provision have become more mature from an academic and industry perspective, additional topics have arisen on the horizon. In particular, offshoring and business process outsourcing have led to numerous insightful publications which offer a valuable and indispensable holistic sourcing perspective. Thus, the second edition of our outsourcing book deals with *enduring themes, new perspectives, and global challenges*. In addition to classical themes like Sourcing Determinants (Part I), Relationship Aspects (Part II), and Experiences (Part III), we felt it worthwhile to add three new parts. They cover information systems outsourcing from a Vendor and Individual Perspective (Part IV), Application Service Providing (Part V) as well as Offshoring and Global Outsoucing (Part VI). Again we have thoughtfully tried to arrange a compilation of contemporary outsourcing research as a primer and a platform for scientific discourse.

In contrast to the first edition, this book is not the outcome of an International Conference, but rather an update of important and relevant perspectives. Since the *Third International Conference on Outsourcing of Information Services* will take place 2007 in Heidelberg, Germany, it may be considered as an epilogue for further interactions and discussions. The book is dedicated to all academics and students in the field of Information Systems as well as to corporate executives and professionals who seek a more profound analysis and understanding of the underlying factors and mechanisms of outsourcing.

We would like to thank all the authors for their contributions and cooperation. It has been a pleasure to work with you. Our special thanks go to Jens Gehbauer for his support in crafting the manuscript. Finally, while we are very grateful to the authors of the chapters of the book, we take responsibility for the content and any errors in the book. We hope you find the reading of this second edition to be as valuable and insightful as in the first edition.

Rudy Hirschheim	Armin Heinzl	Jens Dibbern
Baton Rouge, Louisiana	Mannheim, Germany	Mannheim Germany

Contents

Preface V

Part I: Overview 1

Information Technology Outsourcing in the New Economy – An Introduction to the Outsourcing and Offshoring Landscape 3
Rudy Hirschheim and Jens Dibbern

Part II: Determinants of the IS Outsourcing Decision 25

Costs, Transaction-Specific Investments and Vendor Dominance of the Marketplace: The Economics of IS Outsourcing 27
Soon Ang and Detmar Straub

Selective Outsourcing of Information Systems in Small and Medium Sized Enterprises 57
Jens Dibbern and Armin Heinzl

Antecedents of Information Systems Backsourcing 83
Natalia Falaleeva Veltri and Carol Saunders

IT Sourcing a Dynamic Phenomena: Forming an Institutional Theory Perspective 103
Bandula Jayatilaka

Part III: Outsourcing Relationship Issues 135

Legal and Tax Considerations in Outsourcing 137
Mihir A. Parikh and Gowree Gokhale

Measuring and Managing IT Outsourcing Risk: Lessons Learned 161
Benoit A. Aubert, Michel Patry, and Suzanne Rivard

Governance of Remotely Outsourced Software Development:
A Comparison of Client and Vendor Perspectives 187
Rajiv Sabherwal and Vivek Choudhury

Spiraling Effect of IS Outsourcing Contract Interpretations 223
Barbara L. Marcolin

Part IV: Experiences and Outcome of IS Outsourcing 257

The Normative Value of Transaction Cost Economics: What
Managers Have Learned About TCE Principles in the IT Context 259
Laura Poppo and Mary C. Lacity

Success of IS Outsourcing as a Predictor of IS Effectiveness:
Does IT Governance Matter? 283
Markku Sääksjärvi

Four Stories of Information Systems Insourcing 303
Rudy Hirschheim and Mary C. Lacity

Capabilities for Information Systems Outsourcing Success:
Insights from the Resource-based View of the Firm 347
Tim Goles

Part V: Vendor View and Individual Level Perspective 379

Vendor Strategies in the German Market for Information Technology and Business Process Outsourcing 381
Alexander Georgius, Armin Heinzl, and Jens Dibbern

Work Outcomes and Job Design for Contract Versus Permanent Information Systems Professionals on Software Development Teams 403
Soon Ang and Sandra A. Slaughter

When Subordinates Become IT Contractors: Persistent Managerial Expectations in IT Outsourcing 443
Violet T. Ho, Soon Ang, and Detmar Straub

Part VI: Application Service Providing and Business Process Outsourcing 479

Understanding the 'Service' Component of Application Service Provision: An Empirical Analysis of Satisfaction with ASP Services 481
Anjana Susarla, Anitesh Barua, and Andrew B. Whinston

Developing a Sustainable Value Proposition in Web Services: Lessons from Strategic Management 523
Wendy L. Currie and Mihir A. Parikh

Business Process Outsourcing, Knowledge and Innovation – A Study of Enterprise Partnership 543
David Feeny, Leslie Willcocks, and Mary C. Lacity

Business Process Outsourcing: The Hysteresis Effect and Other Lessons 583
Anne C. Rouse and Brian J. Corbitt

Part VII: Offshoring and Global Outsourcing 603

Business Process Offshoring to India: An Overview 605
Guru Sahajpal, Manish Agrawal, Rajiv Kishore, and H. Raghav Rao

The Maturation of Offshore Sourcing of Information Technology Work 631
Erran Carmel and Ritu Agarwal

Managing Cross-Cultural Issues in Global Software Outsourcing 651
S. Krishna, Sundeep Sahay, and Geoff Walsham

Knowledge Management in Offshore Software Development 659
Brian Nicholson and Sundeep Sahay

Offshore Outsourcing: Challenge to the Information Systems Discipline 687
Rudy Hirschheim

Index 701

Part I: Overview

Information Technology Outsourcing in the New Economy – An Introduction to the Outsourcing and Offshoring Landscape

Rudy Hirschheim

E. J. Ourso College of Business, Louisiana State University, Baton Rouge, LA. 70803

Jens Dibbern

Department of Information Systems I, University of Mannheim, Schloss, D-68131 Mannheim, Germany

1 Introduction

The notion of outsourcing – making arrangements with an external entity for the provision of goods or services to supplement or replace internal efforts – has been around for centuries. Kakabadse and Kakabadse (2002) track one of the earliest occurrences of outsourcing to the ancient Roman Empire, where tax collection was outsourced. In the early years of American history, the production of wagon covers was outsourced to Scotland, where they used raw material imported from India in the production process (Kelly 2002). Outsourcing remained popular in the manufacturing sector, with part of the assembling in many industries being sub-contracted to other organizations and locations where the work could be done more efficiently and cheaply (Vaze 2005). Commenting on this unstoppable trend, Pastin and Harrison (1974) wrote that such outsourcing of manufacturing functions was creating a new form of organization which they termed the "hollow corporation" (i.e. an organization that designs and distributes, but does not produce anything). They note that such an organizational form would require considerable changes in the way organizations were managed. While they limited their research to the role of management in the hollow corporation, they comment on the substantial (and unpleasant) social and economic changes that the outsourcing of manufacturing was causing.

It was not long before the idea of outsourcing was applied to the procurement of information technology (IT) services also. While the current wave of IT outsourcing can be traced back to EDS' deal with Blue Cross in the early sixties, it was

the landmark Kodak deal in 1989 that won acceptance for IT outsourcing as a strategic tool. Many large and small outsourcing deals were inked in the years that followed. From its beginnings as a cost-cutting tool, IT outsourcing has evolved into an integral component of a firm's overall information systems strategy (Linder 2004). Still, reducing costs is an idea that never loses its appeal, and the opportunity to meet the IT demands of the organization with a less-expensive but well-trained labor pool has led organizations to look past the national borders, at locations both far and near, for such resources. Recent statistics vouch for the continued acceptance and popularity of IT outsourcing as well as this trend towards outsourcing to different global locations. A Gartner study conducted in 2004 placed global IT outsourcing at $176.8 billion in 2003, and forecasted that this will grow to $235.6 billion in 2007, and to $253.1 billion in 2008 (Souza et al. 2004). While outsourcing has grown beyond the domain of IT embodying decisions such as where and how to source IT to a much wider set of business functions, IT outsourcing still leads the pack with 67% of all global outsourcing deals in 2004 being related to IT (Pruitt 2005). This inexorable trend towards outsourcing and offshoring brings unique sets of challenges to all parties involved. Western organizations have to walk a tightrope between the savings and efficiencies that offshoring could provide and the adverse reactions from a society increasingly disenchanted by the job displacement and loss that outsourcing brings.

2 IT Outsourcing Motivation and History

Although organizations outsource IT for many reasons, the growth of IT outsourcing can be attributed to two primary phenomena: (1) a focus on core competencies and (2) a lack of understanding of IT value (Lacity et al. 1994). First, motivated by the belief that sustainable competitive advantage can only be achieved through a focus on core competencies, the management of organizations have chosen to concentrate on what an organization does better than anyone else while outsourcing the rest. As a result of this focus strategy, IT came under scrutiny. The IT function has been viewed as a non-core activity in organizations; further, senior executives believe that IT vendors possess economies of scale and technical expertise to provide IT services more efficiently than internal IT departments. Second, the growth in outsourcing may also be due to a lack of clear understanding of the value delivered by IT (Lacity and Hirschheim 1993). Though senior executives view IT as essential to the functioning of the organization, it is viewed as a cost that needs to be minimized. Believing that outsourcing will help meet the IT needs of the organization less expensively, organizations have chosen to outsource. Interestingly, some researchers (e.g. Hirschheim and Lacity 2000) have found that outsourcing has not always yielded the benefits that organizations had hoped for. This has led to numerous normative strategy proposals to help

organizations achieve success (Cullen et al. 2005; Linder 2004; Lacity and Hirschheim 1993).

Initially, when organizations looked to external sources for the provision of IT services, the vendor provided a single basic function to the customer, exemplified by facilities management arrangements where the vendor assumed operational control over the customer's technology assets, typically a data center. The agreement between Blue Cross and Electronic Data Systems (EDS) in 1963 for the handling of Blue Cross' data processing services was different from such previous 'facilities management' contracts. EDS took over the responsibility for Blue Cross's IT people extending the scope of the agreement beyond the use of third parties to supplement a company's IT services. EDS's client base grew to include customers such as Frito-Lay and General Motors in the seventies, and Continental Airlines, First City Bank and Enron in the eighties. Other players entered the outsourcing arena as well, the most noteworthy of those being the ISSC division of IBM. ISSC's deal with Kodak in 1989 heralded the arrival of the IT outsourcing mega-deal and legitimized the role of outsourcing for IT. Following the success of the Kodak deal, well-known companies around the world quickly followed suit – General Dynamics, Xerox, and McDonnell Douglas in the U.S.; Lufthansa and Deutsche Bank in Germany; Rolls Royce and British Aerospace in Britain; KF Group in Sweden; Canada Post in Canada; Telestra, LendLease, and the Commonwealth Bank of Australia in Australia and ABN Amro in the Netherlands (Dibbern et al. 2004).

IT outsourcing has evolved from sole-sourcing and total sourcing arrangements of yester-years where one vendor provides all IT services to its client to complex arrangements involving multiple vendors and multiple clients (Clemons et al. 2000; Gallivan and Oh 1999). According to Mears and Bednarz (2005) companies are also outsourcing on a much more selective basis than ever before. The tools and resources available today make it easier for IT executives to manage their IT portfolio and achieve the economies they need without outsourcing everything. (Of course a key challenge is determining what pieces of the IT portfolio to outsource and what to keep internal.) Outsourcing also now embraces significant partnerships and alliances, referred to as co-sourcing arrangements, where client and vendor share risk and reward. These co-sourcing arrangements build on the competencies of the client and vendor to meet the client's IT needs. Kaiser and Hawk (2004) provide recommendations to organizations considering co-sourcing arrangements with offshore vendors. They note that organizations should avoid total dependency on the vendor by maintaining their IT competencies in-house.

IT outsourcing – as it was practiced through the turn of this century – was primarily domestic outsourcing. While it had considerable impact on the way organizations structured and managed their IT, and to some extent, redefined the roles of IT managers, the impacts were largely limited to the client and vendor firms' boundaries with the possible exception of the creation of some new intermediary organizations (e.g. outsourcing consulting firms). Domestic IT

outsourcing barely created a stir in the public press perhaps because no one foresaw that the outsourcing of a critical knowledge-work function (i.e. IT) might have more dramatic effects if these tasks could be performed not domestically but globally. In some way this is surprising because most US firms were hiring numerous foreign IT people, and importing people from places like the Philippines, India, etc. on staff augmentation contracts. Indeed, according to Sheshabalaya (2004) and Friedman (2005), major changes were already taking place in IT in the late 80s and throughout the 90s in the US but went unnoticed, mostly because of the dot.com boom and Y2K remediation needs.

3 Offshore Outsourcing

A prominent change in the outsourcing arena is the growth in offshore outsourcing (Lacity and Willcocks 2001; Robinson and Kalakota 2004; Morstead and Blount 2003). Driven by the pressures of globalization and the ensuing need to address opportunities and threats from global competition, companies are increasingly looking at less-expensive resources available in offshore locations. And these less expensive resources are readily available in countries like India, China and the Philippines.

An outsourcing arrangement is considered 'offshore outsourcing' when the responsibility for management and delivery of information technology services is delegated to a vendor who is located in a different country from that of the client (Sabherwal 1999). While the three leading countries in the offshore outsourcing arena are India, Israel, and Ireland (Carmel 2003a,b), near-shore providers in Canada and Mexico are also popular among U.S. clients just as eastern Europe has become a prime near-shore option for central European countries, because of geographic and cultural proximity. Some clients find the near-shore scenario more attractive because these locations facilitate continuous monitoring (Rao 2004). China is also quickly gaining popularity because of its low labor costs.

As in domestic outsourcing, a primary driver of offshore outsourcing is the continued pressure organizations face to cut costs associated with IT while maintaining and improving processes (McFarlan 1995; Nicholson and Sahay 2001; Rajkumar and Dawley 1998). The time differences between the client and the offshore vendor locations create extended work days which could contribute to increased IT productivity. With efficient distribution of work between the client and vendor locations, projects can theoretically be finished faster (Apte 1990; Carmel and Agarwal 2001, 2002; Morstead and Blount 2003; Rajkumar and Dawley 1998; Ramanujan and Lou, 1997).

Organizations also turn to offshore outsourcing because of the lack of IT resources to perform required tasks. Faced with the lack of trained professionals,

organizations look to foreign shores to gain access to knowledgeable IT personnel and valuable IT assets (Apte et al. 1997; Morstead and Blount 2003; Terdiman 2002; Sahay et al. 2003; Rottmann and Lacity 2004). Offshore vendors typically have well-trained IT personnel with the requisite technical knowledge and skills. These vendors have also recognized the need to train their staff not only in the latest technologies, but also in management and communication skills and have established numerous world-class facilities to do so (Khan et al. 2002). Such technical expertise and qualifications of the staff make these vendor firms very attractive to clients, since clients look to outsource activities that involve high level of technical skills (Aubert et al. 2004).

In addition, offshore vendors have obtained certifications to prove their ability to execute and deliver quality work. These certifications assure the client organizations that the vendor is following quality practices in the management of the project and are important in gaining the client's trust and developing the client-vendor relationship (Heeks and Nicholson. 2004). Vendors aim to align their practices with standards in different areas including software development processes (e.g. CMM), workforce management (e.g. PeopleCMM), and security (e.g. ISO 17779) (Hirschheim et al. 2004). Qu and Brockelhurst (2003) find that client organizations pay particular attention to these certifications in the vendor evaluation and selection process. However, Coward (2003) comments that while large organizations look towards certifications for quality assurance and success in offshore projects, small and medium enterprises focus on personal connections in the selection of vendors.

Finally, as in domestic outsourcing, the bandwagon effect (Lacity and Hirschheim 1993) comes in to play in offshore outsourcing as well. The sheer fact that these offshore choices are available and that other organizations are taking advantage of these options prompt other organizations to consider offshore outsourcing (Carmel and Agarwal 2001, 2002; Gopal et al. 2002; Overby 2003; Qu and Brocklehurst 2003). With such drivers, offshore outsourcing is growing at a faster rate than domestic outsourcing in the United States. While outsourcing within the United States is growing at a rate of 10-15% annually, offshore outsourcing is growing at a rate higher than 20% and will grow from seven billion dollars in 2003 to ten billion dollars in 2005 (EBusiness Strategies 2004). Meta Group (2004) predicts that by 2009, an average organization will be sending 60% of its applications work offshore.

Offshore arrangements come in a variety of flavors to match the client's desire for ownership and control: conventional offshore outsourcing arrangements, joint ventures, build-operate-transfer arrangements, and captive centers. These arrangements span the continuum from complete hand-over of the project to an offshore vendor in conventional offshore outsourcing arrangements to establishing a captive center in the foreign country. While the client usually has a low to medium level of control on the operation and delivery services in conventional offshore outsourcing, the client retains full ownership and control of the assets,

personnel, management and operations of a captive center. Such captive center arrangements are not strictly outsourcing arrangements, since in outsourcing the responsibility for the management of the IT services is handed off to an external vendor. These captive center arrangements fit under the umbrella of "offshoring" (Robinson and Kalakota 2004). In joint ventures and build-operate-transfer arrangements, the client is able to take advantage of the vendor's knowledge of the local market, while retaining a certain amount of control. Such shared ownership can reduce the risk of offshore outsourcing. A build-operate-transfer is an arrangement where a domestic client contracts with an offshore vendor to set up an offshore center, with the goal of taking over the ownership and management of the center once it is established (Anthes 1993; Khan et al. 2002; Kumar and Willcocks 1996; Morstead and Blount 2003).

A related development has been the offshore outsourcing of IT-enabled services and business processes. Many offshore IT vendors have produced offshoots to manage business process outsourcing (BPO) deals. Examples are Wipro's Spectramind and Infosys' Progeon. The BPO market is making giant strides; it is estimated that the offshore BPO market will grow at a rate of 79% annually to reach a size of $24.2 billion, while the offshore IT outsourcing market is expected to grow at a rate of 43% to $56 billion by 2008 (EBusiness Strategies, 2004). Currently, IT outsourcing dominates offshore outsourcing, but this is likely to change in the future.

4 Motivation for the Second Edition

When we produced the first edition of the book *Information Systems Outsourcing in the New Economy: Enduring Themes, Emergent Patterns and Future Directions*, the motivation rested on the need to take stock of a field which had been around for about 10 years. Since then a paper was published which offered a good overview of the field (Dibbern et al. 2004). But because it was a paper, it could not do justice to the depth and breadth of the outsourcing landscape which includes the more recent development of offshore outsourcing. To this end, the second edition was developed. In this new edition, we reproduce a number of what we consider more 'classic' papers in the field but supplement them with a large number of new contributions. We believe this new edition offers an excellent roadmap of the IT outsourcing academic literature, highlighting what has been learned so far and how the work fits together under a common umbrella.

5 Book Structure and Outline

To provide such a common umbrella we categorized the papers included in this book under six major topics that are related to each other. The topics and their relationships are illustrated in a simple framework consisting of three main elements (Figure 1): (1) the basic IT outsourcing life cycle, (2) IT enabled global outsourcing challenges, and (3) new perspectives on outsourcing.

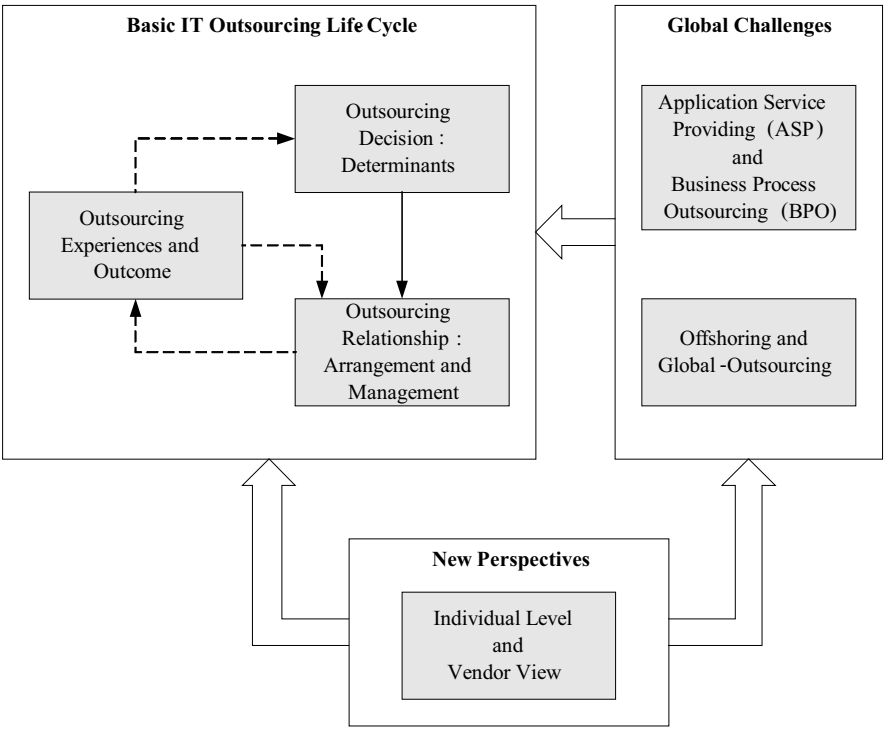


Figure 1. Framework of relationships between IT outsourcing topics

The life cycle idea has a long tradition in the IS field. In software engineering it describes the entire life of a software product from its development (birth) through its operation and maintenance until its abolition or replacement (death) (Balzert, 2001; Heinrich, 1999; Zelkowitz, et al., 1979). These generic phases can be further broken down into separate life cycles, e.g. the software development life cycle (waterfall model, spiral model, etc.) that describes development tasks and their interdependence on a continuum from requirements analysis to testing.

In addition to these product and production life cycles, service oriented life cycle models have emerged. For example, Ives and Learmonth (1984) developed the

customer resource life cycle (CRLC) and used it to analyze the (strategic) impact of IT on a company's customer relationships. Subsequently, Ives (1999) revived the CRLC to analyze the potential of the Internet to leverage a company's customer relationship calling it the "customer service life cycle" (CSLC). The analytical approach is based on the customer perspective. The four main phases are: requirement analysis, acquisition, ownership, and retirement.

In a like vein, IS outsourcing can be described as a service oriented life cycle from the client's perspective. It starts with the IS outsourcing decision, continues with the outsourcing relationship (life of the contract) and ends with the cancellation or end of the relationship, i.e. the end of the contract. The end of the relationship may lead to a new sourcing decision, which is heavily influenced by the perceived outcome of – and the experiences with – the prior outsourcing relationship. Moreover, experiences can result in changes to the outsourcing arrangement and its management during the life of the contract. These relationships are illustrated in the left box of Figure 1.

Recently this "basic" IS outsourcing life cycle has been impacted by new developments in IT – especially the Internet. Two different IT enabled global challenges are reflected by the research papers included in this book: (1) application service providing (ASP) and BPO as well as (2) offshoring and global outsourcing (right box of Figure 1). Additionally, we note the importance of new (alternative) perspectives on outsourcing. Such perspectives may focus on the individual or the vendor (lower box of Figure 1).

Each of the six elements in Figure 1 represents a separate section of this book (Part 2-7). In the following, each of the six topics will be briefly defined and an outline of the papers that fit into each chapter will be given.

The focus of the outline will be on the main IT outsourcing content of the papers. Each contribution has focused on different aspects within each category. This diversity in research objectives is further extended by the variety of different theoretical foundations and methods used in the papers, which results in even stronger diversity (Benbasat and Weber, 1996).

In Part 1 of the book (this chapter), we are attempting to offer a roadmap of IT outsourcing which hopefully helps the reader to separate the forest from the trees, so to speak. It provides an overview of the area which can act as the foundation for the papers included in this volume. The sum of papers represents a microcosm of the IT outsourcing research field at large. It is hoped that the synthesis provided in this book is an important contribution – especially for the academic readership – in identifying research gaps, reflecting upon critical research issues, and showing potential paths for future research in IT outsourcing.

5.1 Determinants of the IT Outsourcing Decision

In Part 2 we begin by asking why an organization might consider to selectively or totally outsource its IT functions. What are the conditions or situations (i.e., the determinants or antecedents) that might lend themselves to a decision to outsource? All papers summarized under this section have a common goal: They want to explain the observed variance in outsourcing behavior in practice. However which behavior do they seek to explain?

Ang and Straub seek to explain the IT outsourcing behavior in the US banking industry. They develop and empirically test a model that theorizes about the impact of different economic factors, like transaction costs, production costs or financial slack resources as well as firm size and asset specificity on the overall degree of IT outsourcing. The results of their study confirm the important impact of cost considerations on the IT outsourcing decision. One important novelty of their study is the direct measurement of transaction costs and production costs instead of implicitly testing their influence through the traditional transaction cost economic concepts like asset specificity or uncertainty.

Dibbern and Heinzl follow a similar research approach in testing a theoretical model using a cross-sectional data set. Their sample consists of small and medium sized firms in a German industry sector. Instead of testing the impact of comparative economic factors they focus on the complementary logic of constructs from transaction cost theory (as an economic lens) and resources-based theory (strategic). Moreover, power theory is considered. They note that resource deficits serve as an alternative explanation for variances in outsourcing behavior. In addition, they find evidence supporting different reasons for outsourcing depending on what IS function is outsourced. This leads to a better understanding of the practice of selective IS outsourcing.

Falaleeva Veltri and Saunders explore a somewhat different aspect of outsourcing. Using economic, strategic and relationship rationales, they explore companies who make backsourcing decisions. In particular, they apply transaction cost theory, agency theory, a core competency perspective, inter-organizational relations theory, and marketing channels theory to develop a framework for understanding backsourcing. Real-life examples of IT backsourcing are used to illustrate the different reasons that companies have for taking previously outsourced IT activities back in-house. Thereby, they recognize the interplay of economic, strategic and relationship factors that together form an organization's decision to bring an IS function back in-house.

Jayatilika provides insight into the dynamics of IT outsourcing by recognizing a broad spectrum of change alternatives including changes in the degree of outsourcing (total outsourcing, selective outsourcing, or insourcing), the outsourcing mode (number of vendors and clients), the contract, and the vendor (switching the vendor). He studies a variety of these potential change processes

through in-depth case studies in nine U.S. companies. Similar to the above mentioned studies, he uses comparative theoretical arguments to explain the different sourcing paths across companies. Embedded in the broader perspective of organizational change he, on the one hand, refers to institutional theory differentiating between normative (e.g. cost considerations), mimetic and coercive antecedents that might force companies towards a homogeneous sourcing behavior. On the other hand, he recognizes that companies might react heterogeneously based on their individual IT needs.

5.2 Arranging and Managing IT Outsourcing Relationships

In Part 3, the issue of why to outsource gives way to the question of how to outsource. In the course of this undertaking, issues such as which outsourcing vendor to select, how to negotiate an outsourcing contract, and the management and review of the vendor/client relationship (i.e. contract/relationship management) emerge. In general, 'how' relates to the implementation of best practices – methods, techniques, and approaches – used to effect the outsourcing decision that tend to result in a higher degree of outsourcing success.

A fundamental problem of the IT outsourcing relationship lies in the incompleteness of the contractual arrangement. Usually, it is impossible for a limited rational decision maker to consider all eventualities when drawing up a contract with an external vendor. Nevertheless, the contract serves as the backbone of any outsourcing relationship and should be defined as accurately as possible. The importance of contractual specification has even increased with the emergence of offshore arrangements, where the possibility to achieve mutual agreement beyond the contract is limited through distance and various types of cultural barriers.

Parikh and Gokhale provide a comprehensive overview of the range of contractual terms that need to be settled in an outsourcing arrangement. In particular, they discuss legal and tax implications in outsourcing, with a specific reference to offshore outsourcing with Indian companies. The purpose of their analysis is to provide better understanding of the legal and tax issues involved in outsourcing and ways to manage them.

As noted above, however, even the best contract may fail to recognize all eventualities that may arise during the life of the contract. As noted by Hayek, the economic problem of society is, above all, one of adjusting to the changes in the circumstances of time and space (Hayek, 1945, p. 524). The inability to look into the future provides challenges for the management of the contract and the relationship. This includes managing risks, establishing and adjusting governance mechanisms, and aligning the relationship type with the business objectives and the contract interpretation. These issues are reflected by the next three papers.

Aubert, Patry and Rivard focus on the risks inherent in an IT outsourcing relationship and how to mitigate these risks through appropriate arrangements and management techniques. The prerequisite for reducing risk is its identification. Aubert et al. define risk exposure as the product of the probability of an undesirable outcome and the loss due to the undesirable outcome. Based on prior literature they select the major undesirable outcomes and the factors that might lead to them. Using three cases they illustrate how companies dealt with risk and tried to reduce it through respective actions. Beyond contractual safeguards they discuss other techniques such as multi-supplier outsourcing, benchmarking, performance measurements, and incentives.

Sabherwal and Choudhary offer a number of key insights into the governance, and more specifically the coordination and control, of remotely outsourced software development projects. They focus on three research questions: (1) what kind of governance mechanisms are used in these projects, (2) how do these mechanisms evolve during a project, and (3) how do the differences between client and vendor perspectives explain the governance mechanisms and their evolution? Using 18 case studies, that cover both the client and the vendor perspective, the authors develop a model of the evolution of governance mechanisms.

Marcolin conducted case studies in six U.S. banks to get a deeper understanding of the IT outsourcing relationship interactions that eventually led to an increase in overall satisfaction with IT after outsourcing. Her interpretation shows that besides contract definition and relationship management, the business objectives and the degree of flexibility in interpreting the contract are very important attributes in characterizing a relationship. Depending on the instances of these attributes, two archetypes including a transaction oriented buyer-seller relationship and a strategic partnership style relationship may be distinguished. Both can lead to a higher level of satisfaction after IS outsourcing if they are appropriately supported, e.g. in a strategic partnership that aims for business wide improvements, trust building actions are necessary.

5.3 Experiences and Outcome of IT Outsourcing

With the growing maturity of the IS services market and its use, the next question to be addressed is what are the actual outcomes of the outsourcing phenomenon. What are the experiences of organizations that have outsourced? What lessons might we glean from them? How could they lead to organizational success? What implications do they have for the practice of outsourcing, not only for the IS community but for broader management in general?

Poppo and Lacity identified a common interest within their prior independent research on IS outsourcing success: Transaction Cost Economics (TCE). Even though their research approaches have been very different (quantitative versus

qualitative) to test the predictive value of TCE, they find similar results. They come to the conclusion that TCE is suitable to explain the variance in success of a firm's IS governance choice. Interestingly the predictive value of TCE tends to increase with the level of experience and/or awareness of IS outsourcing. Both the quality of the decision, e.g. the level of sophistication in deciding what to outsource, and the relationship management – especially a combination of contractual fine tuning and the cultivation of social relationships with the vendor – lead to lower transaction costs and satisfaction.

The alignment between business objectives and IT outsourcing is the focus of the paper from *Sääksjärvi*. He develops and empirically tests a model measuring the impact of the success of IS outsourcing on an organization's IS effectiveness. He argues that this relationship is moderated by both the IT governance (decision power and governance mode) and the level of strategic integration of IS reflected by its corporate integration, IS business integration and its strategic adaptability. The results of the model, tested with 70 Finnish companies, showed that strategic integration, IS governance and IS outsourcing success are mostly independent predictors of IS effectiveness. This questions the alignment of these issues in practice. Moreover, the operational benefits from outsourcing appear to be higher than those for strategic effectiveness.

Hirschheim and Lacity study the reasons for success and failure of sourcing cases where companies opted for insourcing instead of outsourcing. Based on their analysis of 14 U.S. companies they identified 11 tactics that were taken to achieve cost savings. The findings suggest that organizations can often achieve similar cost savings as through outsourcing when applying the same cost reduction tactics that external vendors usually take, such as data center consolidation or software standardization. However, the results also show that a pure cost focus provides an incomplete picture of sourcing success. Different stakeholders like users, IS managers, and senior executives often have different expectations towards the IS function. The level of realization of these expectations influences their perception of IS performance. If the expectations are uni-dimensional and unrealistically high, then misperceptions of performance will likely result. This often is the case with senior management primarily focusing on IS costs overlooking the other side of the coin which is the quality of the service and its potential strategic impact on the company's business success.

Goles recognizes the mutual dependence of client and vendor in an outsourcing relationship. Based on the resource based view it is argued that in order to achieve the expected benefits from outsourcing both parties have to bring in a set of unique capabilities. In order to test the impact of these client and vendor capabilities on relationship quality and on the client's satisfaction with the outsourcing arrangement, Goles gathered data from 170 respondents in nine U.S. organizations that outsourced a significant part of their IS function. The findings suggest significant differences in the impact of vendor as opposed to client capabilities on outsourcing success.

5.4 Vendor View and Individual Level Perspective

When scanning the literature on outsourcing two apparent gaps in research are the general lack of research that studies outsourcing from the vendor point of view and that examines the implications of outsourcing for the IS professionals at both the client and the vendor site (Dibbern et al. 2004). The papers in this chapter are notable attempts towards closing this gap.

The success of any outsourcing deal critically depends on reaching the objectives of both parities – client and vendor. However, how can such a win-win situation be achieved? How can a vendor generate significant cost savings and/or improvements in service quality for a client while at the same time making profit? And what kind of strategy should a vendor pursue in order to be successful in the market? Questions like these are addressed by the first two contributions in this Part.

Levina and Ross use the economic concept of complementarity in organizational design, along with prior findings from studies of client-vendor relationships, to explain the IT vendors' value proposition. They explain how vendors can offer benefits that cannot be readily replicated internally by client firms. Based on an in-depth case study they analyze the processes and competencies that allow the vendor to pass on the benefits achieved form internal economies of scale and scope of multiple client relationships to a single client relationship.

Georgius, Heinzl and Dibbern study the generic strategies that vendors take in order to succeed in the market. Based on case studies with 10 German vendors, five strategic groups are identified that differ in firm size and service portfolio. Each of these groups has its own set of critical success factors and shows its idiosyncratic market approach in terms of growth strategy, market stimulation or competitive strategy, market parceling strategy, and market area strategy. Based on this assessment, avenues for potential strategy shifts are identified.

Beyond these strategic aspects, however, the operational aspects of the outsourcing business may not be overseen. In particular, the day-to-day working relationships between vendor and client personnel often result in various types of unforeseen frictions that need to be considered and managed carefully.

Ang and Slaughter recognize potential sources of these frictions by comparing the work attitudes, behaviors, and performance of hired contractors with those of permanent in-house software development professionals. Based on a sequence of two studies including quantitative and qualitative empirical data, a number of significant differences were found. These differences suggest that organizations should carefully design and balance the jobs of their contractors and permanent employees to improve attitudes, behaviors, and workplace performance.

Ho, Ang and Straub study the special situation of spin-off arrangements, where former in-house IS professionals are taken over by a newly founded subsidiary

that serves as a profit center. The findings from a survey and from subsequent interviews with key informants of one case company show that that the success of the transition process critically depends on the ability to break up persistent exceptions of the client's managers. Obviously, client managers have problems in adjusting to the new situation in which their former subordinates have become external consultants that need to be treated differently. This calls for active management of the transition phase.

Another challenge for both the practitioner and the academic world lies in a realistic and informed interpretation of new developments in IT that likely impact the basic IS lifecycle elements and its relationships. The papers in Part 6 and 7 will be an important contribution for such a realistic view to be obtained.

5.5 Application Service Providing (ASP) and Business Process Outsourcing (BPO)

Within the basic IT outsourcing life cycle, information technology has traditionally been addressed exclusively as a passive object of diverse governance modes. IT functions like applications development and maintenance, and the tasks that need to be performed within these functions, have been taken as static objects that can either be delegated within or outside the boundaries of the firm. However, with an ongoing evolution of IS/IT these objects take on the character of a moving target forcing new organizational responses. New developments in IT – especially driven by the Internet technology – have taken an active part in enabling new sourcing and transaction opportunities in form of Application Service Providing (ASP) and Business Process Outsourcing (BPO).

ASP represents a market driven business model that has been enabled through the Internet. It contains all services that allow a user to access his applications via a standard browser. At the most basic level, an Applications Service Provider can be thought of as an extension of a conventional Internet Service Provider (ISP). Whereas an ISP will likely manage web and e-mail servers that are connected to the Internet (hosting web pages for businesses and individuals and routing e-mail messages), an ASP expands this model to include software programs. ASPs host a variety of applications ranging from simple stand-alone applications such as word processing to an integrated suite of modules such as an enterprise resource planning package. ASP users then interact with these remotely hosted and managed applications via a web browser over the Internet on an anytime, anywhere basis. In this model, users no longer buy software, rather they rent it, paying for the service on per seat or per use basis.

A few years ago, many commentators believed that the future would see the merging of the ISP, VAR (value added reseller), and traditional outsourcing vendor models into an ASP dominant world. However, while the ASP market was hyped considerably in the late 1990s and early 2000, it more or less took off whilst

the dot-com arena took off. This, however, does not negate the business model of the ASP and indeed we project the ASP market to slowly recover from its early crisis. In the course of rethinking the ASP model, two important questions are raised. First, it is important to understand how clients can benefit from the adoption of the ASP model. Second, it is important to understand the strategic response of the software services industry.

The first of these two issues is raised by *Susarla, Barua and Whinston* in their study on the determinants of ASP success from a client point of view. They draw upon the consumer satisfaction paradigm from marketing to analyze post-usage satisfaction with ASP services. The authors develop a conceptual model of satisfaction with ASPs and empirically test the predictions using data from 256 firms using ASP services. The findings show that satisfaction with ASP increases with the perceived performance of the ASP provider and that it decreases when prior expectations about negative consequences of ASP (such as vulnerability to network problems or loss of control over information) are higher than previously thought (disconfirmation). The results have important implication for both client and vendor. The strong disconfirmation effect shows that vendors need to actively shape the expectations of client organizations and manage failures effectively if indeed they occur.

Currie and Parikh go a step further in arguing that the `software-as-a-service´ model – as the ASP model is now frequently relabeled – will be largely influenced by the emergence of service oriented architectures (SOA) and web services. Through the introduction of a service layer into the overall system landscape of organizations, heterogeneously distributed applications can be integrated in a much easier way. This opens up the market for specialized vendors who provide web services. However, as argued by Currie and Parikh, the competitive situation forces web services firms to carefully develop their business models. These business models should be built around partnerships and strategic alliances as well as flexible pricing models.

Closely related to the software-as-a-service business is the emergence of the BPO business. The growing practice of BPO (GARTNER 2004) is closely linked to the digitalization of the enterprise. Today, information technology plays an integral role in virtually every business process. The data and information needed to execute a business process is increasingly available digitally and processing is done progressively using specialized software packages and automated routines. Accordingly, the integration of software packages often inevitably leads to the integration of business processes, and in almost the same manner the outsourcing of software service is often inevitably associated with the outsourcing of entire business processes. Indeed, the traditional IS outsourcing life-cycle has already been partially replaced by a BPO life-cycle, leading to questions such as why BPO, how to manage BPO and how to determine the success of BPO.

Feeny, Willcocks and Lacity explore in some detail how companies can successfully implement BPO. In particular, they perform an in-depth analysis of four BPO deals of Xchanging, a major international BPO provider. Based on the case analysis they identify 12 capabilities that are necessary to achieve the expected benefits from outsourcing back office services, such as HR, procurement, insurance settlement, and transactions and claims management. Moreover, they highlight a number of differences between traditional fee-for-service and partnership style arrangements. The appropriateness of both models critically depends on the objectives associated with BPO.

Rouse and Corbitt examine two organizations contemplating the adoption of BPO, and consider their expectations and experiences in light of the existing empirical literature on outsourcing. Their paper highlights that while outsourcing decisions are not technically irreversible, they are usually so in practical terms.

5.6 Offshoring and Global Outsourcing

Finally the traditional outsourcing life-cycle is challenged by the offshore phenomenon. While only one dimension – the location of the vendor – differs from domestic outsourcing, the wider implications of this single change are significant.

Sahajpal, Agrawal, Kishore and Rao provide an overview of the offshore business process outsourcing phenomenon while describing a case study of General Electric's BPO operations in India. The authors first offer background of outsourcing and describe the global BPO market. They present the new categories of services that are being outsourced, focusing specifically on India as a destination for BPO services. The authors discuss the various forms of business process outsourcing that are evolving in the overseas marketplace; and offer the case study of GE as an example of offshore business process outsourcing.

Carmel and Agarwal examine the experiences that organizations have with IT offshoring. Based on multiple case studies including 13 US corporations, they identify four stages of maturity that reflect an organization's level of sophistication in the offshore effort. Offshore bystanders are Stage 1 companies that do not offshore at all, but may have a few advocates pushing the idea. Stage 2 companies, offshore experimenters, are pilot testing sourcing non-core IT processes offshore. Stage 3 companies take a proactive cost focus and seek broad, corporate-wide leverage of cost efficiencies through offshore work, while stage 4 companies take a proactive strategic focus and view offshore sourcing as a strategic imperative. The stage model helps organizations to analyze their current offshore behavior and shows the conditions for moving up the maturity curve.

Krishna, Sahay and Walsham examine the question how cross-cultural difficulties of global software outsourcing relationships can be addressed. In particular, they examine cultural difficulties that arose in real world software development

projects from a sample of organizations in North America, Europe and Japan to Indian vendors. Based on their analysis of these offshore projects, they identify factors that are important to consider in the choice of projects that can be offshored as well as in managing the offshore relationship. Moreover, they provide a number of suggestions on staffing issues and training needs.

Nicholson and Sahay develop a conceptual scheme for understanding the role of knowledge management in offshore software development. They do so by drawing on theories associated with the notion of community of practice. They illustrate the value of these ideas by applying it to a case of a British software company with a failed offshore subsidiary in India. They conclude by offering some practical and theoretical implications for communities of practice and offshore software development

Hirschheim concludes the book with a somewhat provocative look at the implications of offshoring on the discipline of Information Systems. He speculates that the locus of attention has begun shifting to India and China, and that this will have significant implications for the field of IS, especially as it exists in the West.

6 Conclusions

In reading the various chapters in this book, we reflected upon what we know and what we don't know about the field. Although the first edition of the book did much to document what has been learned about IT outsourcing over the past 10 years, numerous interesting questions remain. For example, will the outsourcing model evolve into more of an ASP model? Will outsourcing expand to embrace more business functions such as accounting, legal, HR, logistics and marketing? How will organizations determine the optimal mix of outsourcing and insourcing? How will it differ between different organizations in different industries in different countries? Will organizations tire of outsourcing and decide to bring IT back in-house? How will organizational politics influence outsourcing – especially global outsourcing - decisions now and in the future? We have tried to articulate some of these important questions but there are many more. Hopefully this book will help motivate individuals to either begin research in the field or continue engaging in outsourcing research. Much has been done, but there is still much more to be done. We hope the reader enjoys the papers in this volume. Happy reading!

References

Anthes, G. "In Depth; Not Made in the USA," in: Computerworld, 1993.

Apte, U. "Global Outsourcing of Information Systems and Processing Services," *Information Society* (7:4) 1990, pp 287-303.

Apte, U.M., Sobol, M.G., Hanaoka, S., Shimada, T., Saarinen, T., Salmela, T., and Vepsalainen, A.P.J. "IS Outsourcing Practices in the USA, Japan and Finland: A Comparative Study," *Journal of Information Technology* (12:4) 1997, pp 289-304.

Aubert, B., Rivard, S., and Patry, M. "A Transaction Cost Model of IT Outsourcing," *Information & Management*, 41, 2004, pp. 921-932.

Balzert, H. Lehrbuch der Software-Technik: Software-Entwicklung, Spektrum Akademischer Verlag, Heidelberg, Berlin, 2001.

Benbasat, I. and Weber, R. "Research commentary: Rethinking 'diversity' in information systems research," *Information Systems Research*, (7:4), 1996, pp. 389-399.

Carmel, E., "Taxonomy of New Software Exporting Nations" *Electronic Journal of Information Systems in Developing Countries* (EJISDC), 13, 2003a

Carmel, E., "The New Software Exporting Nations: Success Factors" *Electronic Journal of Information Systems in Developing Countries* (EJISDC), 2003b

Carmel, E. and Agarwal, R. "Tactical Approaches for Alleviating Distance in Global Software Development," *IEEE Software*, March/April, 2001, pp. 22-29.

Carmel, E. and Agarwal, R. "The Maturation of Offshore Sourcing of Information Technology Work," *MIS Quarterly Executive*, Vol. 1, No. 2, 2002, pp. 65-78

Clemons, E. K., L.M. Hitt, and E. M. Snir. "A Risk Analysis Framework For IT Outsourcing," http://tecom.cox.smu.edu/esnir/Outsourcing.pdf; Oct 31, 2000.

Coward, C. T., "Looking Beyond India: Factors that Shape the Global Outsourcing Decisions of Small and Medium Sized Companies in America", *Electronic Journal of Information Systems in Developing Countries*, 13, 2003

Cullen, S., Seddon, P., and Willcocks, L. "Managing Outsourcing: The Lifecycle Imperative," *MISQ Executive*, 4:1, 2005, pp. 229-246.

Davis, G., Ein-Dor, P., King, W. and Torkzadeh, R. "IT Offshoring: History, Prospects and Challenges", paper presented at *ICIS* 2004, Senior Scholars Session, Washington, 2004

Dibbern, J., T. Goles, R. Hirschheim, and B. Jayatilaka, "Information Systems Outsourcing: A Survey and Analysis of the Literature", *DATA BASE*, Vol.35, No.4, December 2004, pp. 6-102.

EBusiness Strategies, "Offshoring Statistics - Dollar Size, Job Loss, and Market Potential," http://www.ebstrategy.com/Outsourcing/trends/ (Aug 10, 2004).

Friedman, T. The World is Flat: A Brief History of the Twenty-First Century, Farrar, Straus & Giroux, NY, 2005.

Gallivan, M. J. and Oh, W. "Analyzing IT Outsourcing Relationships as Alliances among Multiple Clients and Vendors," *Proceedings of the 32nd Annual International Conference on System Sciences*, Hawaii, 1999.

GARTNER, Outsourcing Market View, What the Future Holds, 2004.

Gopal, A., L. Beaubien, and T. Marcon. "Old wolf, new wool suit: India, IT, and the Legacy of Colonialism," *Proceedings of the 23rd International Conference on Information Systems, 2002*, pp. 525-532.

Hayek, F. "The Use of Knowledge in Society," *American Economic Review* (35), 1945, pp. 519-530.

Heeks, R. and B. Nicholson. "Software Export Success Factors and Strategies in Follower Nations," *Competition and Change*, 8(3), Sept. 2004, pp. 267-303.

Heinrich, L.J. Informationsmanagement - Planung, Überwachung und Steuerung der Informationsinfrastruktur, München, Wien, 1999.

Hirschheim, R. and M. Lacity, "Information Technology Insourcing: Myths and Realities", *Communications of the ACM*, Vol.43, No.2, February 2000, pp. 99-107

Hirschheim, R., B. George and S. Wong. "Information Systems Outsourcing: The move towards offshoring." Special Issue on Offshore Outsourcing of the *Indian Journal of Economics and Business*, Fall 2004

Ives, B. "Harnessing the Internet to Your Customer Strategy," Tulane & Louisiana State Universities, http://isds.bus.lsu.edu/cvoc/projects/cslc, Access October 8th, 1999, Last Update September 1999.

Ives, B. and Learmonth, G.P. "The Information System as a Competitive Weapon," *Communications of the ACM* (27:12), 1984, pp. 1193-1201.

Kaiser, K. and Hawk, S. "Evolution of Offshore Software Development: From Outsourcing to Co-sourcing," *MISQ Executive*, 3:3, 2004, pp.69-81.

Kakabadse, A., and Kakabadse, N. "Trends in Outsourcing: Contrasting USA and Europe," *European Management Journal* (20:2) 2002, pp 189-198.

Kelly, T. "A Brief History of Outsourcing," Global Envision, 2002

Khan, N., Currie, W., Weerakkody, V., and Desai, B. "Evaluating Offshore IT Outsourcing in India: Supplier and Customer Scenarios," *Proceedings of the 36th Hawaii International Conference on System Sciences*, 2002.

Kumar, K., and Willcocks, L. "Offshore Outsourcing: A Country Too Far?," *Proceedings of the 4th European Conference on Information Systems*, 1996, pp. 1309-1325.

Lacity, M. and Hirschheim, R. Information Systems Outsourcing: Myths, Metaphors and Realities, Wiley, Chichester, 1993.

Lacity, M., R. Hirschheim and L. Willcocks, "Realizing Outsourcing Expectations: Incredible Expectations, Credible Outcomes", *Information Systems Management*, Vol.11, No.4, Fall 1994, pp.7-18

Lacity, M.C., and Willcocks, L.P. Global Information Technology Outsourcing: In Search of Business Advantage Wiley, Chichester, 2001.

Linder, J. Outsourcing for Radical Change, AMACOM, NY, 2004

McFarlan, F.W. "Issues in Global Outsourcing," in: Global Information Technology and Systems Management: Key Issues and Trends, P. Palvia, S. Palvia and E. Roche (eds.), Ivy League Publishing, Nashua, 1995, pp. 352-364.

Mears, J. and Bednarz, A. "'Take it all' outsourcing on the wane," *Computerworld*, May 30, 2005

Morstead, S., and Blount, G. Offshore Ready: Strategies to Plan & Profit from Offshore IT-Enabled Services ISANI Press, United States of America, 2003.

Nicholson, B., and Sahay, S. "Some political and cultural issues in the globalization of software development: case experience from Britain and India," *Information and Organization* (11) 2001, pp 25-43.

Overby, S. "The Hidden Costs of Offshore Outsourcing," in: CIO Magazine, 2003.

Pastin, M., and Harrison, J. "Social Responsibility in the Hollow Corporation," *Business & Society Review*, 1974, p 54

Pruitt, S. "Survey: 275,000 telecom jobs to go offshore by 2008," in: *Computerworld*, 2004.

Qu, Z., and Brocklehurst, M. "What will it take for China to become a competitive force in offshore outsourcing? An analysis of the role of transaction costs in supplier selection.," in: *Journal of Information Technology*, (18:1), 2003, pp. 53-67.

Rajkumar, T.M., and Dawley, D.L. "Problems and Issues in Offshore Development of Software," in: *Strategic Sourcing of Information Systems*, L.P. Willcocks and M.C. Lacity (eds.), John Wiley & Sons Ltd, 1998.

Ramanujan, S., and Lou, H. "Outsourcing Maintenance Operations to Off-Shore Vendors: Some Lessons from the Field," *Journal of Global Information Management* (5:2) 1997.

Rao, M. T. "Key Issues for Global IT Outsourcing: Country and Individual Factors," *Information Systems Management*, Summer 2004, pp.17-21.

Robinson, M. and Kalakota, R. Offshore Outsourcing: Business Models, ROI and Best Practices, Milvar Press, 2004

Rottman, J. and Lacity, M. "Offshore Sourcing: Twenty Practices for Swift Learning, Risk Mitigation, Supplier Management, Cost Control, and Quality Assurance", *MISQ Executive*, (3:3) 2004.

Sabherwal, R. "The role of trust in outsourced IS development projects," *Communications of the ACM* (42:2) 1999, p 80-86.

Sahay, S. Nicholson, B. and Krishna S. Global Software Work: Micro-Studies Across Borders, Cambridge University Press, 2003.

Sheshabalaya, A., Rising Elephant: The Growing Clash with India over White Collar Jobs and Its Challenge to America and the World, Common Courage Press, Monroe, ME, 2004.

Souza, R.D., Goodness, E., Young, A., Silliman, R., and Caldwell, B.M. "IT Outsourcing Market Forecast: Worldwide, 2002-2007," Gartner Research, 2004.

Terdiman, R. "Offshore Outsourcing Can Achieve More Than Cost Savings," Note number: CS-16-3520, Gartner, 2002.

Vaze, S. "The Politics (and Economics) of Outsourcing," *Express Computer*, 2005

Zelkowitz, M.V., Shaw, A.C. and Gannon, J.D. Principles of Software Engineering and Design, Prentice-Hall, Englewood Cliffs, 1979.

Part II:

Determinants of the IS Outsourcing Decision

Costs, Transaction-Specific Investments and Vendor Dominance of the Marketplace: The Economics of IS Outsourcing[1]

Soon Ang

School of Accountancy and Business, Nanyang Technological University, Nanyang Avenue 2263, Republic of Singapore, asang@ntuvax.ntu.ac.sg, FAX: (65) 792-2313

Detmar Straub

Robinson College of Business, Computer Information Systems Department, Georgia State University, University Plaza, Atlanta, GA 30303-4012, dstraub@gsu.edu, 404-651-3880, FAX: 404-651-3842

1 Introduction

The strategic importance of information systems (IS) in banking is widely substantiated (Steiner and Teixeira 1990; OECD 1992; Office of Technology Assessment 1984; Office of Technology Assessment 1987; Apte et al 1990; McFarlan and McKenney 1983). Yet, in spite of this, some banks have outsourced their entire information services function (American Bankers Association 1981; 1986; 1990). On the surface, it seems counterintuitive that banks should potentially erode their competence in the design and delivery of strategic financial services relying heavily on information technology (IT).

Part of the explanation lies in past behaviors and long standing theories about how organizations respond to their environment. According to classical theories of the firm, organizations strive toward autonomy (Gouldner 1959; Burt 1982). They maintain independence by integrating as many business activities as possible within their hierarchical control. By means of backward and forward integration,

---

[1] Another version of this paper appeared as: Ang, Soon and Detmar Straub, "Production and Transaction Economics and IS Outsourcing: A Study of the U.S. Banking Industry," *MIS Quarterly,* Vol. 22 No. 4 (December, 1998), pp. 535-552. The current, related-but-different version appears with permission of *MIS Quarterly*.

organizations secure access to markets, safeguard suppliers to raw materials, and prevent competitors from obtaining such access.

While corporations overall have demonstrated many of these tendencies in the post World War II era, a reversal of this trend had begun to emerge by the mid-1980s (Harrison and St. John 1996). Described as "hollowing out of the corporation," organizations began to relinquish internal control and depend more heavily on external service-providers. Outsourcing prompted firms to abandon internal production bases and rely on others for manufacturing, distribution, and other business functions.

The growing practice of outsourcing in modern corporations has led both academics and practitioners to theorize and speculate about the underlying momentum towards outsourcing. The intriguing question is: If organizations are "dependence-avoiders" (Gouldner 1959), why expose oneself to inter-organizational dependencies in outsourcing arrangements? In addition to external dependencies, outsourcing brings on costly and radical changes. It creates upheavals in existing organizational structure and redefines organizational roles. Organizations must hire and terminate employees, sell off fixed assets, and plan for geographical relocation of firm operations.

The evolving literature on information technology (IT) outsourcing offers a variety of explanations for why outsourcing occurs. Many of these arguments have a basis in economic theories and models. One of the most commonly cited reasons, for example, is that managers feel that they can gain cost advantages by hiring outsiders to perform certain services and produce certain products (Alpar and Sharia 1995; Loh and Venkatraman 1992a). Transaction cost theory offers another economic perspective (Nam, Rajagopalan, Rao, and Chaudhury 1996) that typically frames outsourcing as a decision about drawing firm boundaries (Pisano 1990; Mosakowski 1991) or as vertical integration (Anderson and Schmittlein 1984; Monteverde and Teece 1982; Harrigan 1985). Financial slack and firm size are other factors which can be conceptualized, at least in part, as economic constructs.

This study argues that we can improve our ability to explain outsourcing within the larger context of organizational responses to their strategic environment by focusing on such economic considerations. Our findings suggest which factors play into the outsourcing decision and their relative importance in sourcing choices.

2 Theory Development and Hypotheses

The theoretical model developed in this paper is shown in Figure 1. All relationships except for the connection between degree of outsourcing and firm performance are tested in the current study.

First, in profit-oriented organizations, economics plays an important role in justifying any sourcing strategy. Production and transaction economies are, therefore, appropriate and necessary theoretical lenses for investigating outsourcing.

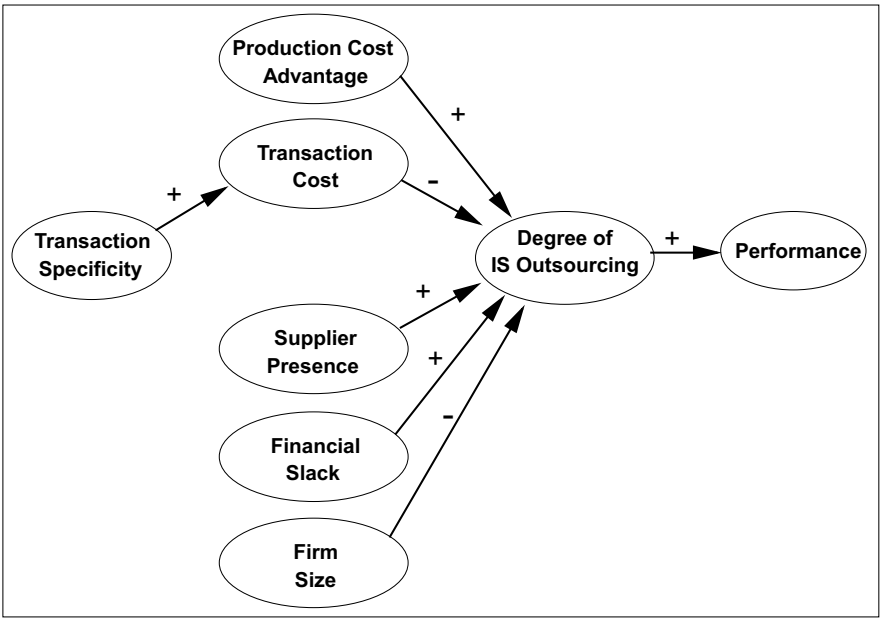


Figure 1: Theoretical Model for Etiology of IT Outsourcing

2.1 Production Economies

Neoclassical economics regards any business organization as a "production function" motivated by profit-maximization (Hirschleifer 1976; Williamson 1981). To maximize profits, organizations provide goods and services to markets where they have cost advantages and rely on the marketplace for goods and services in which they have comparative cost disadvantages. As a theory about how firms choose sourcing options, neoclassical economics predicts that firms justify sourcing options based on production economies. In terms of production economies, acquiring products and services is treated as an economic `make-or-buy' decision — a decision that compares production costs of internal operations

versus the price offered in the marketplace (Walker and Weber 1984; Ford and Farmer 1986). In the context of IS, a firm will choose to outsource or insource based on the comparative costs of internalizing IS versus the price it has to pay vendors for the same IS services. Accordingly, we would expect that:

Hypothesis 1: *The higher the comparative production cost of IT offered by systems integrators, the more likely are firms to outsource IT.*

2.2 Transaction Economies

Transaction cost economics extends the neoclassical economic perspective of the firm by recognizing the significance of transaction costs in any market exchange. Transaction costs refer to the effort, time, and costs incurred in searching, creating, negotiating, monitoring, and enforcing a service contract between buyers and suppliers (Coase 1937; Williamson 1975; Mahoney 1992). Transaction costs can erode comparative advantages in production costs of vendors. When a firm has to incur substantial effort and costs in supervising, coordinating, and monitoring the activities of the vendor, it may decide that external sourcing is too costly. Accordingly, firms may opt for internal sourcing when they perceive transaction diseconomies to override any production cost advantages in market exchanges.

At the core of transaction cost economics is the notion that transaction costs of any economic activity are determined by asset specificity associated with that activity (Williamson 1985). The degree of asset specificity required in an exchange significantly affects the level of transaction costs. Asset specificity refers to the degree to which investments are unique to the contracting relationship and, hence, possess considerably less value outside the transaction relationship (Joskow 1988). In IS services, transaction specific assets include fixed assets such as specialized and dedicated equipment, operating procedures, and software systems tailored for the use of a specific organization. In addition to specialized computer systems, specific assets also include idiosyncratic professional skills, and specialized know-how embedded in human assets. Professional skills refer to those expertise and know-how acquired only through several years of specialized education and training; while specialized know-how refers to knowledge that is useful in only a narrow range of applications which cannot be easily put to use elsewhere; and customization refers to the degree to which a service is uniquely tailored to one or a few users (Ang and Beath 1993; Erramilli and Rao 1993).

According to transaction cost analysis, it is imprudent to assume that parties to an exchange will forgo opportunistic behavior. As a result, transaction specific investments potentially pose a problem because a firm's sustained use of these assets may depend on the good-faith behavior or forbearance of the IT service-provider. Consequently, firms are exposed to the possibility of relationship

termination or "opportunistic expropriation" if the service-provider chooses to capitalize on the transaction (Klein, Crawford, and Alchian 1978).

The safeguard against opportunistic appropriation is to rely on additional monitoring and enforcing measures to ensure co-alignment of interests between the firm and the external service-providers. Thus, transaction specific investments in IS services would lead to increased transaction costs, and may, in time, influence the firm towards an internal supply of services where bureaucratic control and ownership reduce the capacity and motivation to expropriate the value of one's specific investments (Heide and John 1990). In sum, transaction cost economics argues that firms need to retain transaction-specific investments in order to avoid the extremely high transaction costs that result from outsiders creating, maintaining, and safeguarding transaction-specific investments.

Retaining transaction-specific investments is closely related to the line of thinking that firms should outsource only non-core competencies (Prahalad and Hamel 1990; Quinn 1992; Bettis, Bradley, and Hamel 1992; Venkatesan 1992). According to the core-competency perspective, modern organizations cannot afford to internalize and maintain all productive and administrative apparatus necessary to react to external environments that are increasingly dynamic and hypercompetitive. To reduce cost and gain competitive advantage, organizations should source for services and products strategically by internalizing components critical to the product or service which they have distinctive competency and outsourcing peripheral business activities. Service and product assets so “specific” to the firm that they must be maintained through the internal base are, therefore, strategic assets. Information systems that qualify as strategic assets should not be outsourced unless contractual guarantees can be set in place (Nelson, Richmond, and Seidman 1996). Contracting systems integrators to steward these assets is costly, however. Accordingly, as argued by Lacity and Hirscheim (1993), Alpar and Saharia (1995), and Nam et al. (1996):

Hypothesis 2_a: *The lower the perceived transaction costs involved in hiring outsourcers, the more likely are firms to outsource IT.*

and

Hypothesis 2_b: *Transaction-specific investment is positively related to transaction costs.*

In the context of product or service procurement, supplier presence or the availability of alternative vendors has also been posited to affect the level of transaction costs (Walker and Weber 1984). Supplier presence is a term that is defined as the availability of reputable and trustworthy external IT service-providers in the market (Walker and Weber 1984). The basic issue is whether the vendor has such a dominant position in the marketplace that the firm suspects that the pricing offered by the vendor is not competitive. In general, opportunistic inclinations by any party in a contractual arrangement pose little risk as long as

competitive exchange relations — that is, a large supplier presence — exist (Pisano 1990; Ferris and Graddy 1988). In other words, provided the market offers a sufficient number of potential suppliers to ensure adequate competition for the management of IS services, the likelihood for opportunistic bargaining on the part of the supplier decreases (Walker and Weber 1984). Thus, the transaction costs of external contracting are related to the competition between alternative external IT service-providers who provide comparable services. In fact, firms may be constrained in their outsourcing choices if a full array of IS services are not available from another supplier. Consequently, it is contended that the presence of suppliers promotes outsourcing as an attractive alternative to in-house operations since greater supplier presence reduces *ex-ante* small bargaining problems that threaten outsourcing (Williamson 1975).

Hypothesis 2_c: *The higher the supplier presence (i.e., the likelihood that perceived transaction costs with IT service-providers will be low), the more likely are firms to outsource IT.*

2.3 Financial Slack

The sourcing conundrum may be explained by a firm's discretionary use of financial slack. Financial slack refers to financial resources an organization possesses in excess of what is required to maintain the organization. Cyert and March (1963) define slack as the difference between total resources and necessary payments while Bourgeois (1981) describes slack as "a cushion of excess resources available in an organization that will either solve many organization problems or facilitate the pursuit of goals outside the realm of those dictated by optimization principles" (p. 29).

Whenever a firm possesses excess resources, it tends to invest the resources towards increasing the size of the firm. As Jensen (1989) observed, firms tend to invest slack in promoting firm size through asset capitalization rather than in distributing the excess resources back to shareholders. Based on a behavioral view of the firm, the rationale is that, by increasing asset capitalization and, in turn, enlarging the scale and scope of the firm, senior executives in the firm enhance social prominence, public prestige, and political power vis-a-vis other firms in the marketplace (Baumol 1959; Williamson 1963; Cyert and March 1963, Pfeffer 1981; Edwards 1977; Awh and Primeaux 1985).

In the 1970s and early 1980s, slack resources were employed to build the internal IT infrastructure. Especially in information-intensive industries such as banks, IT is considered to be "crown jewels." IT symbolizes *avant garde*, firm growth, advancement, and progress (Sitkin, Sutcliffe, and Barrios-Choplin 1992; Huber 1993). Investments in IT can promote social prominence and public prestige, managers are induced to invest slack resources on internalizing IS services. Inducements towards investments on in-house IS services are further reinforced by

well-publicized case studies which demonstrate the competitive advantage and new business opportunities afforded by IT (e.g., Cash, McFarlan, McKenney, and Vitale 1988).

The above reasoning suggests that when organizations possess slack resources, firms may enlarge the scale and scope of their operations by deploying slack resources toward building up internal IT resources in the form of hardware, software, and IS human resources. Conversely, when slack resources are low, firms are likely to resist internalizing in response to the anxiety provoked by loss of financial resources (Sutton and D'Aunno 1989). Anxiety is provoked because the loss of financial resources is often attributed to managerial incompetence and organizational ineffectiveness (Whetton 1980). When financial performance is poor, leaders are more likely to be blamed and replaced (Meindl, Ehrlich, and Dukerich 1985; Pfeffer and Salancik 1978). In response to the anxiety provoked by loss of financial resources, decision makers have been found to reduce costs through downsizing the company by selling off physical assets and laying off workers (Rubin 1977; Warren 1984; Tomasko 1987). In fact, a recent report to the Congressional Committee by the General Accounting Office (GAO 1992) raised concerns that banks were selling IT assets at inflated rates to external service-providers to generate short-term financial slack. The banks then reimbursed the service-providers by paying higher servicing fees for a long-term outsourcing contract of eight to ten years. Specifically, long term facilities management contracts were drawn where the service-providers agreed to purchase bank assets, such as computer equipment, at substantially higher prices than the market value and to provide capital to the bank by purchasing stock from the bank. Arrangements such as these permit banks to maintain capital, defer losses on the disposition of assets, and at the same time, show an increase in financial value on the balance sheet. Accordingly, when slack resources are low, firms can be expected to downsize internal IS services by selling off IT assets and reducing IS personnel and occupancy expenses.

The concerns of the General Accounting Office are substantiated by assessments of actual outsourcing arrangements among large organizations (Lacity and Hirschheim 1993). For example, in the outsourcing arrangement between First City and EDS, EDS provided First City with much needed financial slack by purchasing First City's information systems assets. In effect, EDS assisted the bank in completing a "badly need recapitalization" (Mason 1990, p. 287; cited in Lacity and Hirschheim 1993). Similarly, executives at General Dynamics viewed their outsourcing arrangement with Computer Services Corporation as a way to partly recover their IT investment (Seger and McFarlan 1993). The vendor may offer a financial package whose net present value is extremely attractive to the prospective customer. Cash infusions for information assets, postponing payments until the end of the contract, and even purchases of the customer's stock render outsourcing desirable (Lacity and Hirschheim 1993). The above analysis thus suggests the following hypothesis:

Hypothesis 3: *The lower the financial slack, the more likely are firms to outsource IT.*

2.4 Firm Size

Like financial slack, with which it has a clear relationship, firm size has a basis in economic theory. Microeconomic theory, in fact, defines firm size in terms of a firm's technical and allocational efficiency (You 1995). The reasoning is fairly straightforward. In achieving internal production cost advantages and economies of scale in their IT activities, larger firms are thus less inclined to outsource than their smaller counterparts. Anderson and Schmittlein (1984) articulate this argument in the following way:

> Since large firms achieve economies of scale in finding, holding, and utilizing management skills, a large firm "may be able to get more mileage out of its expenditures on a field sales force and other marketing instruments." Scale economies are likely to play an important role in virtually all integration decisions (p. 388).

While there are good reasons for considering the economic impact of firm size on the outsourcing decision, some IT researchers argue that firm size will not prove to be a decisive factor. McHenry (1992) asserts that "the question of what size company can benefit from the outsourcing alternative quickly loses its significance after the core business questions have been asked." Nevertheless, theory would argue that, in general:

Hypothesis 4: *The smaller the firm, the more likely it is to outsource IT.*

2.5 Firm Performance

Firms outsource to create value and so there should be a construct representing this value in etiological models of outsourcing. Grover et al. (1996) found significant linkages between IT outsourcing and focus on core competencies, ability to use the vendor's capabilities, and staying abreast of new technology. They did not test firm performance. Teng et al. (1995), Loh and Venkatraman (1992) and Smith et al. (1997) have not found a consistent, significant linkage between theses variables. In a study of over 20 major US-based outsourcing decisions, Smith et al. (1997), for instance, found few significant IT outsourcing-performance links.[2]

---

[2] Smith et al (1997) used a large variety of archival financial measures and ratios. Among the COMPUSTAT metrics analyzed were: SG&A / Sales; Operating expense/ Sales; Sales / Employee; Asset Turnover; Return on Assets; Return on Equity; Operating Margin; Growth Rate; Dividend yield; Dividend / Sales; Market to book ratio; Cash

The current study does not examine this relationship. Nevertheless, it is the ultimate question for research on IT outsourcing and should be acknowledged as such in our models.

3 Study Method

3.1 Sample and Design

To test the hypotheses described in Section 2, it was necessary to find a population of firms that adopt IS sourcing arrangements which vary by degree of internal control of IT resources. The population must also vary in external production cost advantage, transaction costs, degree of slack resources, and firm size. Finally, to rule out possible effects of decision novelty, the population of firms must have had knowledge and experience with making sourcing and acquisition decisions in information systems.

Banks satisfy these criteria. First, surveys on the use of IT by the American Bankers Association showed that banks, as information-intensive users, acquire IS services from a variety of sources. Banks can opt from services provided in-house, by parent banks; correspondent banks; service bureaus; cooperative joint ventures; and facilities management (American Bankers Association 1981; 1986; 1990). As discussed in Ang (1994), these alternative arrangements vary in the degree of internal control banks have of the IS services. Second, because banks vary in size, profitability, IT scale and scope operations, antecedents such as production and transaction economies, financial slack, and perceived institutional influences are expected to vary across banks. Finally, deciding on alternative sources of IS services is not novel among banks. The preponderance of banking literature (cf. ABA Banking Literature Index 1977-1993) describing and prescribing alternative IS sourcing arrangements suggests that wrestling with an appropriate source of IS services is one of the central themes in managing IS resources in the banking industry since the inception of IT into the industry more than two decades ago.

This study adopts a survey research design as the best method for collecting original data from a population too large to observe directly. At the time of this study, there were more than 13,000 commercial banks in the United States. Commercial banks are members of the American Bankers Association, the premier bank association in the nation. The Association released its members list for the purposes of this research. This study adopted a sampling procedure which

---

and Equivalent / Sales; Total Liabilities / Sales; Long term debt / Sales; and Current Liabilities / Sales.

stratified the population of commercial banks by size because bank size has been shown to affect organizational boundary decisions such as outsourcing (Anderson and Schmittlein 1984; Clark, Chew, and Fujimoto 1987; Pisano 1990).

In the banking industry, banks not only vary in asset capitalization, and, therefore, in their power to purchase or internalize IT resources; more importantly, they also differ in their *nature of business, bank strategy, and the customer base they serve*. Small banks are community banks focusing on retail operations while large banks tend to be regional money centers providing wholesale and international bank services to corporate clients. Thus, bank size not only measures scale differences but also reflects scope differences (Nootebloom 1993).

An analytical sample resulting in a response of at least 200 was sought to ensure sufficient statistical power. To attain a sample of approximately 200 banks, 385 banks[3] were drawn from the population. The banks consisted of 85 very large banks[4] and a random selection of 100 banks in each of the other three size strata: large, medium, and small. This four size strata has been adopted by the American Bankers Association as a way of stratifying their industry.

The sampling approach was to survey random banks from the three strata other than the very large banks, whose population of 85 banks was sufficiently small to permit surveying the entire stratum. Mailing questionnaires to the entire population of the very large banks eliminates the issue of whether the sample represents the population (assuming no response bias). Moreover, since sampling of the other three strata was random by design, there should be no systematic bias in the sample finally selected for mailing. That is, the three sub-samples of large, medium, and small banks should fairly represent their populations.

The sampling strategy does not, however, eliminate the possibility of systematic bias in respondents. This is essentially an external validity issue and to test this in the returned sample, community and medium-sized banks were classified as small banks while large and very large banks were classified as large banks.

Based on the sample size of 385 banks, a final number of 243 banks responded, generating an overall response rate of 63.1%. This high response rate was attributable to the focused interest in, and the importance of, IS outsourcing among commercial banks. The high response rate was also due to the elaborate data collection process of eliciting the participation of the respondents and following through with each respondent on an individual and personal basis.

---

[3] The figure 385 was based on an estimate of a roughly fifty percent response rate, a gauge offered by the local bank community during the pilot phase of this study.

[4] At the time of the survey, the total number of very large banks in the United States was 85.

A single respondent from each bank completed the questionnaire. The respondent was either the CIO or a high-level ranking person in charge of IS.[5] On the average, the respondents had 12.89 (S.D.= 9.09) years of work experience with the bank, and 19.58 (S.D. = 8.11) in the banking industry.

3.2 Test of Non-Response Bias

Given our response rate of over 63%, the external validity of the study is "good," according to Babbie (1973, p. 165). This means that the chance that there is a systematic bias in the respondents is small.

To assess external validity of the sampling, however, we examined the difference between demographics of the respondent group versus the non-respondent group. Specifically, Table 1 provides a breakdown of respondents and non-respondents by bank size. For this analysis, community and medium-sized banks were combined in this study as small banks while large and very large banks were combined as large banks. Based on a $\chi 2$ analysis, no significant difference existed between the distribution of participants and the distribution of the original sample based on bank size ($\chi 2 = 3.62$, df = 1, $p > .05$). Thus, in terms of bank size, firms participating in the study do not appear be a systematically biased sample.

Table 1: Breakdown of Respondents and Non-Respondents by Bank Size

	Large	Small	Total
Response	108	135	243 63.1%
Non-response	77	65	142 36.9%
Total	185	200	385 100%

[5] Of the 243 respondents, only 23 held official titles of the Chief Information Officer (CIO). The more common designation for the person responsible for the IS function in banks was either the Senior Vice President or the Vice President of Information Services. In fact, eighty-eight respondents held titles of Senior Vice President and 76 were Vice Presidents responsible for information systems or bank computer services. The rest of the respondents (56) held titles such as the Cashier, or Bank Operations Officers who were responsible for the overall banking operations including the information services function of the bank.

3.3 Procedure

A draft instrument was qualitatively and quantitatively pretested to ensure that the instrument was valid for use in a large sample. The instrument was pretested with the chief information officer at each of the twenty-one banks within the Minneapolis-St. Paul, Minnesota (USA) metropolitan area.[6] The pilot study ensured clarity and readability of the instrument and ascertained that the theory-based items in the instrument tapped issues of concern with regards to sourcing decisions (Straub 1989). Questionnaire length was also assessed to reduce potential response-rate problems. Phone interviews and mail questionnaires were primary means for collecting data. Based on the list of names, addresses, and telephone number of banks provided by the American Bankers Association, each bank in the stratified sample was contacted by phone to identify the person who held corporate responsibility for IS in the bank. His or her name, position title, mailing address, and telephone number were noted. The informant of large banks usually held the title of the Chief Information Officer (CIO), or Senior Vice President responsible for bank operations. In smaller banks, the informant was typically the President or Cashier. With the name of potential informant, a letter describing the purpose of study and requesting participation was sent to each potential informant. After a week or ten days after the letter was sent, the potential informant was contacted by phone. A packet of materials containing a cover letter, survey instrument and a self-addressed, stamped enveloped was sent to participants. Slightly more than 66% of completed questionnaires were returned within three weeks upon sending out the instrument. In the case where the survey was not returned, follow-up phone calls, written reminders and duplicate survey instruments were sent to "errant" participants. In total, at least three efforts were made to ensure participants who had previously committed to the project finally completed and returned the survey instrument. Returned questionnaires were examined for completeness of information. Respondents who omitted items in the questionnaires were contacted again by phone to obtain missing information. Once completed questionnaires were received, archival financial information on the banks were retrieved from the Federal Reserve Bank databases. Executive summaries of the preliminary and final analyses of the study were subsequently sent to each respondent.

3.4 The Survey Design

A major source of data was a paper and pencil survey instrument administered to bank officers who have corporate responsibility for IS in their respective commercial banks. Each bank officer acted as the informant for his or her bank's sourcing arrangement and practices in information systems services.

---

[6] Banks in the pilot study were omitted from the main study.

Items in the survey instrument measured the degree of IS outsourcing, external production cost advantage, transaction cost variables, and slack. Table 2 presents the relevant characteristics of these measures. The operational definitions and actual items appear in Appendix A. For transaction costs and financial slack, multiple, distinctly different measures of the constructs provided a variant viewpoint on the same sets of relationships (Cook and Campbell 1979).

Table 2: Characteristics of Measures

Construct	Scales/Measures	# of Items	Type of Variable	Reliability*
IT Outsourcing	Degree of Internal Resource Control	8	Survey scale	.92
Production Cost	Cost Advantage	5	Survey scale	.93
Transaction Cost	Perceived Transaction Costs	3	Survey scale	.75
	Asset Specificity	2	Survey scale	.57
	Supplier Presence	3	Survey scale	.84
Financial Slack	Available Slack	1	Archival data	—
	Potential Slack	1	Archival data	—
	Perceived Slack	2	Survey scale	.72
Size	Firm Size	1	Archival data	—
	Log of Firm Size	1	Derived	—

* Reliabilities were assessed with Cronbach's α

To validate the instrument, a principal components factor analysis was performed to assess the dimensionality of each scale. All scales were found to be unidimensional. Multiple-item constructs were subjected to Cronbach's α reliability testing to assess internal consistency. Most of the scales were reliable, as Table 2 shows. Relatively low reliability, however, was found for asset specificity (Cronbach's α =.57). As discussed in Van de Ven and Ferry (1980), a construct with relatively broad sampling scope covering a number of conceptually distinct facets tends to result in low reliability. In the case of asset specificity, informant were asked to assess two different types of specific assets: human assets in the form of specific IS skills and fixed assets such as investments in computer equipment. The correlation between the two forms of specific assets was .39, suggesting that the construct assets specificity in the context of IS services is relatively broad to cover two distinct facets of assets. Nevertheless, this statistic is

not dramatically below Nunnally's .60 rule of thumb (1967) for exploratory research and the construct was retained for that reason.

3.5 Archival Data

A second important source of data for this study was financial indices extracted from two from two Federal Reserve Bank financial databases: *Bank Holding Company Performance Reports* and *Uniform Bank Performance Reports.* These databases contain financial statistics for individual commercial banks in the United States and comparative financial indices for banks in the same peer or size categories. These financial indices were obtained to measure independently the level of financial slack resources available in banks. Key financial indices used to measure slack in the banking industry were: retained earnings, interest paid, and asset capitalization. In the financial services industry, total assets, usually taken as a measure of firm size, was used.

As advocated by Bourgeois (1981) and Bourgeois and Singh (1983)[7], financial slack was measured by the derived financial indicators: (1) available slack and (2) potential slack. Available slack refers to resources that are not yet assimilated into the technical design of the system (Bourgeois and Singh 1983, p. 43). Operationally, available slack was derived by taking the difference between the average three-year level of retained earnings and the three-year average level of retained earnings of peer banks.

Potential slack refers to the capacity of the organization to generate extra resources from the environment (Bourgeois and Singh 1983, p. 43). Operationally, potential slack was derived by taking the difference between the average of the past three-year yield of a bank compared to the past three-year yield of banks in the same peer group, where yield refers to interest revenue earned on interest-earning investments.

One additional measure of slack - perceived slack - supplemented the archival measures.

---

[7] Bourgeois and Singh (1983) had identified a third dimension of financial slack - recoverable slack. Recoverable slack refers to resources that have been absorbed into the system design as excess costs (e.g., excess overhead costs), but may be recovered during adverse times. Recovered slack was not considered in this study because practically, it is difficult to differentiate excess overhead costs from necessary overhead costs. As argued by Blaxill and Hout (1991), once absorbed into the system, overhead costs are extremely difficult to recover. Furthermore, recoverable slack, operationalized by Bourgeois and Singh (1983) as the ratio of the amount of overhead expenses to sales, seems to indicate the use of slack rather than a measure of recoverable slack.

4 Analysis and Results

Linear regression was used to analyze the effects of these various economic variables on the decision to outsource IT. The dependent variable was a seven-point scale (anchored with "Exclusively internal…Exclusively external") of eight items. Whereas there is a case to be made that this scale can be considered to be interval data, this argument is not necessary. The dependent variable is at least ordinal in data type and, according to Conover and Inman (1981), regression running ordinal data as the DV is robust to the violation of interval data type.

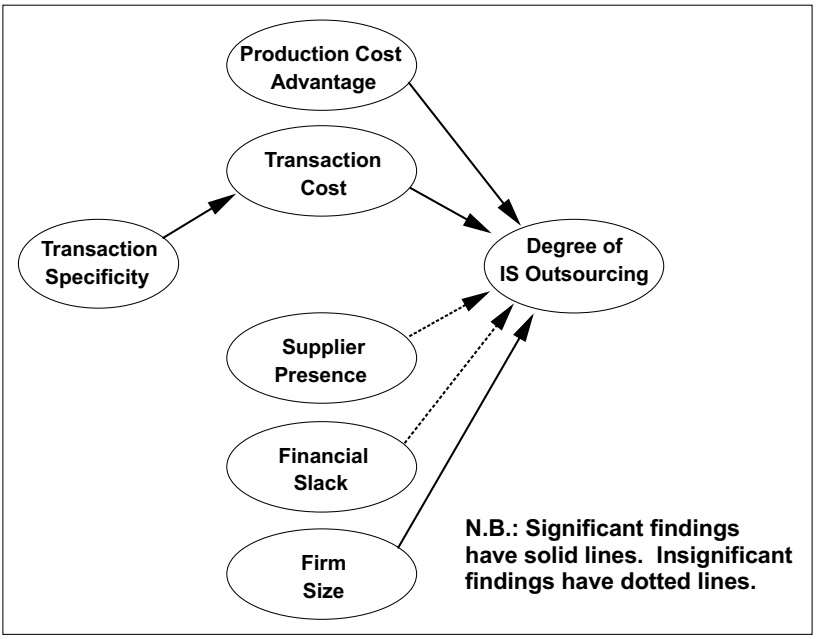


Figure 2: Quantitative Findings of Study

In order to deal with the problem of multicollinearity between the several measures of individual constructs (see Table 2), a series of regressions were run, each time substituting in alternative measures of a construct into the variables of a baseline regression. Using this approach, multicollinearity between independent variables was minimized, with all tolerance levels being acceptable by the standard rule of thumb threshold of 1.0. Table 3 presents a snapshot of the overall results of hypothesis testing and Figure 2 shows a graphical representation of the study findings.

Overall, the baseline regression demonstrated a significant F ($F = 30.15$; p-value = .000) and the regression explained 35% of the variance in the dataset. Subsequent regressions, all similarly significant, varied little from this pattern of explained

variance. As shown in Table 4, the regression β linking advantage in external production costs to information systems outsourcing in the baseline regression run was significant and in the posited direction. This finding supports Hypothesis 1. Banks tended to outsource IT when they perceived external services-providers could offer comparative advantages in IS production costs.

Table 3: Overall Results of Hypothesis Testing

#	**Hypothesis**	**Supported?**
1	*The higher the comparative production cost of IT offered by systems integrators, the more likely are firms to outsource IT.*	Yes
2_a	*The lower the perceived transaction costs involved in hiring outsourcers, the more likely are firms to outsource IT.*	Yes
2_b	*Transaction-specific investment is positively related to transaction costs.*	Yes (but low R^2)
2_c	*The higher the supplier presence (i.e., the likelihood that perceived transaction costs with IT service-providers will be low), the more likely are firms to outsource IT.*	No
3	*The lower the financial slack, the more likely are firms to outsource IT.*	No
4	*The smaller the firm, the more likely it is to outsource IT.*	Yes

For transaction economies, the regression β linking perceived transaction costs with IS outsourcing was statistically significant and negative. This result supports hypothesis 2_a. Banks were less likely to outsource IS activities when they perceived transaction costs associated with outsourcing the function to be high. In a separate regression run, hypothesis 2_b was also supported (β = .1378; p-value = .0388) which suggests that asset specificity is related to transaction costs, as argued in transaction cost economics. Although significant, this relationship explained only 2% of the variance in the dataset.

The other tested dimension of transaction cost theory, supplier presence, was not supported in the data analysis, as the findings presented in Table 5 show. The presence of alternative service vendors apparently did not significantly increase the extent to which the sampled banks outsourced.

Table 4: Results of Baseline Regression Run

Variable	Beta	T	p-value
Production costs	.5087	8.855	.0000
Perceived Transaction Costs	-.1229	-2.112	.0359
Financial Slack (Available)	-.0767	-1.403	.1621
Firm Size	-.1118	-1.986	.0482

Results likewise did not support Hypothesis 3. The regression coefficient linking available financial slack with IS outsourcing was not statistically significant although it was in the predicted (negative) direction. Across all sizes of banks, banks did not outsource IS services to a larger extent when available slack is low than when available slack is low. Likewise, as shown in Table 5, potential slack did not significantly impact the sourcing decision. This variable, moreover, had a β sign that was positive, which runs counter to the hypothesis. Perceived slack was in the correct direction, but, with a p-value of .15, did not reach significance (see Table 5).

Table 5: Results of Regressions with Alternative Measures

Variable	Beta	T	p-value
Alternative Suppliers	.033919	.590	.5556
Financial Slack (Potential)	.015089	.276	.7830
Financial Slack (Perceived)	-.078946	-1.421	.1568
Log of Firm Size	-.22152	-3.682	.0003

Finally, firm size did show a significant, negative relationship with outsourcing tendencies, as hypothesized. The p-value for firm size was .048 (see Table 4). To ensure that these results were not an artifact of heteroscedascity in the dataset (i.e., a disproportionate effect from the skewed distribution), a separate regression was run with the log transform of firm size. This β was even larger and its p-value of .003 (see Table 5) indicates a strong relationship with the choice to outsource. Thus, the evidence in this sample suggests that smaller firms are more likely than are large banks to hire a systems integrator or even another bank to provide IT services.

5 Discussion

Overall, the results offer evidence that economic factors play an important role in the decision-making processes of bank managers. Production and transaction economies both affected IS outsourcing choices and firm size also had a clear bearing on such decisions. Financial slack proved not to be a factor, no matter how it was measured.

While measurement validity is always an issue in research projects, steps taken in the present study try to ensure that these results are not merely artifacts. Multiple measures of different constructs were used and these were tested separately in the regressions to avoid the problem of multicollinearity.

5.1 Production and Transaction Economics Findings

Based on the data analysis in section 4, perceived comparative advantages in production costs of vendors led to greater degree of IS outsourcing. This result is consistent with Walker and Weber (1984; 1987) where findings in the U.S. automobile industry strong supported the effect of production advantage of the supplier on sourcing decisions. Production costs were particularly salient, reflecting perhaps, that the major corporate rationale for outsourcing is operational cost savings. With an average 15% to 20% savings in operational cost from outsourcing, banks have been able to substantially reduce technology outlays on IT expenditure (*American Banker*, May 18, 1992, p. 2A; *American Banker*, February 18, 1993, p. 3). For example, First Fidelity Bancorp, which has $ 29 billion in assets, reduced operating expenses by as much as $ 150 million in 1991, with the bulk of the saving derived from lower labor, real estate, and equipment costs related to IT. Although Lacity and Hirschheim (1993) argue that reports in popular press tends to inflate potential savings, this study, nevertheless, showed that perceived comparative cost advantages offered by vendors was the major factor in banks outsourcing IS services. In that banking is an industry with a long history of outsourcing, the strength of this finding is worth noting.

Bank managers, though, were apparently not overconfident in the returns they would receive from IS outsourcing. Their decision was tempered by the degree of transaction costs associated with outsourcing. They were aware, for example, that firms must pay a price to negotiate a good contract and to monitor the ongoing actions of their systems integrators. Consistent with prior research on transaction cost analysis (Nam et al. 1996; Beier 1989; Schary and Coakley 1991), when asset specificity is high, organizations opted for internal procurement. Software applications at the innovation frontier utilize new technologies in imaging systems, multimedia, electronic funds transfer, and decision support systems to provide banks effective marketing devices and sophisticated market databases (Brown 1989; Arend 1992; O'Henry 1991). Such systems are developed to

champion idiosyncratic competitive strategies of the bank, and are, hence, highly firm-specific.

Results showed that presence of alternative suppliers did not promote outsourcing across all banks. This may reflect the different degrees of maturity of the external services markets faced by banks of varying sizes. However, contrary to our predictions, they are consistent with the findings of Nam et al. (1996). To the extent that alternative service-providers are present to ensure lively competition, theory argues that outsourcing poses less risk to user organizations as adequate competition will lower the likelihood for opportunistic bargaining on the part of the service provider.

5.2 Financial Slack Findings

Based on results in section 4, the sourcing decision is not readily explained by a firm's sensitivity to fluctuations in financial slack. In spite of the fact that three different forms of measure were utilized, none were significant at the .05 or even .10 level. With a sample size of 223, moreover, statistical power was high (Cohen 1977), which means that it is unlikely that these results are simply a statistical artifact.

As discussed in Lacity and Hirschheim (1993) and in the report written by the General Accounting Office (GAO), IT vendors often offer financial packages whose net present value provide organizations with immediate cash infusions and postpone payments until the end of the contract. Based on such accounts, it has been thought that this type of sourcing arrangement enables banks to maintain capital, defer losses on disposing assets, and show an increase in financial value on the balance sheet. However, these arrangements also mean that bank books are artificially inflated and hence do not reflect the true financial position of the institutions. The evidence in this study indicates that banks, at least, are not regarding outsourcing purely as a monetary solution for alleviating anxiety generated from declining retained earnings. If this changes, however, outsourcing arrangements could come to be based not on sound IS management decisions, but on the attractiveness of short term monetary infusions afforded by such arrangements.

5.3 Firm Size Findings

The strong relationship between bank size and outsourcing was not surprising. Smaller organizations have more difficulty generating the economies of scale in their IT operations that would allow them to justify internal operations. No doubt there are other elements to firm size that would also explain why this relationship appears so consistently as a factor in the IS literature (Brynjolfsson 1994; Grover,

Cheon, and Teng 1994). Firm size, for example, clearly has roots in social characteristics related to IT sourcing (Ang and Cummings 1996).

6 Study Limitations

Despite the accordance of the findings here with other empirical evidence that connects IT outsourcing decisions to transaction cost analysis, the *completeness* of transaction cost explanations has been questioned (Robins 1987; Eisenhardt and Brown 1992). In fact, the fundamental critique of transaction cost analysis is that it focuses solely on efficient organizational boundaries and ignores other factors. Consequently, transaction cost analysis isolates or atomizes organizational economic actions when such actions should be construed more appropriately as socially embedded in ongoing networks of relationships with *internal* and *external* institutional constituents (Ang and Cummings, 1996 ; DiMaggio and Powell 1983; Hesterly, Liebeskind, and Zenger 1990; Granovetter 1985, 1992a, 1992b; Zucker 1987; Robins 1987). With an undersocialized conception of economic actions, transaction cost analysis then overemphasizes short-run efficiency concerns and ignores other non-efficiency organizational goals such as legitimation, approval, and power. Besides approaching the study of IS outsourcing through other substantive dimensions, researchers should also explore the use of alternative methods.

However appropriate to the research questions being explored in this study, the banking sample clearly limits the generalizability of results. As outsourcing becomes pervasive across industries and develops longer decision-making histories in these firms, future researchers will want to gather samples that extend the external validity to all industries.

7 Conclusion

Supply and demand forces place in perspective the interesting conflict of a reluctant organization striving to maintain its independence from others while knowing that it must assent to interorganizational ties to procure the resources it needs (Lacity and Hirscheim 1995). Outsourcing poses challenges for both user organizations and service providers: challenges in estimating the “true” costs and savings of outsourcing; managing power dependencies in the exchange; and in balancing the opportunities offered by open boundaries and free-flowing information against the need to protect the organization’s unique capabilities.

References

Alpar, P. and Saharia, A.N. "Outsourcing Information Systems Functions: An Organizational Economics Perspective," *Journal of Organizational Computing* (5:3), 1995, pp. 197-217.

American Bankers Association. "National Operations/Automation Survey," ABA, 1981.

American Bankers Association. "American Bankers Association Banking Literature Index," ABA, 1982-1993.

American Bankers Association. "National Operations/Automation Survey," ABA, 1986.

American Bankers Association. "National Operations/Automation Survey," ABA, 1990.

Anderson, E. "The Sales Person As Outside Agent Or Employee: A Transaction Cost Analysis," *Marketing Science* (4:3), 1985, pp. 234-254.

Anderson, E. and Schmittlein, D. "Integration of the Sales Force: An Empirical Examination," *Rand Journal of Economics* (15:3), 1984, pp. 385-395.

Ang, S. "Toward Conceptual Clarity of Outsourcing," In *Business Process Reengineering: Information Systems Opportunities and Challenges*, B. C. G. e. al. (Ed.), Elsevier Science B.V. (North-Holland), 1994, pp. 113-126.

Ang, S. and Beath, C.M. "Hierarchical Elements in Software Contracts," *Journal of Organizational Computing* (3:3), 1993, pp. 329-361.

Ang, S. and Cummings, L.L. "Strategic Response to Institutional Influences on Information Systems Outsourcing," *Organization Science* (forthcoming), 1996.

Apte, U., Sankar, C.S., Thakur, M. and Turner, J.E. "Reusability-Based Strategy for Development of Information Systems: Implementation Experience of a Bank," *MIS Quarterly* (14:4, December), 1990, pp. 421-434.

Arend, M. "New Automated 'Experts' Ready for Lenders," *Banking Journal* :January), 1992, pp. 61-62.

Awh, R.T. and Primeaux, W.J. "Managerial Discretion and Expense Preference Behavior," *Review of Economics and Statistics* (47:2, May), 1985, pp. 224-231.

Babbie, E.L. *Survey Research Methods*. Wadsworth, Belmont, CA, 1973.

Baumol, W.J. *Business Behavior, Value and Growth*, Macmillan, New York, NY, 1959.

Beier, F.J. "Transportation Contracts and the Experience Effect: A Framework for Future Research," *Journal of Business Logistics* (10:2), 1989, pp. 73-89.

Belsley, David A. Edwin Kuh, and Roy E. Welsch. 1980. *Regression Diagnostics: Identifying Influential Data and Forces of Collinearity*. Wiley. New York. Tolerance of 1.0 is target. Closer to this, the better. Variance Inflation Factor (VIF) = Should not be 10 or more or this indicates that there is a multicollinearity problem. Ideally, should be 1 [no correlation]. VIF is 1/Tolerance.

Bettis, R.A., Bradley, S.P. and Hamel, G. "Outsourcing and Industrial Decline," *Academy of Management Executive* (6:1), 1992, pp. 7-22.

Blaxill, M.F. and Hout, T.M. "The Fallacy of the Overhead Quick Fix," *Harvard Business Review* (69:4, July-August), 1991, pp. 93-101.

Bourgeois, L.J., III and Singh, J.V. "Organizational Slack and Political Behavior Among Top Management Teams," *Proceedings of the Academy of Management*, 1983, pp. 43-47.

Bourgeois, L.J.I. "On the Measurement of Organizational Slack," *Academy of Management Review* (6), 1981, pp. 29-39.

Brown, J. "Banking: Sterling Service," *Network World*, June 5, 1989, pp. 29-35, 50.

Brynjolfsson, E. " Information Assets, Technology, and Organization," *Management Science* (40:12, December), 1994, pp. 1645-1662.

Burt, R.S. *Toward a Structural Theory of Action: Network Models of Social Structure, Perception, and Action*, Academic Press, New York, 1982.

Cash, J.I., McFarlan, F.W., McKenney, J.L. and Vitale, M.R. *Corporate Information Systems Management: Text and Cases*, Irwin, Burr Ridge, Illinois, 1988.

Clark, K., Chew, W.B. and Fujimoto, T. "Product Development in the World Auto Industry," *Brookings Papers on Economic Activity* (3), 1987, pp. 729-771.

Coase, R. "The Nature of the Firm," *Econometrics* (4), 1937, pp. 386-405.

Cohen, J. *Statistical Power Analysis for the Behavioral Sciences*, Academic Press, New York, 1977.

Conover, W.J. and Inman, R.L. "Rank Transformations as a Bridge between Parametric and Nonparametric Statistics," *The American Statistician* (35:3), 1981, pp. 123-129.

Cook, T. and Campbell, D.T. *Quasi Experimentation: Design and Analytical Issues for Field Settings*, Rand McNally, Chicago, 1979.

Cyert, R.M. and March, J.G. *A Behavioral Theory of the Firm*, Prentice-Hall, Englewood Cliffs, NJ, 1963.

DiMaggio, P. "Interest and Agency in Institutional Theory," In *Institutional Patterns and Organizations*, L. G. Zucker (Ed.), Ballinger, Cambridge, MA, 1988, pp. 3-22.

Edwards, F.R. "Managerial Objectives in Regulated Industries: Expense Preference Behavior in Banking," *Journal of Political Economy* (85: February), 1977, pp. 147-162.

Eisenhardt, K.M. and Brown, S.L. "Organizational Economics Within the Conversation of Strategic Management: A Commentary," In *Advances in Strategic Management*, P. Shrivastava, A. Huff and J. Dutton (Ed.), JAI Press, Greenwich, CT, 1992, pp. 157-162.

Erramilli, M.K. and Rao, C.P. "Service Firms' International Entry-Mode Choice: A Modified Transaction-Cost Analysis Approach," *Journal of Marketing* (57: July), 1993, pp. 19-38.

Ferris, J. and Graddy, E. "Production Choices for Local Government Services," *Journal of Urban Affairs* (10:3), 1988, pp. 273-289.

Ford, D. and Farmer, D. "Make or Buy -- A Key Strategic Issue," *Long Range Planning* (19:5), 1986, pp. 54-62.

GAO. "Depository Institutions: Contracting Practices with Data Processing Services, Report to Congressional Committees," GOA/GGD 92-19, United States General Accounting Office, 1992.

Gouldner, A. "Organizational Analysis," In *Sociology Today*, R. Merton, I. Broom and I. Cottrell (Ed.), Basic Books, New York, NY, 1959.

Granovetter, M. "Economic Action and Social Structure: The Problem of Embeddedness," *American Journal of Sociology* (91:3), 1985, pp. 481-510.

Granovetter, M. "Economic Institutions as Social Constructions: A Framework for Analysis," *Acta Sociologica* (35:1), 1992a, pp. 3-11.

Granovetter, M. "Problems of Explanation in Economic Sociology," In *Networks and Organizations*, N. Nohria and R. G. Eccles (Ed.), Harvard Business School Press, Cambridge, MA, 1992b.

Grover, V., Cheon, M.J. and Teng, J.T.C. "A Descriptive Study on the Outsourcing of Information Systems Functions," *Information & Management* (27:1, July), 1994, pp. 33-44.

Harrigan, K.R. "Vertical Integration and Corporate Strategy," *Academy of Management Journal* (28:2), 1985, pp. 397-425.

Harrison, J.S. and St. John, C.H. "Managing and Partnering with External Stakeholders," *Academy of Management Executive* (10:2, May), 1996, pp. 46-60.

Heide, J.B. and John, G. "Alliances in Industrial Purchasing: The Determinants of Joint Action in Buyer-Supplier Relationships," *Journal of Marketing Research* (27: February), 1990, pp. 24-36.

Hesterly, W.S., Liebeskind, J. and Zenger, T.R. "Organizational Economics: An Impending Revolution in Organizational Theory?" *Academy of Management Review* (15:3, July), 1990, pp. 402-420.

Hirshleifer, J. *Price Theory and Applications*, Prentice Hall, Englewood Cliffs, NJ, 1976.

Huber, R.L. "How Continental Bank Outsourced Its 'Crown Jewels,'" *Harvard Business Review* (January-February), 1993, pp. 121-129.

Jensen, M.C. "Eclipse of the Public Corporation," *Harvard Business Review* (89:5, September-October), 1989, pp. 61-75.

Joskow, P.L. "Asset Specificity and the Structure of Vertical Relationships: Empirical Evidence," *Journal of Law, Economics, and Organization* (6:1), 1988, pp. 95-117.

Klein, B., Crawford, R. and Alchian, A. "Vertical Integration, Appropriable Rents and the Competitive Contracting Process," *Journal of Law and Economics* (21: October), 1978, pp. 297-326.

Lacity, M. "IT Outsouring: Maximize Flexibility and Control," *Harvard Business Review* (May-June), 1995, pp. 84-93.

Lacity, M. and Hirschheim, R. *Information Systems Outsourcing: Myths, Metaphors, and Reality*, John Wiley and Sons, New York, NY, 1993.

Loh, L. and Venkatraman, N. "Determinants of Information Technology Outsourcing: A Cross-Sectional Analysis," *Journal of Management Information Systems* (9:1), 1992b, pp. 7-24.

Mahoney, J.T. "Organizational Economics Within the Conversation of Strategic Management," In *Advances in Strategic Management*, 8, 1992, pp. 103-156.

McFarlan, W. and McKenney, J.L. *Corporate Information Systems Management: The Issues Facing Senior Executives*, Richard D. Irwin, Inc., Homewood, IL:, 1983.

McHenry, J.A. "To Outsource, or Not to Outsource - That Is the Question," *Banking Software Review* (17:1, Spring), 1992, pp. 37-40.

Meindl, J.R., Ehrlich, S.B. and Dukerich, J.M. "The Romance of Leadership," *Administrative Science Quarterly* (30), 1985, pp. 78-102.

Monteverde, K. and Teece, D. "Supplier Switching Costs and Vertical Integration," *Bell Journal of Economics* (13), 1982, pp. 206-213.

Mosakowski, E. "Organizational Boundaries and Economic Performance: An Empirical Study of Entrepreneurial Computer Firms," *Strategic Management Journal* (12), 1991, pp. 115-133.

Nam, K., Rajagopalan, S., Rao, H.R. and Chaudhury, A. "A Two-Level Investigation of Information Systems Outsourcing," *Communications of the ACM* (39:7, July), 1996, pp. 36-44.

Nelson, P., Richmond, W. and Seidman, A. "Two Dimensions of Software Acquisition," *Communications of the ACM* (39:7, July), 1996, pp. 29-35.

Nooteboom, B. "Firm Size Effects on Transaction Costs," *Small Business Economics* (5:4 , December), 1993, pp. 283-295.

Nunnally, J.C. *Psychometric Theory*, McGraw-Hill, New York, 1967.

OECD. "Banks Under Stress," Organizational for Economic Cooperation and Development, 1992.

Office of Technology Assessment "Effects of Information Technology on Financial Services Systems," OTA-CIT-202, U.S. Government Printing Office, September 1984.

O'Henry, S. "Bank's High Hopes for High-Tech Check Processing," *Bankers Monthly*, August 1991, pp. 16-19.

Pfeffer, J. *Power in Organizations*, Ballinger Publishing Company, Cambridge, MA, 1981.

Pfeffer, J. and Salancik, G.R. *The External Control of Organizations: A Resource Dependence Perspective*, Harper and Row, New York, NY, 1978.

Pisano, G.P. "The R&D Boundaries of the Firm: An Empirical Analysis," *Administrative Science Quarterly* (35), 1990, pp. 153-176.

Prahalad, C.J. and Hamel, G. "The Core Competence of the Corporation," *Harvard Business Review* (68:3), 1990, pp. 79-93.

Quinn, J.B. *Intelligent Enterprise*, Free Press Inc., New York, NY, 1992.

Robins, J.A. "Organizational Economics: Notes on the Use of Transaction Cost Theory in the Study of Organizations," *Administrative Science Quarterly* (32:1), 1987, pp. 68-86.

Rubin, L.S. "Universities in Stress: Decision Making under Conditions of Reduced Resources," *Social Science Quarterly* (58), 1977, pp. 242-254.

Schary, P.B. and Coakley, J. "Logistics Organization and the Information System," *International Journal of Logistics Management* (2:2), 1991, pp. 22-29.

Seger, K. and McFarlan, W. " General Dynamics and Comnputer Sciences Corporation: Outsourcing the IS Function," (A+B Abridged)--9-193-178; (C)--9-193-146, Harvard Business School Press, 1993.

Sitkin, S.B., Sutcliffe, K.M. and Barrios-Choplin, J.R. "A Dual-Capacity Model of Communication Media Choice in Organizations," *Human Communication Research* (18:4), 1992, pp. 563-598.

Smith, Michael Alan, Sabyasachi Mitra and Sridhar Narasimhan, "Information Systems Outsourcing: A Study of Pre-Event Firm Characteristics," *Journal of Management Information Systems*, 15, 2 (Fall, 1998), 61-93.

Steiner, T.D. and Teixeira, D.B. *Technology in Banking: Creating Value and Destroying Profits*, Business One Irwin, Homewood, IL, 1990.

Straub, D.W. "Validating Instruments in MIS Research," *MIS Quarterly* (13:2), 1989, pp. 147-169.

Sutton, R.I. and D'Aunno, T. "Decreasing Organizational Size: Untangling the Effects of Money and People," *Academy of Management Review* (14:2), 1989, pp. 194-212.

Teng, James T.C., Myun Joong Cheon and Varun Grover, "Decisions to Outsource Information Systems Functions: Testing a Strategy-Theoretic Discrepancy Model," *Decision Sciences*, 26, 1 (1995), 75-103.

Tomasko, R.M. *Downsizing: Reshaping the Corporation of the Future*, American Management Association, New York, NY, 1987.

Van de Ven, A.H. and Ferry, D.L. *Measuring and Assessing Organizations*, John Wiley, New York, NY, 1980.

Venkatesan, R. "Strategic Sourcing: To Make or Not to Make," *Harvard Business Review* (November-December), 1992, pp. 98-107.

Walker, G. and Weber, D. "A Transaction Cost Approach to Make or Buy Decision," *Administrative Science Quarterly* (29), 1984, pp. 373-379.

Walker, G. and Weber, D. "Supplier Competition, Uncertainty, and Make-Or-Buy Decisions," *Academy of Management Journal* (30:3), 1987, pp. 589-596.

Warren, D.L. "Managing in Crisis: Nine Principles for Successful Transition," In *Managing Organizational Transitions*, J. R. Kimberly and R. E. Quinn (Ed.), Irwin, Homewood, IL, 1984, pp. 85-106.

Whetton, D. "Organizational Decline: A Neglected Topic in Organizational Science," *Academy of Management Review* (5), 1980, pp. 577-588.

Williamson, O.E. *The Economics of Discretionary Behavior: Managerial Objectives in a Theory of the Firm*, Prentice-Hall, Englewood Cliffs, NJ, 1963.

Williamson, O.E. *Markets and Hierarchies: Analysis and Antitrust Implications*, Free Press, New York, NY, 1975.

Williamson, O.E. "The Modern Corporation: Origin, Evolution, Attributes," *Journal of Economic Literature* (19: December), 1981, pp. 1537-1568.

Williamson, O.E. *The Economic Institutions of Capitalism*, Free Press, New York, NY, 1985.

You, J. "Small Firms in Economic Theory," *Cambridge Journal of Economics* (19:3, June), 1995, pp. 441-462.

Zucker, L.G. "Institutional Theories of Organization," *Annual Review of Sociology* (13), 1987, pp. 443-464.

Appendix A

Definition and Operationalization of Constructs in the Survey

Information Systems Outsourcing. For this study, outsourcing is measured by the degree of external reliance on external service-providers for IS function. Informants from each bank indicated the degree to which decisions on major IS management activities were controlled internally, jointly between bank personnel and external service-providers, or externally by service providers. This is consistent with Loh and Venkatraman (1993), Quinn and Hilmer (1994) where outsourcing was conceptualized as the locus of governance in decision rights or control. Following the conceptualization of Cash et al. (1993) on the IS function, the major IS management activities were: IS strategy, IT planning, capacity management; production scheduling; IS human resource management; security management; network management; and PC management.

External Production Cost Advantage refers to the degree to which an external service provider is perceived to have advantage in production cost economies over an internal bureaucratic management with respect to IS services. Production cost was operationalized through three components: hardware costs, software costs, and cost of information systems personnel.

Asset specificity measures the degree to which investments in the management and operations of IS yield value only in a idiosyncratic IT environment. The construct was operationalized by: (1) the level of investment in specialized equipment; (2) the level of specialized human skills specific to the needs of a particular bank.

Supplier Presence refers to the availability of reputable and trustworthy external IT service-providers in the market. It was operationalized by the perceived presence of adequate service providers and the ability to find comparable service-providers to replace the services of an existing service-provider.

Financial Slack refers to financial resources an organization possesses in excess of what is required to maintain the organization. It was operationalized by: (1) an archival measures of available slack; (2) an archival measure of potential slack; and (3) a perceived measure of the excess budgetary and funding resources available for IT investment.

Firm Size refers to the capability of a firm to create and maintain scale economies. It was operationalized by total firm assets, which is the standard way of measuring bank size and the log transform of this figure.

Table Appendix A: Summary of Measures

Construct	Questionnaire items are on a 7 point scale with 1 -- exclusively internal; 4 -- jointly; and 7 -- exclusively external
Information Systems Outsourcing	For each of the IS activities listed below, please circle the number corresponding to the DEGREE to which decisions concerning IS management and operational control are made internally by your bank personnel, jointly (cooperatively) by your bank personnel and those of an external service provider, or externally by those of an external-service provider. External service providers include information systems consultants, bank holding companies, correspondent banks, service bureaus, facilities managers, and joint venture cooperatives. 1. Information Systems Strategy: Building an information technology (IT) architecture, assigning priorities to new projects, identifying and initiating new systems design and operations, etc. 2. Information Technology Planning: Ongoing audit for potential obsolescence and opportunities; determining the cost effectiveness and adequacy for growth of existing installed technologies.

Construct	Questionnaire items are on a 7 point scale with 1 -- exclusively internal; 4 -- jointly; and 7 -- exclusively external
	3. Capacity Management: Measuring and managing capacity utilization of hardware and software resources. 4. Production Scheduling: Production planning and control to ensure high-quality, zero-defect operation, job scheduling, monitoring of day-to-day operating costs. 5. Human Resources Management: Managing information technology (IT) human resources including recruiting, training, establishing appropriate performance evaluation procedures; etc. 6. Security Management: Systems security and disaster recovery. 7. Network Management: Management of data and voice telecommunications networks 8. Personal Computer (PC) Management: Management of end-user computing including PC acquisition, PC help desk support.

Construct	Questionnaire items are on a 7 point Likert scale with 1 -- strongly disagree; 2 -- moderately disagree; 3 -- slightly disagree; 4 -- neutral; 5 -- slightly agree; 6 -- moderately agree; and 7 -- strongly agree
External Production Cost Advantage	"We have the scale and volume to justify internal data processing management and operations;" "An external data processing service-provider would be able to reduce our hardware costs;" "An external data processing service-provider would be able to reduce our software costs;" "An external data processing service-provider would be able to reduce our information *systems personnel costs*;" and "It is cheaper to manage our own data processing facilities and services than to rely on external data processing providers."[8]

[8] Questionnaire items for external production cost advantage were worded slightly differently depending on whether the bank adopted in-house IS services or outsourced for IS services. For banks that outsourced, the phrase "would be" was changed to "is"

Construct	Questionnaire items are on a 7 point Likert scale with 1 -- strongly disagree; 2 -- moderately disagree; 3 -- slightly disagree; 4 -- neutral; 5 -- slightly agree; 6 -- moderately agree; and 7 -- strongly agree (unless stated otherwise)
Trans-action cost	"There would be significant problems associated with negotiating a contract or agreement (e.g., agreeing on conditions, prices, etc.) with an external service-provider for our data processing services." "External data processing service-providers would have to be closely and constantly monitored to ensure that they adhere to our contractual terms and conditions." "It would be very difficult to modify our contracts or agreements with external data processing service-providers once a contract is signed."
Asset Specificity	"Compared to our peer banks, our IS facilities and services require technical skills that are relatively unique;" "To process our data, external service-providers would have to make substantial investments in equipment and software tailored to our needs."
Supplier Presence	"There are a sufficient number of reputable external service-providers who potentially could provide IS facilities and services to our banks;" "There are a sufficient number of trustworthy external service-providers who potentially could provide IS facilities and services to our banks;" "If we decide to terminate in-house IS operations, there are other external service-providers who could provide us with the same level of IS facilities and services."
Financial Slack	"Compared with our peer banks, our bank has more money that could be invested in data processing services and operations." "We are facing tighter data processing budget limitations than we did three years ago."

in each of the items in order to reflect the situation facing the respondent or the respondents' context.

Selective Outsourcing of Information Systems in Small and Medium Sized Enterprises[1]

Jens Dibbern, Armin Heinzl

Department of Information Systems I, University of Mannheim, Schloss, D-68131 Mannheim, Germany; Email: {jens.dibbern|heinzl}@uni-bayreuth.de

1 Introduction

Almost twenty years ago, Dearden proposed that the in-house information systems (IS) function would cease to exist (Dearden 1987). He argued that external providers are in a position to specialize in certain services in the IS area. They would, thereby, achieve advantages in quality and cost over services provided in-house. Accordingly, the transition of internal IS functions to legally independent service providers would just be a matter of time until the market for external providers has been established. Only those firms in business sectors with a large capacity for IS would be excluded from this outsourcing trend. For these firms, Dearden predicted an increasing independence and market orientation of the IS department in the form of profit centers, which are linked to the firm by capital (e.g., subsidiary or associated firms). With regard to this governance mode, one speaks of spin-offs (Heinzl 1993a; Heinzl and Stoffel 1993), where the ownership remains at the parent firm.

When taking stock of the IS outsourcing landscape today, it becomes clear, that Dearden's predictions have only partially become true.

First of all, there is no clear evidence that large organizations or IT-intensive business sectors show a higher tendency towards captive as opposed to non-captive outsourcing arrangements. It is true that for example in Germany – as opposed to countries like the USA or Great Britain – outsourcing was dominated by spin-off arrangements in the early 90s (Heinzl 1993a), however, this has changed over time. Many of the former spin-off arrangements were taken over by large service providers (e.g. debis, a former spin off from Daimler, was taken over by T-Systems, or ThyssenKrupp Information Services – later Triaton – was taken

[1] An earlier version of this paper appeared as: Dibbern, J. and Heinzl, A. "Outsourcing der Informationsverarbeitung im Mittelstand: Test eines multitheoretischen Kausalmodells," WIRTSCHAFTSINFORMATIK (43:4), 2001, pp. 339-350. The current *updated version* appears with permission of WIRTSCHAFTSINFORMATIK.

over by Hewlett Packard). Today, IS outsourcing to external service providers has become a wildly accepted alternative to insourcing and captive outsourcing in large German organizations (IDC 2003; TPI 2005). Moreover, outsourcing mega deals, which were mostly absent in the 90s, are beginning to emerge in Germany. For example, Deutsche Bank signed a 2.5 Bill. Euro, 10 year contract for data center operations with IBM, which included the transfer of 900 employees from Deutsche Bank to IBM.

In spite of the increasing number of IS outsourcing deals worldwide (IDC 2003; TPI 2005), however, the in-house IS function has not disappeared. Indeed, most organizations that opt for outsourcing do so selectively. That is, rather than outsourcing their entire IS function, they only outsource particular IS functions, such as data center operations or systems development to external providers, either in part or in their entirety. This phenomenon *of selective outsourcing* has been substantiated by numerous empirical studies in Anglo-American regions (Grover et al. 1994; Lacity and Hirschheim 1993; Lacity et al. 1996; Sobol and Apte 1995). Moreover, Apte et al. (1997) were able to show that the respective shares of outsourcing of various IS functions differed not only in the USA but also in Japan and Finland. In a like vein, a European-wide study by IDC revealed that outsourcing behavior in Germany can, for the most part, be described as a selective approach (IDC 1998).

The phenomenon of selective IS outsourcing raises the question for the determinants of IS outsourcing. This question has been addressed by a significant number of studies on IS outsourcing (Dibbern et al. 2004). However, only few studies have asked if there are any differences between the determinants of IS outsourcing of certain IS functions (Teng et al. 1995). This has motivated us to reexamine the outsourcing decision with a special focus on selective outsourcing. Moreover, this research seeks to contribute to close a second research gap. It is striking out, that almost the entire stream of research has focused on studying the soucring behavior of large firms, such as the Fortune 500. There is hardly any empirical evidence about the outsourcing decision of small and medium sized enterprises (SMEs). The recognition of SMEs appears to be particular wanted in counties such as Germany, where SMEs play a significant role in the economy (Günterberg and Kayser 2004). Accordingly, the following two research questions will guide our research:

1. To what extent are individual IS functions outsourced by SMEs in Germany?
2. Which determinants are responsible for explaining the variance in the degree of outsourcing of particular IS functions in SMEs?

In the following, a theoretical framework will be developed, which hypothesizes about the determinants of selective IS outsourcing behavior of firms. The framework will then be transformed into a causal model and empirically tested using a SME sample.

2 Theoretical Framework

Based on an analysis of the *theory of the* firm as a basis, transaction cost theory and the resource-based theory may be adapted as complementary explanatory approaches to selective IS outsourcing (Dibbern et al. 2001). Both theories are similar in that they attribute rationality to management, which – though limited rational or experience-based – focuses on gaining profits or pursuing economic benefits. Not all IS outsourcing decisions, however, may result from a strictly rational decision process. In 1969, Heinrich had already taken the view that the evaluation of non-quantifiable goals, such as an increase in power, must be considered when evaluating the options of internal versus external provision of IS (Heinrich 1969). The importance of power in IS outsourcing decisions was substantiated by Lacity and Hirschheim (1993) in their multiple case study on outsourcing. They were the first that applied power theory in the IS outsourcing context and found partial support for the notion that power and politics have an influence on IS outsourcing decisions. Accordingly, we recognize the power aspect beyond economic and strategic considerations in developing our theoretical framework on selective outsourcing, as depicted in Figure 1. Subsequently, each of the six hypotheses (H*) will be derived from the three selected theoretical lenses.

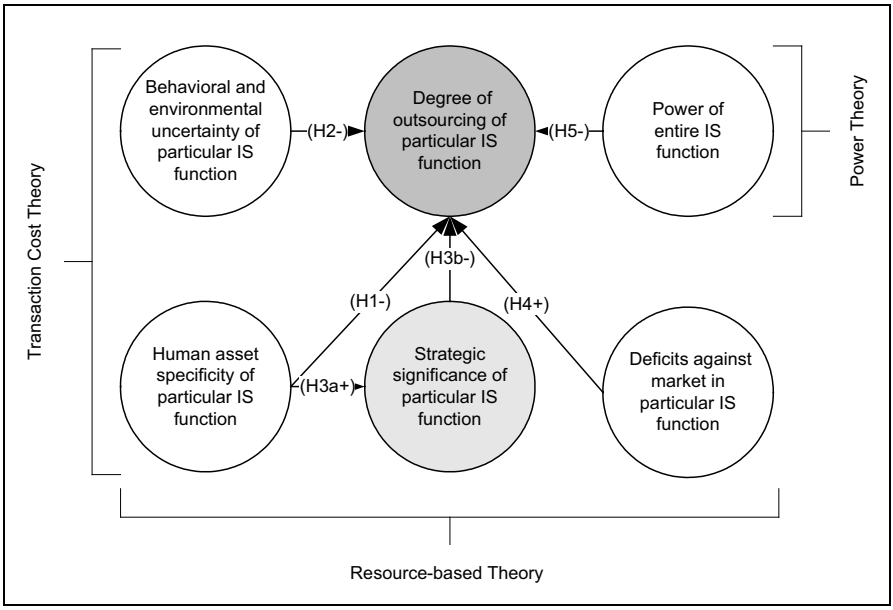


Figure 1: Theoretical Framework of IS Outsourcing

2.1 Transaction Cost Theory

The constructs of *environmental and behavioral uncertainty* as well as *human asset specificity* are derived from transaction cost theory. According to this theory, the question of external or internal provision of services (e.g., market versus hierarchy) is decided on the basis of a cost comparison, which takes into account the sum of transaction and production costs (Williamson 1975; 1981; 1985; 1990). For the purpose of this paper, transaction costs are understood as all costs of planning, adapting, and monitoring task completion within the individual IS functions under alternative governance modes (Williamson, 1981, p. 552f.). These costs are determined by contingency factors such as the degree of *environmental and behavioral uncertainty* as well as *asset specificity*.

Williamson describes *asset specificity* as the extent to which physical or human assets can not generate the same added value outside the boundaries of the firm as inside (Williamson 1990, p. 142). In the IS context, *physical or tangible assets* refer to all types of information technologies, such as hardware products, information and communication technological infrastructures, as well as standard software products, which may be acquired from the market. These assets usually have little potential for variations in specificity. They can unusually be applied in the same or in a similar manner by other organizations. Thus, there is no conclusive evidence that they *per se* could be of high firm specificity.

By contrast, human IS assets may significantly differ in their level of specificity – both between IS functions as well as between organizations. Following Williamson (1981, p. 563), necessary and sufficient conditions of *human asset specificity* need to distinguished. The intellectual abilities as well as special capabilities (e.g. programming capabilities) of IS professionals can be acquired autodidactically or through training. They are necessary for performing IS services, but not sufficient to be specific to a particular organization. Sufficient criteria are those that make the capabilities unique and valuable for a single organization. This is particularly the case if IS professionals have knowledge of unique processes and procedures of an organization, that can only be acquired through a "learning-by-doing" process within the served organization (Williamson 1981, p. 563). In understanding how such unique knowledge can be formed, it is important to recognize the cross-sectional nature of the IS function. Today, IS are an integral part of nearly every business process of an organization. Consequently, IS professionals need to have a certain level of understanding of the business functions that they serve. Thus, the extent to which it is required for an IS professional to build up knowledge about unique user requirements provides a good estimate for the extent of human asset specificity. Moreover, it is often not sufficient to understand particular business functions but rather to understand the information flow between different business functions as well as the logic of inter-organizational tasks (Heinzl 1996, p. 280ff.). From an organizational point of view

this is reflected by the frequency of cross-functional team and project work (Krcmar 1997, p. 243ff.).

It can be argued that the initiation and adaptation costs for IS functions characterized by such as high specificity of human capital are higher for an external provider than within the firm itself. An external provider must first learn to understand the complex relationship networks and interdependence of the client organization. Presumably, an external provider would be unwilling to make these upfront specific investments, since they prevent him from realizing economies of scale. Moreover, he would behave opportunistically in this situation, i.e., he would cunningly use every opportunity to overcompensate for his specific investments at the cost of his client. To safeguard against such behavior would result in significant transaction costs. Therefore, the following hypothesis is deduced:

Hypothesis 1: *The higher the degree of human asset specificity of an IS function, the less likely it is to be outsourced.*

A second essential determinant in the „make-or-buy" decision, based on transaction cost theory, is *uncertainty*. It is impossible for a limited rational decision maker to incorporate all eventualities in the contract with an external provider. When a contract is crafted, a certain deficit of information exists with regard to future changes in the demands made on the object of the contract, e.g., technological development and future requirements by clients (environmental uncertainty). It can be argued that the future demands on IS functions, which are strongly influenced by technological change and innovation, can only be vaguely specified in contracts. The effects are high levels of uncertainty in the formulation of a contract and, as a result thereof, the possibility of high post-contractual adaptation costs (Lacity et al. 1995). On the other hand, the reactions of the contractual partner in critical situations (behavioral uncertainty), which could be brought about by the aforementioned environmental influences, cannot be anticipated. The behavioral uncertainty reflects the potential of opportunistic behavior of an external provider. The following hypothesis may therefore be put forward:

Hypothesis 2: *The higher the degree of environmental and behavioral uncertainty with regard to an IS function, the less likely it is to be outsourced.*

2.2 Resource-based Theory

Transaction cost theory implicitly assumes, however, that the market generally is capable of providing benefits or services in the same manner and quality as the firm itself (Conner 1991; Demsetz 1991; Foss 1996; Langlois 1995). The enterprise is viewed as a unit without a past. This static approach is contrary to the dynamic view of the firm furnished by the resource-based theory (Knudsen 1995). It provides reference points for when resources are to be kept and expanded within the firm for strategic reasons and when they should be brought in from an external

provider. Crucial for this consideration is, on the one hand, the analysis of the basic physical and human resources, given the question of whether they can generate a sustained competitive advantage. This condition is fulfilled in particular when dealing with firm specific resources, which cannot be traded, imitated or substituted (Dierickx et al. 1989, p. 1507ff.).

The physical (i.e. tangible) resources of the individual IS functions, i.e., hardware and commercial software, cannot be deemed firm specific per se. Hardware components and standard software can be taken from the market at any time and are not protected from imitation (Clemons and Row 1991; Mata et al. 1995). The focus, therefore, is to be placed on the human resources and capabilities within the individual functional areas. For an assessment of specificity, the same considerations are used as with "asset specificity." The constructs of specific assets and specific resources may be treated in an identical manner (Dibbern et al. 2001). Accordingly, the following hypothesis is stated:

Hypothesis 3a: *The higher the degree of human asset specificity of an IS function, the higher its strategic significance.*

The outsourcing of a partial function that incorporates resources and capabilities, which are of strategic value to the firm ("strategic assets"), appears to make little sense (Dierickx et al. 1989, p. 1505). An outsourcing contract generally stipulates that human and physical resources of a partial function are to be taken over from the external provider. However, since these resources are commonly placed into a new organizational environment, the prerequisites for expansion and new development of firm specific capabilities, or core competencies, are limited. Furthermore, it can be presumed that the outsourcing provider will pass on firm specific knowledge of its acquired resources to his other clients – among which direct competitors of the contractual partner may be found. Thus, competitive advantages may neither be expanded nor maintained. These considerations lead to the following conclusion:

Hypothesis 3b: *The higher the strategic significance of the resources and capabilities of an IS function, the less likely it will be outsourced.*

Untill now, it has either been assumed that client and vendor generally have access to the same resources and capabilities (transaction cost theory), or that the in-house provision of IS functions is superior in creating strategic benefits from IS. This view, however, neglects the fact that the market is also able to learn from the past and to develop its own capabilities and routines based on available resources (Langlois 1995, p. 92ff.). These resources can, in turn, be used by a client firm as complementary assets (Teece et al. 1994, p. 20f.; Teng et al. 1995). A firm will not make use of market competency as long as it can generate the same capabilities using internal resources. However, if deficits in resources and capabilities are diagnosed on the basis of a company's strategic orientation, the market may become an attractive alternative for the purpose of filling these gaps

(Grant 1991, p. 131ff.). The larger the deficits and the less likely these gaps can be closed using the firm's own capabilities, the higher will be the attractiveness of outsourcing. These arguments lead to the following hypothesis:

Hypothesis 4: *The greater the deficit in the firm's resources and capabilities of an IS function, the more likely it will be outsourced.*

2.3 Power Theory

Power Theory can be understood as an expression of the behavioral theory which conceptualizes the firm as a political coalition (Cyert and March 1963). At the core of the theory is the clarification of the relationships between the *interests*, *conflicts* and *power* of single individuals or political coalitions within the firm (Morgan 1996, p. 148).

The interests of each individual may be reflected by the formation of various interest groups (political coalitions) within the firm. If conflicts of interest arise, the power and the politics of the individual parties serve as the ultimate medium for conflict resolution. *Power* may be defined as the potential of a party to influence the behavior of another party in a certain matter, whereby *politics* is the manner in which power is exercised (Pfeffer 1981, p. 7; Tushman 1977, p. 207). Since the focus of this paper is on explaining variations in decision outcomes rather than in the a priori decision process, only the influences of power will be considered in the following.

It is argued that an IS department with a high level of power will seek to maintain or expand it's base of power whenever possible. Presumably, the power potential is reduced with every loss of assets due to organizational changes such as rationalization, restructuring or outsourcing. For a department with relatively little power within the firm, there is little chance of defending itself against such processes. Indeed, there is often no incentive whatsoever for the affected departments to behave in restrictive manner. This is often the situation when they find a higher power potential in their new position than in the original one. Accordingly, career prospects and opportunities for personal development within the firm are more highly valued. The probability of such a constellation becomes even greater, the more limited the power of the in-house department is. If the in-house department, however, offers a higher power potential, then there is little likelihood that one will be better off in the new position within the hierarchy of the external service provider. In this case, resistance to outsourcing will be strong, and the power potential within the firm will be utilized to impede the process or prevent it altogether. According to the power theory, the following hypothesis regarding the outsourcing decision is put forward (Lacity and Hirschheim 1993):

Hypothesis 5: *The greater the relative power of the IS department within the firm, the less likely it is that IS functions will be outsourced.*

3 Research Methodology

3.1 Data

In order to test the hypotheses on the determinants of IS outsourcing, data was collected using a questionnaire survey. The questionnaire was pre-tested with high level executives to ensure understandability and answerability and then sent out to 281 SMEs. The original sample was made up of firms in the federal states of Bavaria (113), Baden-Württemberg (95) and Hessen/Rhineland-Palatinate-/Saarland (73), all of which fall under the industrial sector relating to glass, ceramics, stones, and soils (based on Hoppenstedt data base). The questionnaire was addressed to the top management (CEO) of the SMEs. A total of 34 questionnaires were returned, which equals a response rate of 12%. To ensure that the evaluated questionnaires provide a representative sample, the firms that responded immediately were compared with those that responded first in a second action; the comparison was made using the firms' sales volume and number of employees. No significant differences could be determined between the groups (t-Test, $p < 0,05$).

3.2 Measures

Each construct was measured with a set of measurement items, i.e. questions (see Appendix). The unit of analysis for the majority of constructs was the respective IS function. Altogether five different IS functions were distinguished. Table 1 describes each of the functions (based on Mertens and Knolmayer 1998; Teng et al. 1995). The respondents had to answer each question for each of the five IS functions (see Poppo and Zenger, 1998). Only the power items were related to the entire IS department as a unit of analysis.

The *outsourcing behavior* as the central dependent variable in the study was measured using a single question reflecting the percentage of the total budget for the respective IS function that is spent for outsourcing.

For the characterization of the sample, four demographic variables were incorporated. The *size* of the entire firm was measured using (1) total sales and (2) the total number of employees. As indicators of the *IS size*, (3) the IS budget and (4) the number of IS employees were chosen. To be able to examine the relative financial importance of each IS function, the percentile share of each individual function in the total IS budget was assessed.

All of the independent variables – except for the uncertainty construct – were measured with questions or indicators that *reflected* the individual constructs. Due to the complexity of the construct of *"behavioral and environmental uncertainty"*, this construct was operationalized using the so-called *formative* mode (Chin

1998b; Chin 1998c; Fornell 1989). This mode is based on the assumption that the individual indicators cause different outcomes of the construct. In contrast to the reflective mode, the individual indicators that together form the measurement model, are independent of each other. As such, the responsible indicators with regard to each of the five IS functions were (1) the number of suitable external providers; (2) the extent of future changes in requirements; and (3) the difficulty in measuring task performance.

Table 1: IS Functions

System & Data Center Operations	**Telecommuni-cations & Networks**	**Application Services (Development, Implementation and Maintenance)**	**User Support / Help Desk / Information center**	**IS-Planning & IS-Management**
Installation, operation and technical maintenance of centralized and decentralized computers (client / server systems) or systems software Systems programming Systems control Security and catastrophe prevention	Construction, operation and maintenance of networks Administration (and integration) of data and applications servers (into networks). Implementation and operation of relevant services for inter- and intra-company information exchange (e.g. EDI)	Development of one's own software and applications System analysis Project management Maintenance of existing applications Data(bank) administration Quality assurance Implementation and adaptation of standard software packages (e.g., SAP R/3)	Advise and support for the users Training, instruction and continued education of users Problem management Function as a bridge between other departments and the IS department Test, procure, install, introduce and maintain hardware and software	Long-term IS-planning Integration of business planning and IS-planning Questions of principle Identification of future IS innovations IS-Controlling Conception of system architecture Standards and methods

Human asset specificity was reflected by the need of IS professionals in each of the IS functions (1) for *knowledge* about the processes and requirements of the business units, (2) for *knowledge* about cross-functional and inter-organizational relationships, and the need for (3) close collaboration with the business units, e.g., in the form of teamwork or joint projects.

Strategic significance takes the role of both an independent variable in respect to IS outsourcing and a dependent variable concerning human asset specificity. It was measured as the contribution of the individual IS function to achieve a competitive advantage through (1) cost leadership, and (2) differentiation.

Resource deficits reflect the extent to which the ability of an external supplier is rated higher than one's own with regard to the (1) closing current performance gaps and (2) coping with future demands in each of the individual IS functions.

Power was not related to the individual IS functions but to the IS department in its entirety. It was measured through inquiry about (1) the level of hierarchy of the IS department within the firm, and (2) the degree of financial autonomy of the IS department.

3.3 Partial Least Squares Analysis

The data analysis was performed using the component-based procedure for structural equation modeling "Partial Least Squares" (PLS) (Chin 1998c; Chin and Newsted 1999). This procedure allows testing both direct as well as indirect relationships between numerous – not directly observable – quantities (so-called latent variables or hypothetical constructs). Moreover, it allows to simultaneously assess the validity of the measurement items and the hypotheses, i.e. structural paths (as depicted in Figure 1).

In recent years, the PLS-Method (Chin 1998c; Chin and Newsted 1999; Wold 1989), along with the usual method of covariance-based structural equation modeling (e.g., LISREL, EQS, AMOS), has increased in popularity. In addition to its greater flexibility in modeling measurement indicators (allowing to model both reflective and formative indicators), the attractiveness of the method can be attributed, among other things, to the lower requirements in sample size and data distributions. Since the construct of *behavioral and environmental uncertainty* has been operationalized in the formative mode and due to the small sample size of n = 34, PLS was selected as an adequate data analysis method. The significance test for all paths was performed by using the "bootstrap resampling" routine (Chin and Newsted 1999). To assess the validity of the reflective measures, the factor loadings and the construct reliabilities were used. In the case of formative indicators, the weights of the individual indicators were assessed following the recommendations of Chin (1998c).

In the course of data analysis, the model on the one hand, was tested using the aggregated data set including all five IS functions, which resulted in a sample size of n = 5 x 34 = 170 (see Poppo and Zenger, 1998). On the other hand, the model for each of the individual IS functions (n = 34) was tested. This allowed to identify potential differences in the determinants of outsourcing across the five IS functions.

4 Empirical Results

4.1 Descriptive Statistics

The descriptive results of the study relate to the first research question that aimed to increase the base of knowledge regarding the extent of IS outsourcing in SMEs. The demographics of the sample are illustrated in Table 2.

Table 2: Demographics

Demographics		Sample	Min	Max	Mean	StD
Firm Size	Sales in Mill. DM	31	15	750	**134**	161
	Number of Employees	33	25	1900	**525**	532
IS Size	IS-Expenditure/Sales (%)	29	0.10	1.80	**0.70**	0.44
	Number of IS Employees	33	0	22	**5**	5

It is apparent that within the firms investigated, the ratio of IS expenses from total sales is quite small (mean: 0.7%). The number of IS employees, with an average of five employees, may also be categorized as relatively small. This implies that there is a rudimentary division of labor within the IS function of SMEs.

Table 3: Percentage of Outsourcing per IS Function

IS Functions	Sample	Max (%)	Mean (%)	StD
System & Data Center Operations	33	100	**23**	28
Telecommunications & Networks	33	100	**24**	30
Application Services (Development, Implementation and Maintenance)	33	90	**31**	32
Help Desk & User Support	33	90	**18**	22
IS-Planning & Management	33	50	**6**	10

Examining the degree of outsourcing across the individual IS functions reveals that the limited personnel resources observed in IS may not be explained by a high level of outsourcing in SMEs. Indeed, the degree of outsourcing can be considered moderate, with the means varying from 6% to 31% (see Table 3). The highest degree of outsourcing can be observed for the applications development and maintenance function (mean: 31%), followed by telecommunication & networks, system & data center operations, user support, and IS planning & management. A closer investigation of the relative financial importance of each IS function reveals that on average the highest amount of money is spent for systems operations

(30%), followed by application services (27%), telecommunication & networks (18%), user support (15%) and IS management (10%).

To better understand the systems landscape of SMEs, a control question was asked on the types and the extent of standard software usage. Interestingly, the degree of standard software usage from external sources was quite significant. This is particularly true for administrative functions. In the fields of finance and accounting, 76% of the responding firms use standard software products, whereby the SAP R/3 package and COMET from Siemens are preferred. The use of standard software in the fields of logistics (32%) and personnel (29%) was less commonplace.

4.2 Findings from Model Testing

Model modification. The model testing provides answers for the second research question on the determinants of selective IS outsourcing. Before analyzing the structural model it is important to ensure that each block of indicators consistently measures what it is supposed to measure. Following this procedure, it became obvious that when testing the aggregated model and the five individual models for each IS function, the three formative indicators of the construct of *environmental and behavioral uncertainty* are partly related to the construct not only with different weights but also with different directions. This ambivalence in the formative indicators gave raise to the supposition that each of the indicators may not only represent different independent aspects of uncertainly but may also exert different theoretical influences on the degree of outsourcing. In order to better illustrate and understand these different impacts of the three uncertainty items, the initial model was adapted in an exploratory manner. Similar to simple regression analysis, each item was treated as a separate construct with a single measurement item. The resulting path relationships are reflected by the following three hypotheses:

Hypothesis 2a: *The smaller the number of suitable external suppliers, the less likely an IS functions will be outsourced.*

Hypothesis 2b: *The greater the change in the demands and tasks of individual IS functions, the less likely they will be outsourced.*

Hypothesis 2c: *The greater the difficulty in measuring task completion of the individual IS functions, the less likely they will be outsourced.*

In this way, the explanatory power of the individual indicators can better be illustrated and falsified. Each indicator now represents an independent predictor variable. This modification of the original model structure, however, means a deviation form the original research design. It can be regarded as an exploration within the confirmatory research approach (Chin 1998a; Lee et al. 1997, S. 121).

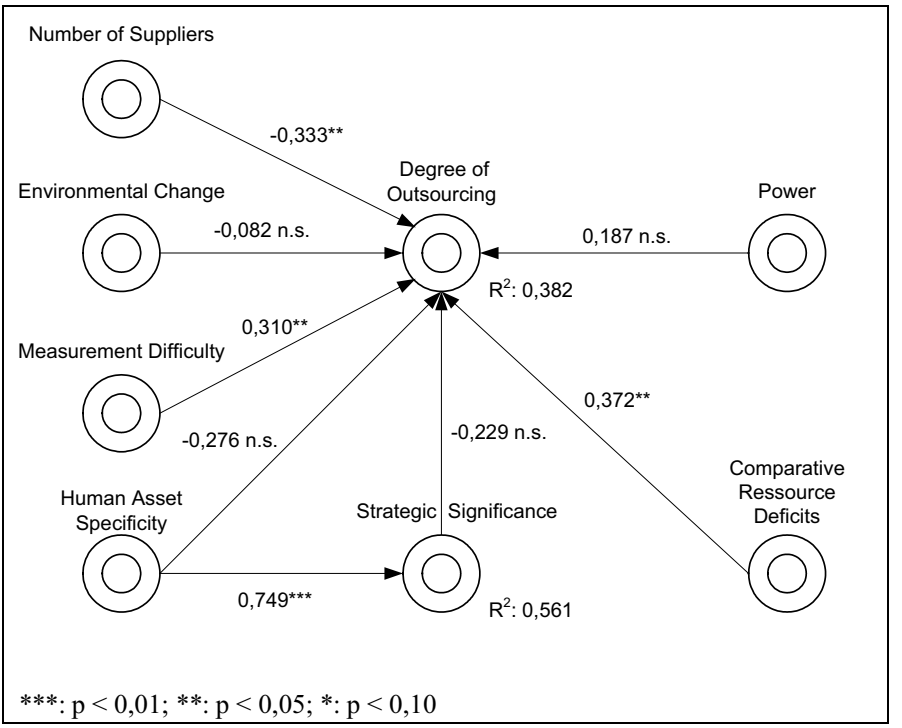


Figure 2: Model Findings for Applications Development, Implementation and Maintenance

Measurement reliability of adapted model. In order to ensure measurement reliability for the adapted model, both indicator and construct reliability were assessed (Chin 1998c; Peter 1981). The reliability of the individual indicators per construct was assessed by examining the construct loadings. As can be inferred from Table 5 (see Appendix), all of the loadings were above the threshold of 0.7 and highly significant at the 0.01 level, except for three items that were non significant (n.s.) and two that were significant at the 0.05 (**) level. Construct reliability was assessed by examining the composite reliability (CR) and the average variance extracted (AVE) for each latent variable. As can be inferred from Table 6 (see Appendix), all of the calculated indices for the tested models were above the threshold of 0.7 for CR and 0.5 for AVE (Bagozzi and Yi 1988), except for one AVE value (0.41) and three CR items (0.64, 0.65, 069). Thus, overall, no systematic measurement error that occurred throughout all of the IS functions could be observed. Since the constructs “number of suppliers”, “environmental changes”, “measurement difficulties”, and “degree of outsourcing” were measured with only one indicator, the factor loadings are fixed at 1.0.

Structural model. The test results for the modified structural model are presented in Table 4. Moreover, Figure 2 provides the graphical presentation for one

selected IS function "*applications development, implementation and maintenance"*. The test results for each hypothesis are assigned to the respective path by including the path coefficients (standardized) together with their level of significance. As can be inferred from Figure 2, only hypothesis H3a+ (strong positive relationship between *human asset specificity* and strategic significance) and H4+ (moderately strong positive relationship between resource deficits and the degree of IS outsourcing) is supported for this particular IS function. Hypotheses H2a+ and H2c- show a reversed significant relationship. Hypotheses H1-, H2b- and H5- are insignificant. Moreover, a total of 38.2% of the variance in the dependent variable – the degree of IS outsourcing – is explained by the model.

Table 4: Path Coefficients and t-Values

IS Functions	**Hypotheses**								**R^2**	
	H1(-) Asset spec.	H2a(+) No. of suppl.	H2b(-) Change	H2c(-) Meas. diffic.	H3a(+) Ass. sp. ->Strat.	H3b(-) Strat.	H4(+) Res.def.	H5(-) Power	Strat.	Out
Application services	0.28 t: 0.88	-0.33** t: 1.94	0,08 t: 0.55	0.31** t: 1.70	0.75*** t: 10,99	-0.23 t: 0.89	0.37** t: 1.77	0.19 t: 0.92	0.56	0.38
Systems operations	0.03 t: 0.12	0.02 t: 0.10	-0.30* t: 1.38	0.54** t: 2.31	0.355** t: 1,8	-0.083 t: 0.57	0.26* t: 1.80	0.26 t: 1.08	0.13	0.44
User Support	-0.28 t: 1.00	0.29* t: 1.57	-0.10 t: 0.54	0.41*** t: 2.68	0.61*** t: 7.10	0.37* t: 1.37	0.44*** t: 2.56	0.48** t: 2.09	0.38	0.45
Telecom & Networks	0.06 t: 0.18	0.26* t: 1.42	0.24* t: 1.44	-0.13 t: 0.51	0.43* t: 1.54	-0.28 t: 1.00	0.18 t: 0.78	-0.22 t: 0.79	0.19	0.21
Planning & Mgmt.	0.22 t: 0.64	0.08 t: 0.39	0.13 t: 0.52	-0.12 t: 0.47	0.41*** t: 2.45	-0.28 t: 0.91	0.21 t: 1.07	0.27* t: 1.35	0.16	0.28
All IS functions	0.06 t: 0.51	0.05 t: 0.88	-0.08 t: 0.38	0.06 t: 0.41	0.56*** t: 13.71	-0.09 t: 0.77	0.34*** t: 5.32	0.12* t: 1.32	0.31	0.16

5 Discussion

Overall, the results offer evidence that there are some substantial differences in the determinants of IS outsourcing between IS functions and that the IS outsourcing decision of SMEs is strongly influenced by resource constraints rather than strategic and transaction cost economic considerations, or power aspects.

The stream of reasoning of TCE is strongly based on the view that organizations opt for insourcing when the risk of market failure is too high in economic terms. This risk is proposed to be particularly high if the human assets required to perform an IS function are highly firm specific and if the IS function is associated with a high level of uncertainly. Obviously, there was no direct impact of human asset specificity on the degree of outsourcing in any of the tested models, which

implies that the economic consequences of human asset specificity are not taken into account in outsourcing decisions by SMEs.

It is interesting to note, however, that human asset specificity consistently was found to have a strong impact on the strategic significance of each of the IS functions. This means that firm specific assets, reflected by a good understanding of the idiosyncratic processes of the business units as well as cross-functional process knowledge, are important prerequisites for achieving strategic benefits from IS. The strategic impact of an IS function does not automatically mean, however, that such a function should not be outsourced (McLellan et al. 1995), as indicated by the mostly insignificant relationship between strategic significance and degree of outsourcing. Moreover, it could be argued that SMEs generally put little emphasis on strategic considerations when it comes to decide on important IS issues such as outsourcing. For example, in a study on IS management in SMEs, Krcmar found the consciousness of the strategic relevance of IS to be quite low among IT directors (Krcmar 1992). Similarly, a study on IS-controlling issues in mid-sized firms clearly showed that SMEs emphasized the importance of IS on the overall firm level, however, there was very little evidence for a downstream implementation and consideration of strategic issues (Spitta 1998). In the only U.S. based empirical study on IS outsourcing in mid-sized firms to date, Borchers also determined that there was no relationship between the construct of IS as a core competency and the degree of IS outsourcing (Borchers 1996); whereas in the base study by Loh (1993), whose research subjects consisted of large U.S. firms (Fortune 500), a strong negative relationship was ascertained.[2]

What stands out from the findings, is the strong and significant impact of perceived comparative resource deficits on the degree of IS outsourcing for the majority of IS functions – except for the functions telecom & network as well as planning & management. In 1991, Rumelt et al. showed foresight with the view that market contracts would not only be taken into consideration when they are perceived as not to fail based on efficiency criteria but also, or even more likely, when firms or organizations themselves "fail" to adequately perform a certain task or function (Rumelt et al. 1991, p. 19).

This, obviously, is the decisive factor of the majority of sourcing decisions in the observed SMEs. Deficits in an organization's IS resources in coping with current and future requirements appear to serve as an overriding contingency (Sambamurthy and Zmud 1999) or deviant factor (Brown 1997) in many outsourcing decisions of SMEs. Based on this, the partially contradictory findings on the retlationship between the constructs "number of suppliers", "measurement

[2] Borchers (1996) states : "The concept of core competencies, while frequently mentioned in management literature and embraced in the Fortune 500 firms Loh worked with, may well be a prescription that managers in the medium sized manufacturing firms studied here have not yet come to understand and employ."

difficulty" and "environmental change" and the degree of outsourcing become more plausible.

In terms of the negative rather than positive relationship between the number of available suppliers and the degree of outsourcing, it can be argued that SMEs outsource application services, system operations or the help desk function despite a small number of suitable IS service providers because, for them, the elimination of resource deficits with the help of external suppliers outweighs the danger of resource dependency on an IS service provider.

Another notion of resource deficits could be an explanation for the contradictory finding that organizations were found to outsource particular IS functions to a higher (rather than lower) extend when they have difficulties in measuring the performance of these functions (application services, systems operations, and user support). Here, measurement difficulties may be viewed as deficits, which could more likely be eliminated by an external provider than by the firm itself. Similar results could be found in a study on spin-off arrangements (Heinzl 1993b), where the desire for improved monitoring and control of IS were a strong driver for spinning off the IS function. Such an interpretation is fueled by critics of transaction cost theory that question the supposition that the danger of opportunistic behavior could better (i.e. more efficiently) be prevented within the firm via the principle of authority and internal control mechanisms (Ghoshal and Moran 1996).

It is also interesting that with the function telecom & networks, no significant relationship could be found between resource deficits and outsourcing. This observation could be related to limited experiences of SMEs with advanced information and communication technologies (at least for the time of the survey). Contrary to H2a+, firms prefer to outsource telecom & network services despite a limited *number of external providers* and – contrary to TCE – when the degree of environmental change *in the requirements and tasks* of this infrastructure function is perceived to be particularly high. In this case, outsourcing may be seen as a spontaneous, unreflected reaction to an uncertain environmental situation, which is caused by strong innovational forces within the IT market. The need for adopting so-called "enabling technologies" in order to stay competitive in the market may be so strong, that outsourcing is seen as a viable option to quickly follow suite (Beije 1996, p. 311).

Moreover, contrary to H5, power of the entire IS function had a significant positive rather than negative impact on the degree of outsourcing. That is, more power is related to more outsourcing. This observation can likely be traced back to the specific SME situation. The descriptive data has shown that the provision of personnel and financial resources for IS is limited in all of the responding firms. Therefore, it might be inappropriate to relate the power aspect only to the situation *within* the firm. By contrast, the possible change of power through IS outsourcing, needs to be considered. With an average number of five IS employees, the career,

salary, and developmental paths for IS employees are strongly restricted in SMEs. It can therefore be argued that IS professionals will tend to favor the employment at an external service provider and, accordingly, will have a positive attitude towards IS outsourcing even if they have a relatively high power position within the firm.

Finally, it is evident that the model's explanatory power relating to the function *planning and management* is low. The decisive aspects for keeping this function within the boundaries of the firm may lie outside of the explanatory realm of the model. In particular, the aspects of coordination and control of an external service provider as well as the retention of capabilities for self-accentuation and direction in IS could prove relevant.

6 Summary and Outlook

This paper has focused on the situation of IS outsourcing in a specific manufacturing industry with a relatively high amount of SMEs. The results have shown that the SMEs spent relatively little money on IS and that the degree of outsourcing is moderate. The majority of companies that opted for outsourcing did so selectively. Whereas application services make up the largest share of outsourcing, planning and management for the most part remains within the boundaries of the firm.

The main reason for outsourcing IS functions were internal resource deficits compared to external service providers. This implies that IS functions are predominantly seen as necessary resources that are acquired from the most suitable sources which can be either in-house or at the external market. It does not matter whether the assets required to perform an IS function are very firm specific and hence may serve as the basis of a sustained competitive advantage. Moreover, the potential economic risks that may arise from the outsourcing of highly specific IS functions are not reflected by the current sourcing decisions of the SMEs. This requires further research into the specific situation of SMEs. Are SMEs able to build up close relationships with individual (locally situated) external service providers? Are these relationships build on trust and cooperation, which reduces the economic risks of outsourcing? Answers to these questions may explain why no significant relationship could be found between human asset specificity and the degree of outsourcing.

In a sense of „critical social theory“ (Lee 1999, S. 31), it may be critically noted, however, that the practice of small and mid-sized firms to outsource IS functions with a small number of available service providers and with difficulties in evaluating task performance increases the danger of dependency on a single

provider (lock-in) and may lead to a loss of control over the service provider over time.

Finally, it should be noted that this study poses a number of *limitations* that need to be taken into account. First, the sample size can be regarded as small. Second, only a specific business sector of SMEs was surveyed. Research is necessary to determine the extent to which the results may be applied to other industries and whether or not deviations in IS outsourcing exist with reference to large companies in Germany.[3] A cross-cultural study could provide information as to whether or not outsourcing behavior in German-speaking countries is significantly different from other cultural regions. Third, the division of IS into five functions ignores the fact that these may further be divided into sub-functions. In applications development, for example, the division could reflect the different developmental stages or a division of duties into single modules with diverse requirements for applications development (Alpar and Saharia, 1995; Heisekanen, et al., 1996). Moreover, the project level may be an appropriate unit of analysis for studying outsourcing decisions (Beath and Walker 1998; Sabherwal 1999). Fourth, the measurement instruments for the *uncertainty* construct have proven to be extremely heterogeneous. In future studies, the individual indicators should be treated as separate constructs with different causal influences on IS outsourcing. Fifth, in this article, relationships were only observed on the macro-level. Each relationship is based on a number of behavioral assumptions on the micro, i.e. the individual level. These assumptions could potentially be incorporated as separate constructs, and their influence on the model structure be hypothesized as intermediators or moderators of relationships at the macro-level (Dibbern et al. 2005). Within the framework of transaction cost theory, the measurement of opportunism or opportunistic behavior, in terms of behavioral uncertainty, as well as the incorporation of trust could exceed the limitations of the neoclassical methodical individualism (Ghoshal and Moran 1996; Noorderhaven 1996). During the exploration of relationships on the individual level, an exploratory research design using case studies could enhance our understanding. In conclusion, it is to be maintained that the question of IS outsourcing in small and medium-sized firms is no less exciting than in large companies and hopefully be taken up by future research.

[3] A study conducted by Alpar and Ein-Dor (1991) in small and mid-sized firms in the USA showed that their needs differ from those of the larger enterprises. Whereas small and mid-sized firms focus on IS quality and reliability, large companies focus on planning and management.

References

Alpar, P., and Ein-Dor, P. "Major IS Concerns of Entrepreneurial Organizations," *Information & Management* (20) 1991, pp 1-11.

Bagozzi, R.P., and Yi, Y. "On the Evaluation of Structural Equation Models," *Journal of the Academy of Marketing Science* (16) 1988, pp 74-94.

Beath, C.M., and Walker, G. "Outsourcing of Application Software: A Knowledge Management Perspective," Annual International Conference on System Sciences, IEEE, Hawaii, 1998, pp. 666-674.

Beije, P.R. "Transaction Costs and Technological Learning," in: *Transaction Cost Economics and Beyond,* J. Groenewegen (ed.), Kluwer Academic Publishers, Boston, Dordrecht, London, 1996, pp. 309-326.

Borchers, A.S. "Information Technology Outsourcing: A Test of Organizational Economic, Strategic and Political Models," in: *School of Business and Enterpreneurship*, Nova Southeastern University, 1996.

Brown, C. "Examining the Emergence of Hybrid IS Governance Solutions: Evidence from a Single Case," *Information Systems Research* (8:1) 1997, pp 69-94.

Chin, W.W. "Exploratory Structural Equation Modeling," Structural Equation Modeling in IS Research: ISWorld Net Virtual Meeting Center at Temple University, 1998a.

Chin, W.W. "Issues and Opinion on Structural Equation Modeling," *MIS Quarterly* (22:1) 1998b, pp VII-XVI.

Chin, W.W. "The Partial Least Squares Approach for Structural Equation Modeling," in: *Modern Methods for Business Research,* G.A. Marcoulides (ed.), Lawrence Erlbaum Associates, Hillsdale, 1998c, pp. 295-336.

Chin, W.W., and Newsted, P.R. "Structural Equation Modeling: Analysis with Small Samples Using Partial Least Squares," in: *Statistical Strategies for Small Sample Research,* R. Hoyle (ed.), Sage Publications, 1999, pp. 307-341.

Clemons, E.K., and Row, M.C. "Sustaining IT Advantage: The Role of Structural Differences," *MIS Quarterly* (15:3) 1991, pp 275-292.

Conner, K.R. "A Historical Comparison of Resource-Based Theory and Five Schools of Thought Within Industrial Organization Economics: Do We Have a New Theory of the Firm?," *Journal of Management* (17:1) 1991, pp 121-154.

Cyert, R.M., and March, J.G. *A Behavioral Theory of the Firm* Prentice-Hall, Englewood Cliffs, N.J.,, 1963, p. 332.

Dearden, J. "The Withering Away of the IS Organization," *Sloan Management Review* (28:4) 1987, pp 87-91.

Demsetz, H. "The Theory of the Firm Revisited," in: *The Nature of the Firm - Origins, Evolutions, and Development,* O.E. Williamson and S.G. Winter (eds.), New York, Oxford, 1991, pp. 159-178.

Dibbern, J., Chin, W.W., and Heinzl, A. "The Impact of Human Asset Specificity on the Sourcing of Application Services," European Conference of Information Systems, Regensburg, 2005.

Dibbern, J., Goles, T., Hirschheim, R.A., and Jayatilaka, B. "Information Systems Outsourcing: A Survey and Analysis of the Literature," *The DATA BASE for Advances in Information Systems* (35:4) 2004, pp 6-102.

Dibbern, J., Güttler, W., and Heinzl, A. "Die Theorie der Unternehmung als Erklärungsansatz für das selektive Outsourcing der Informationsverarbeitung," *Zeitschrift für Betriebswirtschaft* (71:6) 2001, pp 675-699.

Dierickx, I., Cool, K., and Barney, J.B. "Asset Stock Accumulation and Sustainability of Competitive Advantage; Comment; Reply," *Management Science* (35:12) 1989, pp 1504-1514.

Fornell, C. "The Blending of Theoretical Empirical Knowledge in Structural Equations with Unobservables," in: *Theoretical Empiricism: A General Rationale for Scientific Model-Building,* H. Wold (ed.), Paragon House, New York, 1989, pp. 153-174.

Foss, N.J. "Knowledge-Based Approaches to the Theory of the Firm: Some Critical Comments," *Organization Science* (7:5) 1996, pp 470-476.

Ghoshal, S., and Moran, P. "Bad for Practice: A Critique of the Transaction Cost Theory," *Academy of Management Review* (21:1) 1996, pp 13-47.

Grant, R.M. "The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation," *California Management Review* (33:3) 1991, pp 114-135.

Grover, V., Cheon, M.J., and Teng, J.T.C. "A Descriptive Study on the Outsourcing of Information Systems Functions," *Information & Management* (27:1) 1994, pp 33-44.

Günterberg, B., and Kayser, G. "SMEs in Germany: Facts and Figures," IFM-Materialen, Nr 161, Institut für Mittelstandsforschung, Bonn.

Heinrich, L. "Zur Frage "Eigenfertigung oder Fremdbezug" bei der Informationsverarbeitung," *Schmalenbachs Zeitschrift für betriebswirtschaftliche Forschung* (10/11) 1969, pp 676-688.

Heinzl, A. *Die Ausgliederung der betrieblichen Datenverarbeitung : eine empirische Analyse der Motive, Formen und Wirkungen* Poeschel, Stuttgart, 1993a.

Heinzl, A. "Outsourcing the Information Systems Function Within the Company: An Empirical Survey," International Conference of Outsourcing of Information Services, University of Twente, The Netherlands, 1993b.

Heinzl, A. *Die Evolution der betrieblichen DV-Abteilung: eine lebenszyklustheoretische Analyse* Physica, Heidelberg, 1996.

Heinzl, A., and Stoffel, K. "Die Ausgliederung der betrieblichen Informationsverarbeitung," in: *Alternative Organisationskonzepte der betrieblichen Datenverarbeitung,* A. Heinzl and J. Weber (eds.), Stuttgart, 1993, pp. 173-214.

IDC "European Outsourcing Markets and Trends, 1996-2002," No. P04E, International Data Corporation.

IDC "Worldwide and U.S. IS Outsourcing Services Competitive Analysis."

Knudsen, C. "Theories of the Firm, Strategic Management, and Leadership," in: *Resource-Based and Evolutionary Theories of the Firm: Towards a Synthesis,* C.A. Montgomery (ed.), Boston, Dordrecht, London, 1995, pp. 179-217.

Krcmar, H. "Leise Töne im Information Management des Mittelstands," *Information Management* (7:4) 1992, pp 79-83.

Krcmar, H. *Informationsmanagement* Springer, Berlin u. a., 1997.

Lacity, M.C., and Hirschheim, R.A. *Information Systems Outsourcing: Myths, Metaphors, and Realities* Wiley, Chichester, New York, 1993, pp. xiv, 273.

Lacity, M.C., Willcocks, L.P., and Feeny, D.F. "IT Outsourcing: Maximize Flexibility and Control," *Harvard Business Review* (May-June) 1995, pp 84-93.

Lacity, M.C., Willcocks, L.P., and Feeny, D.F. "The Value of Selective IT Sourcing," *Sloan Management Review* (37:3) 1996, pp 13-25.

Langlois, R.N. "Capabilities and Coherence in Firms and Markets," in: *Resource-Based and Evolutionary Theories of the Firm: Towards a Synthesis,* C.A. Montgomery (ed.), Boston, Dordrecht, London, 1995, pp. 71-100.

Lee, A.S. "Rigor and relevance in MIS research: Beyond the approach of positivism alone," *MIS Quarterly* (23:1) 1999, pp 29-33.

Lee, B., Barua, A., and Whinston, A.B. "Discovery and Representation of Causal Relationships in MIS Research: A Methodological Framework," *MIS Quarterly* (21:1) 1997, pp 109-136.

Loh, L. "The Economics and Organization of Information Technology Governance: Sourcing Strategies for Corporate Information Infrastructure," Massachusetts Institute of Technology, 1993.

Mata, F.J., Fuerst, W.L., and Barney, J.B. "Information Technology and Sustained Competitive Advantage: A Resource-Based Analysis," *MIS Quarterly* (19:4) 1995, pp 487-505.

Mertens, P., and Knolmayer, G. Organisation der Informationsverarbeitung: Grundlagen - Aufbau - Arbeitsteilung, Wiesbaden, 1998.

McLellan, K.L., Marcolin, B.L., and Beamish, P.W. "Financial and Strategic Motivations Behind IS Outsourcing," *Journal of Information Technology* (10) 1995, pp 299-321.

Morgan, G. *Images of Organization*, Newbury Park, London, New Delhi, 1996.

Noorderhaven, N.G. "Opportunism and Trust in Transaction Cost Economics," in: *Transaction Cost Economics and Beyond,* J. Groenewegen (ed.), Kluwer Academic Publishers, Boston, Dordrecht, London, 1996, pp. 105-128.

Peter, J. "Reliability: A Review of Psychometric Basics and Recent Marketing Practices," *Journal of Marketing Research* (16:February) 1981, pp 6-17.

Pfeffer, J. *Power in Organizations* Pitman Pub., Marshfield, Mass., 1981, pp. xiv, 391.

Rumelt, R.P., Schendel, D., and Teece, D.J. "Strategic Management and Economics," *Strategic Management Journal* (12) 1991, pp 5-29.

Sabherwal, R. "The Role of Trust in Outsourced IS Development Projects," *Communications of the ACM* (42:2) 1999, pp 80-86.

Sambamurthy, V., and Zmud, R.W. "Arrangements for IT Governance: a Theory of Multiple Contingencies," *MIS Quarterly* (23:3) 1999, pp 261-290.

Sobol, M.G., and Apte, U.M. "Domestic and Global Outsourcing Practices of America`s most Effective IS Users," *Journal of Information Technology* (10) 1995, pp 269-280.

Spitta, T. "IV-Controlling in mittelständischen Industrieunternehmen - Ergebnisse einer empirischen Studie," *WIRTSCHAFTSINFORMATIK* (5) 1998, pp 424-433.

Teece, D.J., Rumelt, R.P., Dosi, G., and Winter, S.G. "Understanding Corporate Coherence: Theory and Evidence," *Journal of Economic Behavior and Organization* (23) 1994, pp 1-30.

Teng, J.T.C., Cheon, M.J., and Grover, V. "Decisions to Outsource Information Systems Functions: Testing a Strategy-Theoretic Discrepancy Model," *Decision Sciences* (26:1) 1995, pp 75-103.

TPI "The TPI Index Q1/2005," in: www.tpi.net, 2005.

Tushman, M. "A Political Approach to Organizations: A Review and Rationale," *Academy of Management Review* (2:2) 1977, pp 206-216.

Williamson, O.E. *Markets and Hierarchies, Analysis and Antitrust Implications : A Study in the Economics of Internal Organization* Free Press, New York, 1975, pp. xvii, 286.

Williamson, O.E. "The Economics of Organization: The Transaction Cost Approach," *American Journal of Sociology* (87:3) 1981, pp 548-577.

Williamson, O.E. *The Economic Institutions of Capitalism : Firms, Markets, Relational Contracting* Free Press, Collier Macmillan, New York, London, 1985, pp. xiv, 450.

Williamson, O.E. "Transaction Cost Economics," in: *Handbook of Industrial Organization,* R. Schmalensee and R.D. Willig (eds.), Amsterdam, New York, Oxford, Tokyo, 1990, pp. 135-182.

Wold, H. "Introduction to the Second Generation of Multivariate Analysis," in: *Theoretical Empiricism: A General Rationale for Scientific Model-Building,* H. Wold (ed.), Paragon House, New York, 1989, pp. vii-xl.

Appendix

Survey Items for Scales used in PLS Analysis (translated from German)

Unless otherwise stated, variables were measured using a five-point scale from "1" indicating "*strongly agree*" to "5" indicating "*strongly disagree*" with "0" at the midpoint indicating "*partly agree*".

Current Degree of IS Outsourcing (Out)

For each of the five IS functions, please estimate the percentage from the overall budget for that function that is all allocated to outsourcing.

Out _____%

Environmental and Behavioral Uncertainty

Change How high do you estimate the (future) change in the requirements and tasks of each of the five IS functions (e.g. technological advancements, innovations, frequency of changes and adaptations to new technological standards) ? (from 1 very high to 5 very low)

Measurement difficulty Please estimate for each of the five IS functions the difficulty in evaluating and measuring task completion.

Number of suppliers Please estimate the number of suitable suppliers that are available for each of the five IS functions. (A = none; B2 = one supplier; C = two to three; D = four to six; E = seven or more)

Human asset specificity

Business knowledge The professionals in the respective IS functional area need to have profound knowledge about the processes and requirements of the business units (e.g. marketing, sales, production, accounting, finance).

Cross-functional knowledge The professionals in the respective IS functional area need to have exact knowledge about the interdependency within the business areas as well as their relationships to customers, suppliers and other external stakeholders.

Closeness of client collaboration In the particular IS function there is close collaboration with the business units, e.g. in form of team and project work

Power

Hierarchy level Please assign the organizational integration of the IS department in your company to one of the following four options:

1 = Independent division (board or top management area)

2 = Central staff division assigned to top management level

3 = Integration into a line of business (e.g. assignment to finance and accounting or controlling area)

4 = Other _____

Financial autonomy How high do you estimate the financial independency, i.e. the budget independency of the IS department of your company? ? (from 1 very high to 5 very low)

Strategic Significance

Cost leadership This IS function contributes significantly to achieving cost advantages over our competitors.

Differentiation This IS function contributes significantly to achieving a competivie advantage over our rivals through differentiation of our product and sevices portfolio

Comparative Resource Deficits

Existing gaps The capabilities (e.g. service mentality, know-how, qualifications of professionals, depth of specialization) of an external service provider in closing existing gaps in task completion are higher than our own capabilities.

Future requirements The capabilities of an external service provider in coping with future requirements of this IS function are higher than our own ones.

Measurement Reliability

Table 5: Construct Loadings

Construct	Items	Application services	Systems operations	User support	Telecom & networks	Planning & mgmt.	All IS functions
Human asset specificity	Business knowledge	0,82	0,79	0,88	0,33 n.s.	0,96	0,88
	Cross-functional knowledge	0,83	0,92	0,87	0,69**	0,88	0,88
	Client collaboration	0,76	0,88	0,69	0,80**	0,86	0,87
Strategic Significance	Cost reduction	0,92	0,76	0,90	0,88	0,79	0,87
	Differentiation	0,90	0,90	0,86	0,79	0,95	0,90
Comparative resource deficits in	Closing gaps	0,98	0,97	0,93	0,96	0,93	0,95
	Coping with requirements	0,97	0,97	0,91	0,87	0,93	0,94
Power	Hierarchy level	0,68	0,70	0,82	0,42 n.s.	0,998	0,72
	Financial autonomy	0,87	0,85	0,74	0,98	0,28 n.s.	0,84

Table 6: Construct Reliability

Construct	Application services		Systems operations		User support		Telecom & networks		Planning & mgmt.		All IS functions	
	CR	AVE	CR	AVE	CR	AVE	CR	AVE	CR	AVE	CR	AVE
Human asset specificity	0,85	0,65	0,90	0,75	0,86	0,67	0,65	0,41	0,93	0,81	0,91	0,77
Strategic Significance	0,90	0,82	0,82	0,69	0,87	0,77	0,82	0,69	0,87	0,77	0,87	0,87
Comparative resource deficits	0,97	0,95	0,97	0,94	0,92	0,84	0,92	0,84	0,92	0,86	0,95	0,90
Power	0,75	0,61	0,75	0,61	0,76	0,61	0,69	0,57	0,64	0,54	0,76	0,61

Antecedents of Information Systems Backsourcing

Natalia Falaleeva Veltri

Loyola College in Maryland, Information Systems and Operations Management, 4501 North Charles Street, SH 323 Baltimore, MD 21210-2699, USA, email: nfalaleeva@loyola.edu

Carol Saunders

MIS Department, University of Central Florida, PO Box 161400, Orlando, Florida 32816-1400, phone: (407) 823-6392, fax: (407) 823-2389, email: carol.saunders@bus.ucf.edu

1 Backsourcing Phenomenon

Information systems backsourcing is a business practice in which a company takes back in-house assets, activities, and skills that are part of its information systems operations and were previously outsourced to one or more outside information systems (IS) providers. It is a significant emerging trend, and a number of companies have returned the outsourced functions back in-house. Backsourcing, as the term implies, follows the initial outsourcing arrangement, and can be a result of an expired, renegotiated or terminated outsourcing contract. Backsourcing does not have to be an all-or-nothing proposition (Buxbaum 2002), and depending on the circumstances companies undergo partial or complete reversal of an outsourcing contract.

The global outsourcing market has been growing steadily from revenues of U.S. $9 billion in 1990 (Lacity et al. 2000), to U.S. $184 billion in 2003. Gartner estimates that total worldwide spending on IT outsourcing will reach U.S. $256 billion by 2008 (Blackmore et al. 2005). Companies of all sizes pursue outsourcing arrangements, and many multimillion deals have been widely publicized. However, outsourcing is viewed as completely satisfactory only by 55% of the companies involved in this arrangement, and as partially satisfactory by 39% (Lackow 2001).

Many problems arise in this client-provider relationship that create dissatisfaction with the outsourcing arrangement. Outsourcing is frequently linked to poor

controls, high costs, and drains on quality and service performance (King and Malhorta 2000). Its disadvantages include loss of expertise and control of IS direction (Benko 1992; Quinn et al. 1994), increased costs (Doig et al. 2001), lack of flexibility in addressing change in the business (Quinn 1999), and dissatisfied customers (Kern et al. 2001). These problems and disadvantages all diminish the business value of the outsourced processes and reduce the profitability of the outsourcing arrangement. Furthermore, to the dismay of many outsourcing clients, IS outsourcing contracts often do not specify outsourced services in detail, placing the client at a disadvantage in terms of pricing and the availability of services. When conflicts arise between the client and the provider, some IS outsourcing deals get renegotiated or even canceled before they are due to expire.

Once the decision to terminate the outsourcing contract is made, or the contract is about to expire, the client company faces a choice of either staying with the current provider, hiring another provider to manage the IS functions, or taking the IS activities and assets back in-house. Lacity and Willcocks found that almost one-third of the canceled outsourcing contracts were eventually brought back in-house, or backsourced (2001). Why would organizations take back in-house assets, activities, and skills previously outsourced?

While there are some explanations of the backsourcing phenomenon in both academic and popular press, most of them are conjectures and anecdotal evidence. However, Lacity and Willcocks recognized its importance when they called for the investigation of the factors that lead to backsourcing (2000). This chapter investigates the client's reasons for backsourcing after an outsourcing arrangement.

We derive economic, strategic and relationship motives for the backsourcing decision from multiple theoretical perspectives. These theories previously have been applied to explorations about sourcing considerations and include transaction cost theory (Ang et al. 1998; Grover et al. 1996; Poppo et al. 1998; Wang 2002), agency theory (Ho et al. 2003; Logan 2000), core competency perspective (Quinn 1999), interorganizational relations theory (Kern et al. 2001) and marketing channels theory (Alajoutsijarvi et al. 2000; Bolton, 1998; Dwyer et al 1987; Ping 1995). Using these theories a framework of backsourcing factors is developed and the influence of these factors is explained. Real-life examples of IS backsourcing are used to illustrate the different reasons that companies have for taking previously outsourced IS activities back in-house. Discussion section reflects on how the various backsourcing antecedents interact in the backsourcing decisions.

2 IS Backsourcing vs. IS Outsourcing

Make-or-buy assessments and decisions are continuously made in business organizations, and in terms of IS in organizations they entail outsourcing vs. insourcing of IS functions and activities. Insourcing deploys and manages information systems internally within the organization. Outsourcing involves business arrangements to manage IS activities outside the original organization. Once the decision to outsource is made, the company contracts a provider to perform the necessary activities. When the contract expiration date approaches, or the partners decide to terminate the contract prematurely, the issue of sourcing arises again. At that time, the client must decide either to stay with the current provider (continue the outsourcing relationship), hire another provider to manage the IS functions (find a new outsourcing arrangement), or take the activities and assets back in-house (backsource). IS backsourcing is the partial or complete reversal of the outsourcing contract and returning previously outsourced IS back in-house. Both IS outsourcing and IS backsourcing address the organization's make-or-buy decision. However, the decision to outsource is made early in the sourcing cycle at the time of initial insource/outsource considerations. The IS backsourcing decision represents a change in sourcing and is made towards the end of the sourcing cycle. It is made after evaluating the initial outsourcing contract and considering the outsourcing experience as well as changing IS requirements and needs (Figure 1).

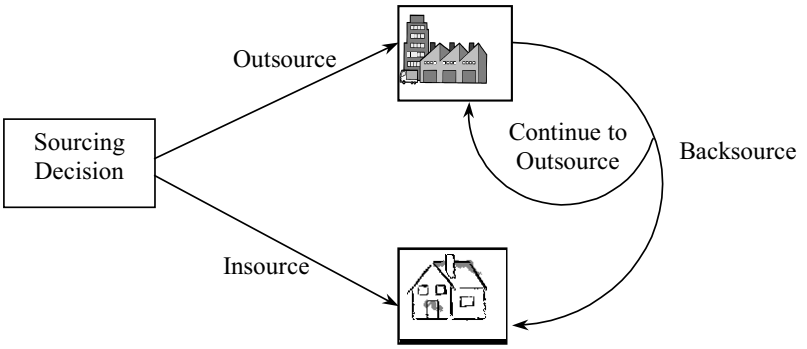


Figure 1: Sourcing Process

IS outsourcing is frequently driven by anticipated cost savings (McFarlan et al. 1995) and the desire to improve company financial performance (Smith et al. 1998). While cost considerations are important, often the client is also seeking additional business value in the utilization of IS. As the technology advances rapidly, companies may find themselves without necessary IS expertise, skills and equipment, and turn to IS outsourcing to gain access to highly qualified IS personnel (Ang et al. 1998; Grover et al. 1994). Companies outsource IS to acquire IS resources and skills that are not available internally (Lacity et al. 1993)

or when the costs of maintaining internal IS employees increase (Slaughter et al. 1996). Cost savings, financial performance improvements, and access to IS assets, capital and skills represent economic reasons for outsourcing.

On the other hand, companies approaching outsourcing considerations strategically base the choice of outsourced activities on their core competencies (McFarlan et al. 1995). The best activities to outsource are commodity services and non-critical functions (Quinn et al. 1994). Strategic importance of IS plays a role in the decision to the extent that most companies outsource non-core IS functions while maintaining control over the IS direction and strategy. Outsourcing allows companies to mobilize their IS personnel to contribute to those tasks that add strategic value to the organization (Dibbern et al. 2004). Additionally, companies often are compelled to outsource by institutional pressures from outsourcing providers, competitors, clients, trade associations and shareholders. Institutional pressures from the professional and regulatory bodies (Hu et al. 1997; Loh et al. 1992), as well as peer pressure within the industry (Ang et al. 1997) can entice companies to pursue outsourcing. Some companies engage in outsourcing because they believe other companies are successful in doing so (Lacity et al. 1993; Loh et al. 1992).

Similar to the outsourcing decision, the desire to reduce costs and improve financial performance remains salient for backsourcing. Also compelling for backsourcing decisions are relationship and strategic factors. Lacity and Willcocks (2000) suggest that backsourcing is typically motivated by a change in circumstances, redefinition of the character of outsourced service, or discovery of flaws in the initial assessment that led to outsourcing. The discovery of flaws in the initial arrangement impacts the relationship, while a change in circumstances and redefinition of the character of the outsourced service often may cause a change in the organization's strategy.

The relationship with the provider is a dynamic process that is affected by various factors throughout its development. Reported instances of backsourcing demonstrate that questionable performance on the part of provider (Lackow 2001), conflicts between the parties and lack of expertise on the part of the provider may sour the relationship (Kern et al. 2001; Lacity et al. 2001). An unsuccessful outsourcing relationship can lead to premature cancellation of the contract or nonrenewal at expiration and subsequent backsourcing.

At the same time, clients undergo business changes and continuously reevaluate existing IS outsourcing arrangements. Regardless of the problems that may arise in the outsourcing relationship, some clients backsource due to changes in business strategy or in an attempt to streamline their operations. For example, a company may take its IS function back in-house to regain control over the direction of IS. Redefinition of the importance of IS (Kern et al. 2001) in response to structural business changes such as acquisitions, divestitures and

mergers (Bushell 2003) or, changes in management often play a role in backsourcing decision.

In summary, since backsourcing is always preceded by the outsourcing relationship, some backsourcing considerations are similar to the initial outsourcing decision. However, there are additional factors that are present in backsourcing situation, most notably the outsourcing arrangement experience and the relationship between the outsourcing client and provider. Table 1 presents various motives that drive outsourcing and backsourcing, and groups those factors into economic, strategic and relationship categories.

Table 1: Outsourcing Vs. Backsourcing

	Outsourcing	**Backsourcing**
Definition	Business arrangement where third-party providers manage information system activities or develop information systems.	Business practice in which a company takes back in-house assets, activities, and skills that are part of its information systems operations and were previously outsourced to one or more outside information service providers. **Always occurs after a decision to outsource.**
Motivation	• *Economic* o Cost savings o Access to outside IS resources and skills • *Strategic* o Focus on core competencies o Institutional pressures o Restructuring (mergers, acquisitions, divestitures)	• *Economic* o Costs savings • *Strategic* o Redefinition of importance of outsourced service o Loss of control over IS o Restructuring (mergers, acquisitions, divestitures) o Changes in management • *Relationship* o Questionable performance o Conflict between client and provider o Provider's lack of expertise

3 Backsourcing Framework

As is the case with outsourcing decisions, both economic and strategic factors are important in backsourcing. Relationship factors also play a role in the assessment considerations, because backsourcing takes place after the initial outsourcing contract. To properly evaluate the client's backsourcing decision all three groups of factors should be taken into consideration (Figure 2). While individually economic, strategic and relationship theories may explain backsourcing, the combination of the theories yields a more integrated and internally consistent theoretical lens. Theoretical perspectives underpinning each of these factors have a unique emphasis that contributes to the understanding of the sourcing relationship in its entirety (Kern et al. 2001).

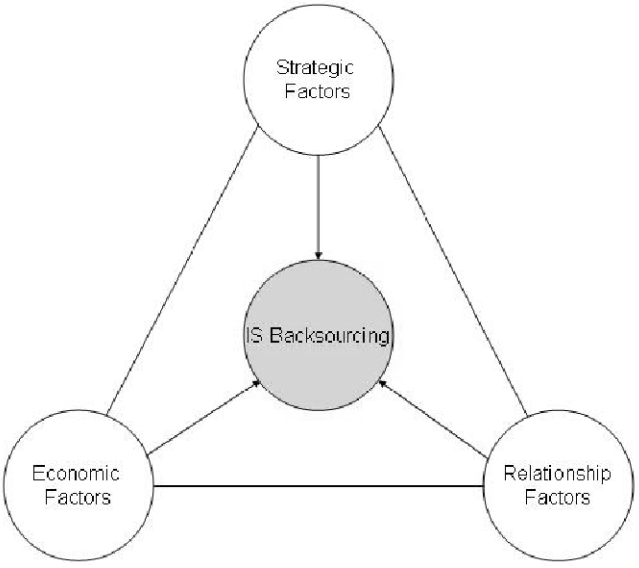


Figure 2: Backsourcing Framework

Taking into consideration economic, strategic and relationship motives involved in the backsourcing process, the conceptual framework of factors underlying the intent to backsource integrates transaction cost theory, agency theory, core competency perspective, interorganizational relations theory and marketing channels literature. Its main focus is the link between the factors involved in the evaluation of the current sourcing arrangement and information systems backsourcing. The list of factors considered in this analysis is presented in Table 2.

Table 2: Factors Involved in Backsourcing Decision

Economic	*Strategic*	*Relationship*
Cost Benefit - Production costs - Transaction costs - Agency costs - Switching Costs Asset Specificity	Change in the Role of IS Loss of Control over IS Internal Structural Changes External Structural Changes	Outsourcing Service Quality Satisfaction with Outsourcing Trust in the Provider Voice Behavior Goal Conflict

4 Economic Considerations

The two most frequent contributors to the cost-based perspective on sourcing are transaction cost theory (Ang et al. 1998; Grover et al. 1996; Poppo et al. 1998; Wang 2002) and agency theory (Ho et al. 2003; Logan 2000). These two theories identify costs and related economic factors that play a role in the evaluation of backsourcing. According to economic theory, firms acquire goods and services in the marketplace when internal production presents comparative cost disadvantages (Williamson 1981). Both internal and external sourcing initiatives are driven by a need to reduce costs (Scardino 2002). The focus on cost savings underlies many outsourcing arrangements, and costs often play a significant role when reevaluating the agreement and turning to backsourcing. Companies continuously focus on the current state of their business environment, as well as ways to introduce efficiencies, improve operations and reduce costs.

Very typically, reduced production costs, or the costs of manufacturing a product and costs of operations, are passed on from the provider to the client. Outsourcing providers may be able to achieve cost savings for their clients for several reasons. Because of economies of scale, outsourcing providers may be more effective at negotiating bulk purchases, leasing arrangements and software licenses than independent clients could hope to be. They may be more aggressive in their use of low-cost labor pools, more realistic and creative in the structuring of leases, and better at enforcing tighter overhead cost control than their clients. They also may be more capable of managing excess hardware capacity, since the capacity can be used across a number of clients.

However, expected outsourcing cost savings may never be realized during the time covered by the outsourcing contract. The lower production costs may be offset by higher transaction and agency costs. Transaction costs refer to the effort,

time, and costs incurred in coordination of external market activities. These costs result from processing transactions in the market (Gurbaxani et al. 1991). Agency costs include the costs of structuring, monitoring, and bonding a set of contracts among agents with conflicting interests (Fama et al. 1983). These costs are incurred as a result of discrepancies between the goals of the client and the provider (Gurbaxani et al. 1991; Logan 2000). Provider personnel do not act the same way on behalf of the client as the internal client employees (Ang et al. 1998). Consequently, additional hidden costs associated with monitoring the contract may outweigh the production cost savings achieved by outsourcing (Clark et al. 1995). Escalating agency costs and changes in the business situation as a result of business uncertainty can lead to the reevaluation of the outsourcing contract and return of the outsourced functions back in-house. Further, a large company can often achieve the same cost efficiencies as outsourcing providers by purchasing hardware, software and IS services directly from the manufacturers (Hoffman 2003).

Frequently the client company realizes immediate economic benefits when they sell their computing hardware to the outsourcing provider. This creates a situation where the asset specificity of the outsourcing provider is increased, since the provider's service is more customized and the provider's expenses are increased. Asset specificity is "the degree to which an asset can be redeployed to alternative uses and by alternative users without sacrifice of productive value" (Williamson 1989). Customized products and services are considered to be highly asset specific and are not easily transferable to a provider (Grover et al. 1996). Usually any increase in asset specificity also increases transaction costs (Walker et al. 1984; Williamson 1985). With highly asset-specific services and products the production costs, transaction costs and also agency costs will be higher when compared to non asset-specific services and products. As a result the client's perceived cost benefit will be lower when customization is required for their outsourced products and services.

Seeking a suitable outsourcing provider to meet its specific needs may also mean increased costs for the client for monitoring that particular deal. The more idiosyncratic the provider's investment is, the more likely it will be for the provider to take advantage of the client by disclosing distorted information or performing activities and services inappropriately. If the client fears lack of effort on the part of the provider, the relationship between the two is likely to suffer and the client may incur additional costs for monitoring and restructuring the existing outsourcing contract.

At the time of reevaluation of the outsourcing contract estimated internal production costs are compared to the current production, transaction and agency costs associated with the contract. An expected cost advantage influences the decision to terminate the outsourcing contract and follow the backsourcing route. However, there are large switching costs involved with change in IS sourcing decisions (Willcocks et al. 1996), and backsourcing can prove to be an expensive

alternative. Switching costs refer to the effort, time, and investments incurred in undergoing change in sourcing. Thus, not only production, transaction and agency costs, but also switching costs must be considered during the evaluation of backsourcing.

5 Economic Considerations: Illustration

As discussed above economic reasons and cost savings remain salient for the backsourcing decision. For some outsourcing arrangements cost savings never materialize. For instance, Farmers Group insurance company terminated a 10-year U.S. $150 million outsourcing contract with Integrated Systems Solutions (division of IBM) eight years into the deal due to escalating costs. Despite switching costs that amounted to U.S.$4 million in cancellation fees, Farmers Groups saved U.S.$6 million a year with the first year of backsourcing (Overby 2003a). With long-term outsourcing contracts technology costs may decrease over time. In these cases, the client company may be unwilling to pay fees specified in the service level agreement that are above the market rates.

On the other hand, companies often realize that they can implement the same effective strategies themselves. For example, US-based chipmaker LSI Logic Corp terminated its outsourcing contract with IBM Global Services. By managing the same IS services internally LSI Logic Corp was able to save 33% in costs (Lacity et al. 2001). The investments of the provider were no longer asset specific enough to support LSI Logic Corp's needs. In a similar situation, ABB Power subsidiary of ASEA Brown Boveri was outsourcing all of its financial applications to Sungard Recovery Services. They brought outsourced activities back in-house. By upgrading outdated software, reducing redundancies and streamlining financial processing they were able to reduce monthly costs from U.S. $70,000 to under U.S. $20,000, which resulted in more than U.S. $600,000 in annual savings for the company (Hoffman 1993).

Escalating costs and poor financial performance motivate client companies to reconsider IS outsourcing and backsource. Application of economic theories to the backsourcing considerations provides insights very similar to outsourcing situations. However, even though economic theories have been widely applied to sourcing considerations, when used individually they fail to consider other important environmental, structure, and strategic factors that may affect organizational decisions (Lee et al. 2000).

6 Strategic Considerations

Strategic decisions made by the company influence the internal structure and processes. There are a number of possible strategic reasons to reverse the outsourcing contract which include the need to regain control over the IS functions, redefinition of the importance of IS function for the organization and internal or external structural changes. The role of the IS in the organization defines the mission of the IS function and its actual contribution to the company's business operations (Premkumar et al. 1992). The core competency perspective suggests that only commodity elements and functions should be outsourced (Lacity et al. 1995). By outsourcing, organizations relieve themselves of performing an outsourced activity in-house, but also run the risk of losing the expertise in that area. Over time the role of IS can increase in importance, or the management may realize that initial assessment of the IS contribution to bottom line of the business was flawed (Kern et al. 2001). If the currently outsourced IS activity becomes critical to the client's business and presents opportunities for a competitive advantage, management may reposition IT within the company and bring it back in-house.

A major problem that clients face with the outsourcing arrangements is the loss of control over IS direction (Bushell 2003; Lacity et al. 2001). As the business and environmental requirements change organizational technology requirements are modified and need immediate attention. The provider may not always be able to meet the individual requests of the clients in a flexible and timely manner, especially if they involve major changes. Once the client organization loses control over the deployment of technology solutions, its business vitality is at stake. Consequently, the client organization may decide to terminate the outsourcing arrangement and manage IS internally when there is a need for technology innovation and its cross-functional implementation (Behara et al. 1995).

Companies can change their corporate structure through acquisitions, divestitures and mergers. When such major changes occur in a company, the overall business strategy is likely to be realigned. To be successful executives must ensure the fit between the environment and the company strategy (Wiersema et al. 1993). IS managers are interested in keeping the IS structure aligned with the corporate structure (Davis 1996), and thus, changes to the IS department are likely to take place when the organization is restructured. An organization can also undergo changes in the internal structure or power shifts within organization that can result in a new approach to the management of IS. New management in charge of IS or a new CEO can have a completely different perspective on the outsourcing of IS products and services. Managers' choices influence organizational processes, structures, technology and resources (Rajagopalan et al. 1996). As a result, internal and external structural changes in the client company may lead to the

reassessment of the outsourcing arrangement, and return of the previously outsourced IS services and products back in-house.

7 Strategic Considerations: Illustration

One of the most frequent motives for backsourcing involves redefinition of the importance of IS and change in the IS requirements and the context. For instance, Sears' U.K-based operations canceled a £344 million 10 year outsourcing contract with Andersen Consulting after just 17 months. It took back 500 employees and chose the selective outsourcing route. In the new arrangement, the internal staff focused on new application development, whereas the provider managed more mundane functions (Lacity et al. 2000; Lacity et al. 2001). In another case, East Midlands Electricity cancelled its 12-year contract with Perot Systems five years early. The management of the company had redefined the importance of IS to its business and decided to rebuild the in-house skills (Kern et al. 2001).

Another reason for terminating outsourcing contracts and taking the function back in-house is the loss of control over the direction of IS. For example, Australian-based financial services giant MLC brought back in-house management of its application development and maintenance after renegotiating its outsourcing agreement with IBM Global Services (Australia). MLC felt they needed to have control over the IS enabled business solutions (Lacity et al. 2001). When Oxford Health Plus ended its relationship with CSC in 2002, it integrated IS functions to deploy technology solutions in a more flexible and timely manner to meet its business goals (Bushell 2003). As the business needs of Oxford changed, its IS needs changed as well. Backsourcing was the only way to regain control over the entire IS function and to use technology effectively.

Some organizations may decide to bring IS back in-house in response to structural business changes such as acquisitions, divestitures and mergers. The previously existing arrangements within the old companies may not meet the needs of the new organization. When Suncorp Group, Australia, acquired GIO, the decision was made to transfer GIO's IS functions in-house as the best way to maintain a competitive edge and achieve the benefits of platform synergies (Bushell 2003). In a similar context, Halifax Bank of Scotland (HBOS) canceled its outsourcing contract with IBM and Xansa, when Bank of Scotland and Halifax Building Society merged. The requirements of the business changed and HBOS took the outsourced processes back in-house (Bushell 2003).

8 Relationship Considerations

Both the economic perspective and the strategic perspective ignore the tremendous influence prior relationships may have on future sourcing decisions (Lee et al. 2001). Thus, examining the relationship between the client and provider by applying interorganizational theory and marketing channels literature completes our multifaceted framework and provides important insight into the role of relationship success in backsourcing. Interorganizational relationships theory has been recently applied to better understand the relationship advantage in IS outsourcing (Kern et al. 2001; Kern et al. 2002), while marketing channels literature is used to analyze the exchange relationships (Alajoutsijarvi et al. 2000; Bolton 1998; Dwyer et al. 1987; Ping 1995) and consider factors involved in the termination of the channels relationship (Ping 1993; Ping 1995; Ping 1999; Tahtinen et al. 2002).

Managing a relationship between the client and the provider is a great challenge. A good client-provider relationship is critical for long-term success of outsourcing arrangement (Grover et al. 1996; McFarlan et al. 1995; Willcocks et al. 1998), and it is an important reason for continuing contractual activities. Goal conflict, or the extent to which the goals of the outsourcing company and its provider differ, plays an important role in the development of the relationship between the client and the provider (Anderson et al. 1989). The client enters the IS outsourcing relationship not only to receive IS products and services that are cost effective, but also value-adding to its company. The provider strives to deliver the required products and services utilizing economies of scale realized by servicing multiple clients. Sometimes, the provider is not ready to adjust to the needs of an individual client, and is only interested in delivering commodity services. At such a time, the goals of the client and the provider may diverge. When goals do not coincide and dissatisfaction develops, the relationship may come to an end with the client withdrawing and taking the outsourced activities back in-house.

Questionable provider service is a concern in 25% of outsourcing relationships (Lackow 2001). Service quality involves the conformance of the service delivered by the provider to the requirements of the client (Whitten 2003). Continued service performance below the expectations puts a negative strain on the relationship between the client and the provider. When the quality declines the client may consider exiting the relationship (Hirschman 1970). Low service performance leads not only to poor client satisfaction with outsourcing relationship but also can be a precursor to backsourcing.

The client's satisfaction with IS outsourcing reflects a positive affective state based on the outcomes obtained from the relationship with the IS services provider (Ganesan 1994) and plays an important role in the outsourcing relationship. When the client is overall satisfied with the services, the outsourcing contract with the provider is perceived as more valuable (Ping 1995). Interorganizational trust is

built over time as the organization engages in various activities. Satisfaction with the outsourcing deliverables and the overall relationship leads to the development of trust. Over time, as the provider demonstrates reliability, the consistent performance contributes to trust building (Hart et al. 1998). Therefore, as the outsourcing contract progresses, termination of the relationship is unlikely where the client's organization has high trust in the provider. But if the trust in the provider is low and the satisfaction with the outsourcing relationship is below expectation, the client may consider backsourcing.

Dissolution of the relationship begins when one party evaluates its dissatisfaction with the other party (Dwyer et al. 1987). When problems arise in the relationship, clients may respond differently to those issues. Some customers voice their concerns immediately to remedy the situation and avoid termination of the relationship. Others remain silent hoping things will get better. Voice behavior corresponds to any attempt to change, rather than to escape from, an objectionable state of affairs, either by appealing to the management directly in charge or to higher authority (Hirschman 1970). Clients use voice to attract attention and to warn the provider about the decline in performance or any other relationship issues. It is used as an alternative to an immediate termination of the relationship in the hope that the relationship can be salvaged. In certain situations, client voice behavior signals to the provider the intent to terminate the relationship.

9 Relationship Considerations: Illustration

A frequent problem that arises in outsourcing relationships and may lead to backsourcing is the questionable performance on the part of the provider. The Xerox contract with EDS is an example of such a difficulty. Xerox had undergone selective backsourcing in 1998 by adjusting its exposure to its main provider, EDS. While the deal with EDS was often considered as strategically successful, at the operational level service performance remained far below expectations in many areas such as telecommunications and laptop services. Because of the low level of service performance, Xerox decided to withdraw the services and support for laptops from EDS (Kern et al. 2001). In another case, Washington Mutual took back help desk, network management, architecture and strategy work while restructuring the contract with IBM Global Services (IGS). Calls to the help desk were not answered in timely manner, IT was getting bad reputation and IT service levels were low under IGS management. Backsourcing was done not for the costs reasons but to improve service levels and offer additional value to the customers (Overby 2003b).

In an attempt to save money Salvation Army outsourced a critical business application development project. The provider initially made a lot of promises, yet after several moths of stagnation decided to change the direction of the project.

The goals of Salvation Army and the provider were misaligned. Salvation Army ended up with no developed application and more than U.S. $1 million in expenses. A lawsuit followed the conflict and eventually the application development was brought back in-house (Margolis 1992).

10 Triangulation of Factors

Theoretical development above argues that a multitude of factors can impact backsourcing. How do all of those factors interplay and which ones drive the backsourcing process? Each perspective described above has a unique emphasis that contributes to the understanding of the sourcing relationship in its entirety (Kern et al. 2001). Relationship issues that arise in the outsourcing contract could be the ones that make or break the deal. Indeed, poor quality of the outsourced service, or even non-performance would eventually necessitate a resolution. Information systems support the organization, and poor quality of IS undermines organizational functions. Yet relationship issues by themselves may not entirely justify bringing previously outsourced functions back in-house. These factors need to be buttressed by either economic or strategic justifications to make the new arrangement effective.

On the other hand, strategic changes in organization may necessitate shifts in make-or-buy arrangements. But the decision to backsource IS services is a complex one and the process of transitioning IS functions back in-house could be costly and difficult. There should be significant benefits to the company before backsourcing can be implemented. Thus, economic factors would have to be considered together with the strategic factors before transitioning to backsourcing. Similarly, pursuing only economic benefit in backsourcing may not be aligned with the organizational strategy, or may result in decreased quality of IS services. Consequently, as companies reevaluate their outsourcing agreements, multiple factors are always considered before the final decision is made.

11 Multiple Factor Considerations: Illustration

In many cases companies undergo backsourcing for a combination of reasons including economic, strategic and relationship. For example, Continental Airlines was in financial distress when it outsourced nearly all of its IS to EDS with the cost savings as the primary motivation. Over time tensions developed between Continental and EDS's staff regarding expectations of what services should be provided according to the agreement. At the same time Continental recognized the potential value that IT could bring to its business and was trying to improve its

operations using the new technologies such as online ticketing. Unfortunately, EDS did not have the capabilities and skills to support the new needs of the airline. As a result, four years after the signing of the contract, Continental Airlines reconsidered EDS's particular competencies, strategic implications of each IS and business function as well as relationship conflicts, and brought much of its IS back in-house, arriving at a 50-50 outsourced-insourced equilibrium (Buxbaum 2002; Christensen et al. 1996). This decision was driven by strategic and relationship considerations such as tension over the contract with the provider and changes in the importance and role of IS.

Bank One also decided to backsource for a combination of reasons which included strategic and economic. While not dissatisfied with either outsourcing provider, it cancelled its outsourcing arrangements with IBM and AT&T Solutions to cut operating costs, improve customer service and be able to quickly implement new products and services. Bank One changed both its philosophy of how it wanted to do business and the position of IS in its business. As the result of the backsourcing the bank expected to cut U.S. $200 million in annual operating costs (Hoffman 2003).

12 Conclusion

While theoretical frameworks and research on IS outsourcing abound, theory to understand IS backsourcing issues is lacking. There are, however, more and more real life examples of both total and selective backsourcing found in both practitioner and academic literature. Companies seem to backsource for different reasons. All of this existing anecdotal evidence can be grouped into several general trends in the backsourcing scenarios (Table 3). The theoretical contribution of this framework of factors involved in backsourcing considerations stems from integrating existing theories. While backsourcing and outsourcing decisions often consider economic factors, backsourcing decisions also include a variety of strategic factors, as well as prior experience and performance in the outsourcing relationship. One of these factors, either strategic, economic or relationship, seems to initiate the backsourcing process. Yet other factors, often in combination, are taken into consideration before the transition takes place. Even though there are multiple reports of backsourcing activity, taking outsourced functions back in-house can be a time consuming and expensive proposition (Christensen et al. 1996). Issues of intellectual property ownership, changes to the IT structure (Doig et al. 2001), recruitment of skillful and knowledgeable IS personnel and large switching costs (Kern et al. 2002) can complicate the transition. Thus, it is crucial that the companies undergo a thorough evaluation of the existing outsourcing contract before pursuing the transition to backsourcing. Better understanding of backsourcing and its theoretical underpinnings will lead to

better backsourcing strategies and also better business outcomes for organizations that return their previously outsourced IS functions back in-house.

Table 3: Illustrations of Backsourcing Antecedents

Examples	*Key Motives*	*Category*
Farmers Group	Escalating outsourcing costs	Economic
LSI Logic Corp ABB Power	Implement same effective cost strategies internally	
Sears in U.K. East Midlands Electricity	Redefinition of the role of IS	Strategic
MLC, Australia Oxford Health Plans	Loss of control over IS	
Suncorp Group, Australia Halifax Bank of Scotland	Structural changes in organization	
Xerox Washington Mutual	Poor service quality Dissatisfaction with the provider	Relationship
Salvation Army	Misaligned Goals	
Bank One	Change in the importance of IS Cost savings	Combination of Factors
Continental Airlines	Relationship conflict Change in the importance of IS	

Understanding the underlying reasons for taking the IS function partially or completely back in-house can provide managers with better decision tools when reviewing the outsourcing contract as termination nears or as major environmental changes occur. Not all outsourced functions may be suitable for in-house operations. Further examination of the reasons underlying the backsourcing decision identifies a potential framework for future assessments, and distinguishes factors most relevant for the backsourcing decision. The analysis of the circumstances and decisions that lead to backsourcing should be beneficial for both academics and practitioners.

References

Alajoutsijarvi, K., Moller, K., and Tahtinen, J. "Beautiful Exit: How to Leave Your Business Partner," *European Journal of Marketing* (34:11/12) 2000, pp 1270-1289.

Anderson, E., and Weitz, B. "Determinants of Continuity in Conventional Industrial Channel Dyads," *Marketing Science* (8:4), Autumn 1989, pp 310-323.

Ang, S., and Cummings, L.L. "Strategic Response to Institutional Influences on Information Systems Outsourcing," *Organization Science* (8:3), May-June 1997, pp 235-256.

Ang, S., and Straub, D. "Production and Transaction Economies and IS Outsourcing: A Study of the U.S. Banking Industry," *MIS Quarterly*), December 1998, pp 535-553.

Behara, R.S., and Gundersen, D.E. "Trends in Information Systems Outsourcing," *International Journal of Purchasing & Materials Management* (31:2), Spring 1995, pp 45-51.

Benko, C. "If Information System Outsourcing is the Solution, What is the Problem?," *Journal of Systems Management*, November 1992, pp 32-35.

Blackmore, D., De Souza, R., Young, A., Goodness, E., and Silliman, R. "Forecast: IT Outsourcing, Worldwide, 2002-2008 (Update)," Gartner, Inc., p. 6.

Bolton, R.N. "A Dynamic Model of the Duration of the Customer's Relationship with a Continuous Service Provider: The Role of Satisfaction," *Marketing Science* (17:1) 1998, pp 45-65.

Bushell, S. "Inside Moves," in: *CIO*, 2003.

Buxbaum, P. "Bringing IT Back Home," *Computerworld*, July 29, 2002, p 38.

Christensen, N., and Pearlson, K. "Continental Airlines: Outsourcing IT to Support Business Transformation," 1996.

Clark, T.D., Zmud, R.W., and McCray, G.E. "The Outsourcing of Information Services: Transforming the Nature of Business in the Information Industry," *Journal of Information Technology* (10) 1995, pp 221-237.

Davis, K.J. "IT Outsourcing Relationships: An Exploratory Study of Interorganizational Control Mechanisms," in: *Graduate School of Business*, Harvard University, Cambridge, MA, 1996, p. 310.

Dibbern, J., Goles, T., Hirschheim, R., and Jayatilaka, B. "Informations Systems Outsourcing: A Survey and Analysis of the Literature," *The DATA BASE for Advances in Information Systems* (35:4), Fall 2004, pp 6-102.

Doig, S.J., Ritter, R.C., Speckhals, K., and Woolson, D. "Has Outsourcing Gone Too Far?," *The McKinsey Quarterly* (4) 2001, pp 25-37.

Dwyer, F.R., Schurr, P.H., and Oh, S. "Developing Buyer-Seller Relationships," *Journal of Marketing* (51), April 1987, pp 11-27.

Fama, E.F., and Jensen, M.C. "Agency Problems and Residual Claims," *Journal of Law and Economics* (26), June 1983, pp 327-349.

Ganesan, S. "Determinants of Long-Term Orientation in Buyer-Seller Relationships," *Journal of Marketing* (58), April 1994, pp 1-19.

Grover, V., Cheon, M.J., and Teng, J.T.C. "A Descriptive Study on the Outsourcing of Information Systems Functions," *Information & Management* (27:1), July 1994, pp 33-44.

Grover, V., Cheon, M.J., and Teng, J.T.C. "The Effect of Service Quality and Partnership on the Outsourcing of Information Systems Functions," *Journal of Management Information Systems* (12:4), Spring 1996, pp 89-116.

Gurbaxani, V., and Whang, S. "The Impact of Information Systems on Organizations and Markets," *Communications of ACM* (34:1) 1991, pp 59-73.

Hart, P.J., and Saunders, C.S. "Emerging Electronic Partnerships: Antecedents and Dimensions of EDI Use from the Supplier's Perspective," *Journal of Management Information Systems* (14:4), Spring 1998, pp 87-111.

Hirschman, A.O. *Exit, Voice and Loyalty: Responses to Decline in Firms, Organizations and States* Harvard University Press, Cambridge, Mass., 1970.

Ho, V.T., Ang, S., and Straub, D. "When Subordinates Become IT Contractors: Persistent Managerial Expectations in IT Outsourcing," *Information Systems Research* (14:1), March 2003, pp 66-86.

Hoffman, T. "'In' sourcing saves utility $600,000," in: *Computerworld*, 1993, pp. 65-66.

Hoffman, T. "All or Nothing," in: *Computerworld*, 2003.

Hu, Q., Saunders, C., and Gebelt, M. "Research Report: Diffusion of Information Systems Outsourcing: A Reevaluation of Influence Sources," *Information Systems Research* (8:3), September 1997, pp 288-301.

Kern, T., and Willcocks, L.P. *The Relationship Advantage. Information Technologies, Sourcing, and Management* Oxford University Press, Oxford, 2001.

Kern, T., and Willcocks, L.P. "Exploring Relationships in Information Technology Outsourcing: the Interaction Approach," *European Journal of Information Systems* (11) 2002, pp 3-19.

King, W.R., and Malhotra, Y. "Developing a Framework for Analyzing IS Sourcing," *Information & Management* (37) 2000, pp 323-334.

Lacity, M.C., and Hirschheim, R. *Information Systems Outsourcing* John Wiley & Sons Ltd, Chichester, England, 1993.

Lacity, M.C., and Willcocks, L.P. "Relationships in IT Outsourcing: A Stakeholders Perspective," in: *Framing the Domains of IT Management. Projecting the Future ... Through the Past,* R.W. Zmud (ed.), Pinnaflex Education Resources, Inc., 2000.

Lacity, M.C., and Willcocks, L.P. *Global Information Technology Outsourcing. In Search of Business Advantage* John Wiley & Sons, Ltd, Chichester, England, 2001.

Lacity, M.C., Willcocks, L.P., and Feeny, D.F. "IT Outsourcing: Maximize Flexibility and Control," *Harvard Business Review* (73:3), May-June 1995, pp 84-93.

Lackow, H.M. "IT Outsourcing Trends," The Conference Board, New York, NY, p. 15.

Lee, J.-N., Huynh, M.Q., Chi-wai, K.R., and Pi, S.-M. "The Evolution of Outsourcing Research: What is the Next Issue?," Hawaii International Conference of Information Systems, 2000.

Lee, J.-N., Huynh, M.Q., Kwok, R.C.-w., and Pi, S.-M. "Current and Future Directions of IS Outsourcing," 2nd International Conference of Outsourcing of Information Services, Castle of Thurnau, Germany, 2001.

Logan, M.S. "Using Agency Theory to Design Successful Outsourcing Relationships," *The International Journal of Logistics Management* (11:2) 2000, pp 21-32.

Loh, L., and Venkatraman, N. "Diffusion of Information Technology Outsourcing: Influence Sources and the Kodak Effect," *Information Systems Research* (3:4) 1992, pp 334-358.

Margolis, N. "All Together Now," in: *All Together Now*, 1992, pp. 148-151.

McFarlan, F.W., and Nolan, R.L. "How to Manage an IT Outsourcing Alliance," *Sloan Management Review* (36:2), Winter 1995, pp 9-23.

Overby, S. "Walk Like an Outsourcer," in: *CIO*, 2003a.

Overby, S. "When the Mission Changes, IT Does Too," in: *CIO*, 2003b.

Ping, R.A. "The Effects of Satisfaction and Structural Constraints on Retailer Exiting, Voice, Loyalty, Opportunism and Neglect," *Journal of Retailing* (69:3), Fall 1993, pp 320-352.

Ping, R.A. "Some Uninvestigated Antecedents of Retailer Exit Intention," *Journal of Business Research* (34) 1995, pp 171-180.

Ping, R.A. "Unexplored Antecedents of Exiting in a Marketing Channel," *Journal of Retailing* (75:2) 1999, pp 218-241.

Poppo, L., and Zenger, T. "Testing Alternative Theories of the Firm: Transaction Cost, Knowledge-Based, and Measurement Explanations for Make-or-Buy Decisions in Information Services," *Strategic Management Journal* (19) 1998, pp 853-877.

Premkumar, G., and King, W.R. "An Empirical Assessment of Information Systems Planning and the Role of Information Systems in Organizations," *Journal of Management Information Systems* (9:2), Fall 1992, pp 99-125.

Quinn, J.B. "Strategic Outsourcing: Leveraging Knowledge Capabilities," *Sloan Management Review*), Summer 1999, pp 9-21.

Quinn, J.B., and Hilmer, F.G. "Strategic Outsourcing," *Sloan Management Review*), Summer 1994, pp 43-55.

Rajagopalan, N., and Spreitzer, G.M. "Toward a Theory of Strategic Change: A Multi-lens Perspective and Integrative Framework," *Academy of Management Review* (22:1), January 1996, pp 48-79.

Scardino, L. "Sourcing in 2003; Another Year of "Cost is King"," Gartner, Inc.

Slaughter, S., and Ang, S. "Employment Outsourcing in Information Systems," *Communications of the ACM* (39:7), July 1996, pp 47-54.

Smith, M.A., Mitra, S., and Narasimhan, S. "Information Systems Outsourcing: A Study of Pre-Event Firm Characteristics," *Journal of Management Information Systems* (15:2), Fall 1998, pp 61-93.

Tahtinen, J., and Halinen, A. "Research on Ending Exchange Relationships: a Categorization, Assessment and Outlook," *Marketing Theory* (2:2) 2002, pp 165-188.

Walker, G., and Weber, D. "A Transaction Cost Approach to Make-or-Buy Decisions," *Administrative Science Quarterly* (29:3), September 1984, pp 373-391.

Wang, E.T.G. "Transaction Attributes and Software Outsourcing Success: An Empirical Investigation of Transaction Cost Theory," *Information Systems Journal* (12:2), April 2002, p 153.

Whitten, G.D. "An Examination of Information Systems Service Quality Measurement: The Contribution of the SERVQUAL Instrument from the Marketing Literature," Americas Conference on Information Systems, Tampa, FL, 2003.

Wiersema, M.F., and Bantel, K.A. "Top Management Team Turnover as an Adaptation Mechanism: The Role of teh Environment," *Strategic Management Journal* (14:7), October 1993, pp 485-504.

Willcocks, L.P., Fitzgerald, G., and Lacity, M.C. "To Outsource IT or not? Recent research on economics and evaluation practice," *European Journal of Information Systems* (5) 1996, pp 143-160.

Willcocks, L.P., and Lacity, M.C. "The Sourcing and Outsourcing of IS: Shock of the New?," in: *Strategic Sourcing of Information Systems: Perspectives and Practices,* L.P. Willcocks and M.C. Lacity (eds.), John Wiley and Sons, New York, 1998.

Williamson, O. "The Economies of Organizations: The Transaction Cost Approach," *American Journal of Sociology* (87:3) 1981, pp 548-577.

Williamson, O. *The Economic Institutions of Capitalism* Free Press, New York, 1985.

Williamson, O. "Transaction Cost Economics," in: *Handbook of Industrial Organization,* R. Schmalensee and R. Willing (eds.), Elsevier Science, Amsterdam, 1989, pp. 136-182.

IT Sourcing a Dynamic Phenomena: Forming an Institutional Theory Perspective

Bandula Jayatilaka

School of Management, Binghamton University SUNY, Binghamton, NY 13902, USA

1 Introduction

1.1 Motivation

Research as well as industry surveys have shown that IS outsourcing is not a static phenomenon and success of it is not a definitive outcome. A significantly large number of contract restructurings and terminations occur (Bothik 2001; Kaplan 2003). In general, companies shift IS sourcing due to lack of success or due to newly emerging conditions and needs. Therefore, improved understanding of the factors influencing such shifts in companies' outsourcing arrangements may become useful in making better decisions and in developing the IS outsourcing research stream. Specifically, I raise the following research questions at this stage. What are the concepts relevant for explaining the changes in sourcing and theoretical foundations that can explain the processes and antecedents to change? Review of past IS outsourcing research shows that there is a dearth of research on the change or continuation of IS outsourcing arrangements (Dibbern, Goles, Hirschheim, Jayatilaka 2004). Nam, Rajagopalan, Rao, and Chaudhury, (1996) investigated the determinants that can lead to continuation of IS outsourcing, which they referred to as a second-level decision to outsource and treated the continuation as an isolated static phenomenon and did not view it as a change process.

Although earlier research has investigated IS outsourcing as a static phenomenon, its dynamic nature can be seen from industry reports. These reports confirm the importance of focusing on changes in IT outsourcing. For example, one survey shows that a significant number of the clients may switch vendors due to dissatisfaction (Perkins 2003). Furthermore, surveys show that IS outsourcing changes occurs at different levels. At the IS industry level, considering overall outsourcing contracts, changes are evident in monetary values of overall IS outsourcing contracts awarded. Examination of the events subsequent to the initial IS outsourcing reveals that different types of changes have taken place in

outsourcing arrangements of some firms. For example, companies seemed to be leaning towards shorter IS contracts (Cole-Gomolski, 1999b). At an operational level, demand was increasing for IS services in emerging technical areas and operational activities. Companies sought outsourcing arrangements for new technologies such as storage management and Windows NT (Lattig, 1999), and web technologies, which are changing the face of outsourcing contracts (Cole-Gomolski 1999a). Furthermore, new types of arrangements in obtaining IS services, such as out-tasking (Lais, 1999) and business process outsourcing have emerged. Discussions with experts in the industry revealed that major vendors are also changing their portfolio of services offered, and client companies are opting for more service-level type agreements. As examples of vendor changes, the field experts frequently cited the turning over of network activities to third parties.

Not only are new technologies and services emerging but also business practices and competitive environments are undergoing transitions and transformations. These shifts in environments result in uncertainty that may render outsourcing arrangements unsuccessful. At the industry level, the types of outsourcing contracts and service companies have evolved from the facilities management arrangements that took place in the early days (Currie and Seltsikas 2001). Assuming a perspective that outsourcing is a transaction bound by contracts, researchers have investigated contract and relationship management (Currie 1996, Marcolin and McLellan 1998). Some suggest flexibility and short-term contracts as solutions to problems caused by uncertainty and fluidity (Fitzgerald and Willcocks 1994). On the contrary, other researchers have found that fixed contracts yield more successful outcomes than other types of contracts (Lacity and Willcocks 1995). These contradictions may have arisen due to the limitations imposed by the assumption that IS is a commodity and the activity can be governed successfully by a contract or by governing the vendor-client relationship. The pervasive nature of IS in organizations and the transitory nature of businesses necessitate a less restrictive perspective in examining IS outsourcing.

This paper develops definitions and concepts that will be useful for explaining Information Systems sourcing changes and the factors influencing these shifts. Furthermore, this paper develops a theoretical framework suitable for explaining the phenomena by analyzing nine sourcing cases through the lens of institutional theory.

1.2 Organizational Change in IS Research

When we consider the IS field, the fundamental focus of systems development is aimed at organizational change. In addition, we can consider the impact of organizational change on IS development and other IS activities. A brief look at research on organizational change in the IS field indicates the necessity for

examining different theoretical perspectives suitable for examining issues on IS sourcing changes. Examining the research on IT and organizational change, Markus and Robey (1988) have emphasized the relevance of research on IT and organizational change. Later, few other important works were done that examined the influence of IT on structures (Orlikowski 1996), and social interactions and technology (DeSanctis & Poole 1994). Taking an action research approach, Clark, Cavanaugh, Brown, and Sambamurthy (1997) discussed the change readiness of an IT organization, and Mason, McKenney, and Copeland (1997) developed theory on changes that occurred in the IT department at Bank of America. This previous research examined the role of relationships of technology and social interactions in organizational change. Past research on organizational change in IS field did not present adequate explanations for the IS sourcing change phenomena mainly because the latter involves spanning organizational boundaries and external environmental factors. This difference can be seen from the previous research on change aspects of IS development as well. Markus and Benjamin (1996) views importance of change management as necessary for in-house development due to the IS work where loyalty and insider knowledge is necessary. Therefore, their (Markus and Benjamin 1996) need for change management excludes market use for IS activities. However, IS sourcing can change, and there is a necessity to develop theories explaining such changes.

Research on IS and organizational change reveals multiple causes for organizational change due to IS. Markus and Robey (1988) presented a framework consisting of technology imperative and organizational imperative for change. Shifts in IS sourcing could be due to diverse reasons. Based on the review of past IS outsourcing research, some of the determinants of the initial outsourcing could act as drivers for change. On the other hand, unsuccessful outcomes or emergent business conditions could lead to IS sourcing options sought by companies.

1.3 The Theoretical Perspective

Organizational change processes can originate primarily internally, externally, or because of interactions between internal prerogatives and the external environment. The institutional perspective assumes the primacy of institutional processes in shaping change. Institutional factors originate in an organization's environment (Greenwood and Hinnings 1996), and they could trigger change processes such as coercive, mimetic or normative processes in companies (DiMaggio and Powell 1983). Influences of coercive processes are more apparent and one past IS outsourcing research has examined the direct influence of coercive forces (Ang and Cummings 1997). However, examination of institutional theory will enable inference of institutional factors and processes other than coercive processes from past IS outsourcing literature. Sourcing changes are structural ones that are influenced by these institutional factors and processes originating in them. It could be argued that management in a company has a determining role to

play in changing the organizations (Chandler 1962, Child 1972, Burgeiosis 1984). While the roles of the internal factors are not ignored, this paper focuses on the primacy of institutional factors. Because, institutional perspective provides a theoretical lens to examine the interactions between the external and internal factors, IS sourcing change process and to provide some predictability to the courses of actions taken by companies with regard to IS sourcing.

A fundamental first step that is required for studying a change process is to gain a clear understanding of the constituents of the phenomenon of change. Specifically, the phenomena of outsourcing and IS sourcing in general consists of many 'dimensions' that define a specific outsourcing occurrence. Therefore, when we discuss outsourcing changes, it is necessary to understand 'what' in outsourcing changes. The following section presents the necessary definitions and concepts relevant to IT outsourcing. The third section discusses the institutional perspective and applies it to IT outsourcing. The fourth section presents the method adopted and a summary analysis of data leading to a theoretical synthesis.

2 Outsourcing Changes - Definitions and Possible Change Processes

2.1 Basic Definitions

In general, IS activities related to a company would entail IS services received by the users, processes and the resources necessary for production of these services, and essential management component for efficient management of the resources. Sourcing in general is an ongoing activity since the company has to obtain the required IS services (either from external vendors or from an internal IS department). Therefore, it is not limited to a 'one time transformation' of handing over the assets to third parties. Some of the definitions given in research literature looks at only some aspects of the phenomena and Dibbern et al. (2004) covers many different definitions. Considering all of the above, the following definition of sourcing, which can serve as a basis for both in- and outsourcing, can be stated as follows.

Definition 2.1

Sourcing *- sourcing refers to the organizational arrangement instituted for obtaining IS services* ***and*** *for the management of resources and activities required to produce the services.*

The above definition does not differentiate between the situations in which a company obtains the required IS services through an internal IS department and

when it obtains IS services from an external vendor. In general, two variants of sourcing are practiced; i.e. a company may obtain services internally or may obtain them from external vendors. Therefore, the following two definitions can be stated.

Definition 2.2

Outsourcing - *Obtaining IS services through* ***external*** *organizations that own some or all the necessary resources and where control and* ***management*** *of the resources and activities, reside.*

Definition 2.3

Insourcing - *Obtaining IS services through* ***internal*** *organizations that own some or all the necessary resources and where control and* ***management*** *of the resources and activities reside.*

This definition of outsourcing excludes situations where a company utilizes external IS resources while managing them internally. For example, according to the definitions 2.1 and 2.2 contract programming and equipment rental cannot be classified as outsourcing since the effective management of these resources in producing the IS services lies within the company. Furthermore, definitions 2.2 and 2.3 refer to sourcing activities in general and do not specify the extent of outsourcing. In reality, as discussed in section 2.1.3, companies outsource only some of the IS activities and use insourcing for the rest of required activities. Therefore, these definitions will be further extended to define total outsourcing (cf. definition 2.5), total insourcing (cf. definition 2.6) and selective sourcing (cf. definition 2.7).

2.1.1 Outsourcing Arrangements

The services obtained and the instituted arrangements are two essential components of the definitions presented earlier. Furthermore, these two components have implications for flexibility and change of the IS sourcing arrangements. Prior to discussing IS outsourcing change, it is necessary to review the past research on the functions being outsourced and the vendor-client relationships or the contracts.

Although IS outsourcing is often used in reference to outsourcing of IS activities in total, IS functions are also selectively outsourced by companies (Apte and Mason 1995, Sridhar and Balachandran 1997, Lacity and Willcocks 1998). Such selective outsourcing provides more flexibility, and as a company's strategies shift they may find it necessary to change their outsourced IS functions selectively.

A study that covered three countries (i.e., Finland, Japan and the USA) showed that some IS functions are more outsourced compared to the others (Apte, Sobol, Hanaoka, Shimada, Saarinen, Salmela and Vepsalainen 1997). Apte et al. (1997) considered the IT functions as software development and maintenance, data

communications network, support operations, disaster recovery, data center operations, integrated system development, and training and back-office clerical tasks. Grover, Cheon and Teng (1994) studied the relationships between the extent of outsourcing and business strategies. Grover et al. (1994) determined the extent of outsourcing by considering different IS functions and overall outsourcing. They (Grover et. al. 1994) categorized the functions into applications development and maintenance, systems operations, telecommunications management and maintenance, end-user computing, systems planning and management. While the above two studies explicitly classified the IS functions, Lacity and Willcocks (1998) compared the success of selectively outsourcing and outsourcing all IS activities. Selective outsourcing can lead to a greater degree of success since selective outsourcing provides more flexibility as well as more control over the vendors(Lacity and Willcocks 1998). Selection of the functions to be outsourced can be done based on the role of IS functions within the business (Lacity and Willcocks 1996, Lacity et. al 1996, Quinn and Hilmer 1994). Then the overall outsourcing arrangements of a company would change as the business change (Gersick 1994, Rajagopalan and Speitzer 1996). Not only the business but also the values placed by managers on other criteria also have an influence on the type of functions outsourced (Sobol and Apte 1995). According to a survey, the different priorities of IS management caused outsourcing of some functions more likely to occur (Sobol and Apte 1995). The functions outsourced in turn could have a deciding affect on outsourcing relationships (Gallivan and Oh 1999). In addition to the IS function, the number of vendors and the clients could have an impact on an outsourcing relationship.

Four types of vendor-client arrangements are possible, i.e., single vendor - single client, single vendor - multiple clients, multiple vendors - single client and multiple vendor - multiple clients. Single vendor - single client relationships are the simplest and they are referred to as simple dyadic relationships (Gallivan and Oh 1999). These simple dyadic relationships could become risky due to vendor opportunism and some companies form relationships with multiple vendors in order to alleviate the risks (Cross 1995, Chaudhury, Nam and Rao 1995). On the other hand, several client companies may have the same need that could be met more economically by forming an alliance when obtaining services from a single vendor.

Following Gallivan and Oh (1999) terminology, a relationship formed by many clients with a single vendor will be called ***co-sourcing***[1].

It is not unusual for companies to form co-sourcing alliances, where multiple clients forming relationships with a single vendor, due to many companies in the

[1] Co-sourcing defined here is a different phenomenon than the one defined by Kaiser and Hawk (2004). Kaiser and Hawk (2004) define cosourcing as outsourcer and client melding their IT competencies to accomplish client's work

same industry or related industries having similar needs (Sharma and Yetton 1996). In addition, several client companies may form an outsourcing relationship with more than one vendor. Gallivan and Oh (1999) presented an example of seven insurance companies holding contract negotiations with two vendor companies.

Following the Gallivan and Oh (1999) terminology, a relationship formed by many clients with many vendors will be called ***complex relationship****.*

Although co-sourcing and complex relationships occur, for simplicity only single vendor relationships and multi-vendor relationships of a single client may be considered in this study. On the other hand, for parsimony a company in co-sourcing and complex relationships can be perceived as a relationship between a single client and a single vendor, and single client and multiple vendors. Therefore, considering only the number of vendors as the variant in a relationship the following definition can be given.

Definition 2.4

Mode of outsourcing *– The number of vendors/sources from whom a company obtains its IS services*

In addition to the mode of outsourcing, the activities outsourced by companies may change. As found earlier (Lacity and Willcocks 1998), some companies do selective outsourcing in order to have more flexibility in IS. A company might have outsourced all of its IS activities and might decide to bring some of the activities in-house or a company might have outsourced only part of its IS activities and later decide to outsource all its IS activities. Furthermore, the amount of IS budget spent on outsourcing will be an indicator of the number of outsourced IS activities or the extensiveness of outsourcing. Therefore, the following definition can be stated.

Definition 2.5

Degree of outsourcing *– The percentage of the total IS budget spent on outsourcing. This is in the range of 0% to 100%.*

A company may outsource all of its IS activities, some of its activities or keep all IS activities in-house. Hence, the possible three degrees of outsourcing are: (i) total outsourcing (ii) selective sourcing (iii) insourcing

Ideally, total outsourcing will occur when a company obtains all (or 100%) of IS services from external vendors. Realistically, some companies retain at least a very small portion of IS managerial and technical activities in-house, yet they would claim that all services are obtained from external sources. Therefore, to be more pragmatic 'total outsourcing' is defined as when a company obtains more than 80% of its IS services from external sources. This is also in accordance with the prior research (Lacity and Willcocks 1995). Similarly, some companies may perform almost all of its IS activities internally while purchasing a very small

portion of services externally. Therefore, to be consistent with the definition of the total outsourcing, insourcing is defined as when a company obtains more than 80% of its IS services internally.

Definition 2.6

Total outsourcing *– occurs when a company spends 80% or more of its IS budget to obtain IS services from external vendors.*

Definition 2.7

Total insourcing *– occurs when a company spends 80% or more of its IS budget to obtain IS services from an internal IS department.*

Definition 2.8

Selective sourcing *– occurs when a company spends less than 80% and at least 20% of its IS budget to obtain IS services from external vendors.*

In addition to the mode of outsourcing, the type of relation formed with the vendor is an integral part of an outsourcing arrangement. The type of relationship between vendor and clients and the formal agreements would influence the flexibility of an outsourcing arrangement (Gallivan and Oh 1999). The types of relationships would enhance flexibility and hence influence outsourcing changes. Some companies form strategic alliances with the IS vendors, while some engage in contractual relationships at the service level. Researchers (Lacity and Willcocks 1998, Saunders et al. 1997) have investigated different types of contracts. Open-ended contracts where the terms, service levels and prices were not clearly specified can cause more uncertainty. Hence, fixed-term and fixed-price contracts are preferred over the open-ended contracts. Fixed-price contracts need priori knowledge of the exact IS needs. However, companies may need to shift their strategies and business processes requiring them to alter their IS needs accordingly. Therefore, it is necessary to define the outsourcing contracts and relationships anticipating change (DiRomauldo and Gurbaxani 1998). Citing a specific case, Lacity et al. (1995) shows that changing contracts as new needs arise can be costly since some contracts may contain clauses that would incur additional costs when changes are made. Although following new directions and new processes can become costly with existing contracts, it may be possible to draw new contracts when necessary. Whang (1992) showed theoretically that contracting parties should have contingency plans in the event of failures. Based on case studies, Saunders et al. (1997) prescribe inclusion of a re-negotiation option in the contract so the contract can be re-negotiated without incurring costly payments to the vendor. Using a quantitative approach and stochastic game theory, Van Mieghem (1999) shows that when explicit contracts cannot be made it is better to agree at the onset to negotiate later as needed. As past research had indicated, contracts impose restrictions on IS and it could become costly to change the contracts when needed. Furthermore, a contract can be considered as an institutional factor. From an institutional theory perspective, formal contracts are

institutional arrangements that define normative processes to be followed by companies and influence how organizations would receive IS services.

In summary, IS outsourcing arrangement can be further described using the functions outsourced, the type of relationship with vendors and the contractual or strategic agreements with the vendors.

2.2 IS Outsourcing Change

In IS outsourcing, different arrangements can occur as discussed in the previous section. While there are benefits to these different types of arrangement, constraining factors may be associated with each of them as well. Type of relationship is one aspect of an arrangement, and it is possible that a company will move from one type of relationship to another. Gallivan and Oh (1999) discuss the benefits and problems associated with the types of relationships.

Enabling and constraining forces influence companies to move from simple dyadic (single client – single vendor) relationships to multi-vendor relationships (single client – multiple vendor) and for companies to move from simple dyadic to co-sourcing (multiple clients – single vendor) relationships (Gallivan and Oh 1999). With single vendor relationships the risks due to opportunistic behavior of the vendor is greater than with multiple vendors. Switching costs will be higher in the case of a single vendor, and multiple vendor relationships will provide greater contractual flexibility. Multiple vendor arrangements would allow companies to have more leverage over the vendors and keep the vendors motivated to provide a good service (Cross 1995, Applegate and Montealegre 1991). However, conflicts could arise due to multiple vendors requiring more managerial effort. Therefore, managing multiple vendor relations could become a challenge and more costly than managing a single vendor. While multiple vendor relationships may provide more flexibility, the contracts may become more complex. On the other hand, different vendors may have different technical expertise, and they may specialize on specific IS services. In such a situation, having a multiple vendor relationship will be more suitable. Overall, there are enabling and constraining forces for movement towards multiple-vendor relationships from single vendor relationships (Gallivan and Oh 1999). Hence, it is possible to postulate that changes may occur from multiple vendor arrangements to single vendor arrangements and vice versa.

Similarly, companies may change from simple dyadic relationships to co-sourcing arrangements where many clients would form an alliance when obtaining IS services from a single vendor (Gallivan and Oh 1999). Depending on the type of resources and the scale of services being obtained from the vendor, coalitions of clients in a co-sourcing relationship might have more power than the vendor. In addition, since many clients are purchasing services from a single vendor, economies of scale could occur due to the number of buyers. Buyer economies of scale could occur in co-sourcing as opposed to situations where the buyers are not

related, where economies of scale may not occur always (Lacity and Hirschheim 1993). Not only the economies of scale advantage but also risks due to vendor relationships may be shared in co-sourcing arrangement. On the other hand, co-sourcing situation might become a risk if knowledge diffusion to the other clients is not acceptable. Other problems with co-sourcing will be strategic inflexibility due to sharing of the vendor relationship with many other companies and coordination costs among the client companies. Overall, there are enabling as well as constraining forces for companies to move from simple relationships to co-sourcing relationships (Gallivan and Oh 1999).

Four possible modes of outsourcing were discussed earlier (cf. section 2.1.3), i.e., single-vendor, multi-vendor, co-sourcing, and complex. These four modes may occur with either total or selective outsourcing resulting in nine possible arrangements. For parsimony, only single-vendor and multi-vendor modes are considered. Co-sourcing can be viewed as single-vendor relationship for a given client company in a co-sourcing arrangement. Similarly, a complex relationship can be viewed as a multi-vendor relationship for a given client company. When we combine the different modes and degrees of outsourcing five different states of outsourcing can be identified. They are (i) total single-vendor outsourcing, (ii) total multi-vendor outsourcing (iii) selective single-vendor outsourcing (iv) selective multi-vendor outsourcing and (v) insourcing. The changes could occur between these different states of sourcing. These transitions can occur due to changes in vendor, changes in mode or changes in degree of outsourcing. While changes in vendor, mode or degree may invoke new or modified contracts, changes in contracts may occur without causing changes in vendor, mode or degree of outsourcing.

Therefore, outsourcing in a company can be defined using the vendor, mode of outsourcing, degree of outsourcing and the contract. (or IS sourcing = f(vendor, mode, degree, contract)).

Considering a single state of IS sourcing, specifically TS, Figure 1 shows the possible transformations from that state. Transformations might occur from a Total Single sourcing arrangement due to contract or vendor changes or due to changes in mode or degree. All the other sourcing states may be subject to transformations similar to that of TS. Due to the complexity, the diagram with all the possible states is not included in here.

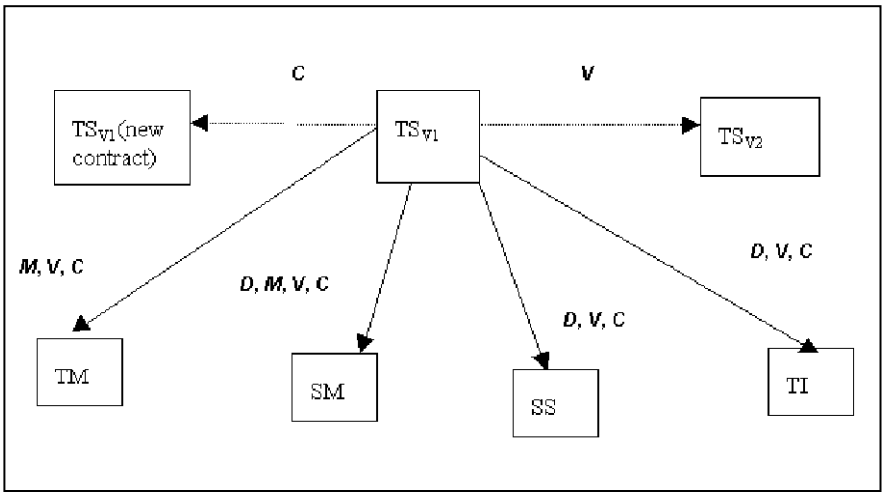


Figure 1: Possible transformation from a single IS sourcing state

Using the following nomenclature, possible transitions from a single outsourcing arrangement can be shown as in Figure 1

- TS - Total single-vendor outsourcing
- TM - Total multiple-vendor outsourcing
- SS - Selective single-vendor outsourcing
- SM - Selective multiple-vendor outsourcing
- TI - Total Insourcing
- M - changes in modes of outsourcing
- D - changes in degree of outsourcing
- V - changes in vendor only
- C - changes in contract

2.3 Antecedents to Change

Shifts in organizations can be viewed as caused or triggered by events happening in a time continuum from past to future. In this time continuum, activities have occurred in the past. At the present, certain activities are carried out and anticipations or planning for future takes place. The past activities were done based on some expectations at a future period. The anticipated future of the past becomes the present. Present shifts could occur due to not meeting the past expectations at the present or due to new anticipation of the future. Activities

performed from past to present and anticipations or planning is done for the future. Therefore, within an outsourcing framework shifts in outsourcing arrangements could occur due to not meeting the initial expectation or due to emergent conditions such as business changes. Based on its expectations when an outsourcing arrangement is put in place, a company attempts to achieve certain objectives from the outsourced IS. In addition, the activities associated with the outsourcing arrangement and IS establishes a structure. The company then obtains the outsourced IS services within the structures. However, performance issues and the ability to meet the original objectives within this established structure become important criteria for continuation of the structure in place. Due to failure in meeting its initial expectations, a company may change the outsourcing arrangement. Past research indicates that companies either re-negotiated the outsourcing contracts or cancelled the outsourcing contracts (Fitzgerald and Willcocks 1994).

> "Against general projection of a rising trend in outsourcing nearly a third of organizations who have experienced outsourcing have in the past five years canceled contracts as opposed to straightforwardly renewing them. In one half of these cases, the contract was subsequently re-negotiated, but a further 28% of the cases involved a change of vendor, while remaining 22% saw the IS work brought back in-house."

In general, these changes occur in a contract, vendor, mode or, degree of outsourcing. As one scenario, consider a company that outsourced its IS expecting to improve IS performance and subsequently found IS performance actually had deteriorated. In such a situation, the company might move the IS sourcing in-house as in the case of ABB Power which found that the costs of financial applications were not reduced by outsourcing but by using newer technologies. As a result, they brought the financial applications in-house (Hoffman 1993).

Emergent conditions occur because of business or technology changes. Companies will adopt new technologies or set new business strategies due to top management initiatives or as a result of responding to the environment. Sometimes adoption of a new technology may necessitate that a company alters its sourcing arrangements. For example, companies that had done total outsourcing earlier might start developing web applications in-house or web applications may be developed by third parties outside of the existing outsourcing vendors. Due to the close inter-relatedness with user activities web-development is often done in-house (Anthes 1997).

2.4 Changes Within Existing Arrangements

As mentioned earlier, research and industry survey has shown that companies opt to change their contracts either before or at the end of term of contracts (Fitzgerald and Willcocks 1994). Conceptually, contracts may stipulate certain parameters (or

standards) of an outsourcing relationship, i.e. the performance metrics, mechanisms for monitoring, payments, rewards and penalties associated with performance. A contract will set these parameters (or standards) for a given period. It may not be possible to predict the future events when formulating a contract and it may not be feasible to include all future anticipations in the contract. Hence, the standards specified in a contract may be limited. When operating within a set time, it is possible that vendor and/or customer will find the predefined parameters as unsuitable or restrictive. For example, while the performance serves as an expectation for the customer, the rewards/penalties and payments will serve as measures of success or expectations for the vendor. Customer may find that its performance expectations are not met or performance metrics does not realistically represent their performance expectations. On the other hand, a vendor may find that the rewards and payments do not meet their revenue expectations or the penalties are lowering their revenues below expectations. Therefore, either vendor or client, or both may opt to re-negotiate the contract to meet their objectives. Such re-negotiations may result in modifications of a contract's terms but not necessarily result in vendor, mode or degree changes.

Three other specific situations also will make a contract unsuitable and such a contract may be predisposed to change. First, a too tight contract that stipulates restrictive conditions on the vendor or on the customer may result in vendor not performing its activities efficiently or the customer not requesting or receiving the necessary services. On the other extreme, a loose contract may provide flexibility to the vendor such that it may not perform well enough or the customer may have the opportunities to request more services that has higher value to the vendor than the returns it receives from the contract. Third, having a contract that requires too much management from the customer may escalate customer's management cost to be higher than that of managing an in-house IT department. Hence, any of these three conditions can cause a change in a contract.

3 Institutional Perspective

3.1 Institutional Theory Perspective Explaining Change

IS sourcing changes occur due to unsatisfactory outcomes of existing arrangements or due to emerging conditions as discussed in the previous section. The emergent conditions and the unsatisfactory outcomes can arise due to external influences or other institutional phenomena such as internal interest differences. Hence, factors that influence IS sourcing decisions and outcomes can be investigated further using institutional theory lens.

Institutional theorists explain organizational behavior as a product of values, norms, beliefs, and regulations that originate in larger institutional contexts (Meyer and Rowan 1977; Zucker 1987). Organizations exist in this institutional context and perform actions that guarantee their legitimacy. In order to survive, companies must accommodate the institutional expectations. The prerogatives arising from institutional processes and influences serve as institutional rationale for organizational change (Greenwood and Hinnings 1996) and they may not always result in technical efficiencies (Meyer and Rowan 1977). For example, a company with public stock is bound to conform to the financial reporting standards and show profitability through these institutionally accepted standards. Fundamentally, institutional theories can explain the similarity and stability of organizations or organizational fields. Organizational change is explained as changes from 'less institutionally affirmative' states to an affirmative state. In these transitions, market and institutional contexts and the organizational members' power and interest dependencies influence value commitments of managers (Greenwood and Hinings 1996). Although managers' actions result in change, according to institutional theories primary influence comes from the external environment and other institutional forces.

Diversity and differentiation among companies exist and organizational theory investigates the variation in behavior and structure in these organizations (Child and Kieser 1981, Miller and Friesen 1984). However, companies can be similar in many other forms. The ability to find archetypes among organizations (Greenwood and Hinnings 1993) indicates that companies tend to organize and structure similarly in some cases. Companies in the same industry that service the same markets tend to be homogeneous. DiMaggio and Powell (1983) argue that organizations tend to undergo structuration and become homogenized in some attributes. More formally, they define an organizational field as:

> "those organizations that, in the aggregate constitute a recognized area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services and products" (DiMaggio and Powell 1983).

The structuration process includes five components: (i) an increase in the level of interaction among organizations in a field (ii) an increase in the load of information on organizations in a field (iii) an emergence of a structure of domination (iv) the emergence of patterns of coalition (v) the development, at the cultural level, of an ideology of the field.

When the above attributes exist, organizations change to become more homogeneous. Once organizational fields develop due to the structuration forces, these forces lead the organizations within them towards homogenization (DiMaggio and Powell 1983). Isomorphism is a constraining process that forces one unit (company) to resemble other units (companies) facing the same environmental conditions (DiMaggio and Powell 1983, Hawley 1968). In other

words, isomorphic processes lead organizations to act in similar manner. According to Aldrich (1979), in environments that are stable and have concentrated resources in some places, organizations modify their characteristics to be compatible with the characteristics of the environment. Since institutional perspective is based on the assumption of environmental determinism, isomorphism occurs due to processes related to the external environment. These processes occur because organizations attempt to legitimize their activities by following the societal norms, trying to imitate other organizations that are perceived as successful, or by following the regulations governing the society. DiMaggio and Powell (1991) define three processes corresponding to these concepts as normative isomorphism, mimetic isomorphism and coercive isomorphism.

Normative processes originate primarily from professionalization (DiMaggio and Powell 1983), which is interpreted as the collective effort of members of an occupation to define their methods of work, to establish a legitimate base and to control the production of products (Larson 1977).

> "we interpret professionalization as the collective struggle of members of an occupation to define the conditions and methods of their work, to control "the production of products" (Larson 1977: 49-52), and to establish a cognitive base and legitimation for their occupational autonomy (DiMaggio and Powell 1983)"

Managers, technical professionals and other specialists in companies often receive their education under similar systems and they adhere to similar norms and standards. While working within organizations, relationships with professionals in other organizations are formed through professional organizations or other informal contacts. These professional relationships help develop professional networks. Often professionals in one company leave and join other companies carrying with them norms, standards as well as experience. When hiring people, companies filter from the same industry and with the same experience base or adhering to same values and norms. These professional behaviors and movements cause normative pressures on the companies. Similarities in professionals in companies were found through empirical studies as well (March and March 1977, Ouchi 1980, Ueda 1983, Williamson 1975). In addition, large companies may establish norms when interacting with other companies (DiMaggio and Powell 1983). For example, a large customer may set the standards for transactions when purchasing from a small company. Companies tend to follow the normative pressures coming from the professional and influential organizations and networks. These normative pressures result in normative isomorphism. In summary, *normative isomorphism occurs when organizations follow the norms set externally and normative pressures come from the professional activities and from the activities of other influential organizations and networks*.

Success of other companies in the environment acts as another source of pressure. Companies tend to follow successful companies in order to gain legitimacy and

become successful. This modeling of other companies in the environment occurs due to uncertainties, ambiguities about goals and lack of understanding of technologies. DiMaggio and Powell (1983) *refer to the process of organizations modeling other organizations in the environment as mimetic isomorphic processes*. Companies could look for solutions to their problems by investigating the external environment. Successful companies can provide them with models to follow at the times of uncertainties and ambiguities. In addition to following other companies resulting in mimetic isomorphism, companies have to follow regulations also. Such following of regulations gives rise to coercive isomorphism. Regulations originating in the external institutional environment force organizations to follow common paths.

In addition to the regulations, there are pressures coming from other organizations, as persuasions and invitations to join collaborations. Therefore, these *coercive pressures due to regulations and other organizations in the external environment result in coercive isomorphism*. While the pressures for collusion may not affect many organizations, some government regulations could be mandatory and they influence a wide spectrum of organizations. Often, such regulations will tend to homogenize companies in the same or similar industries. For example, banks have to follow monetary policies and regulations, the airline industry must adhere to the Federal Aviation Administration, and environmental regulations will influence many organizations in several industries. Public and governmental institutions may feel the influence of coercive pressures more than by the others. Several studies have looked at coercive isomorphism. Ang and Cummings (1997) examined the influence of regulations on outsourcing in banks, Swidler (1979) investigated the pressures on schools, and Fitzgerald and Willcocks (1995) examined the influences on public organizations in their outsourcing activities.

Coercive, mimetic and normative isomorphic processes explain the processes by which organizations become homogeneous. However, organizations also have some degree of variation. Therefore, it is also necessary to explain organizational change using an institutional perspective (Greenwood and Hinnings 1996). Isomorphisms discussed earlier explain organizational behavior at a macro level and do not explain the internal activities within an organization. Greenwood and Hinnings (1996) presented a model that took into consideration the inter-organizational and institutional contexts as well as the intra-organizational dynamics that influence the organizational change. Due to relative disadvantages and advantages, different groups will have within organizations interest dissatisfaction will occur. According to their model, institutional contexts influence the value commitments in an organization, which in turn will influence the organizational interest dissatisfaction. Furthermore, the power dependencies and the market context of an organization influence this interest dissatisfaction. Since organizational action will depend on the value commitments of an organization, change in organization is directly related to the value commitments and the power dependencies, and the capacity of the organization to act moderates

the relationship. The changes occurring in organizations in turn could influence the market and institutional context. In summary, Greenwood and Hinnings' (1996) model explains the interactions between the contexts and the intra-organizational activities, such as power dependencies, interests dissatisfaction, and value commitments. While isomorphism does not consider the intra-organizational activities and the influence from the organization on the context, it does not contradict Greenwood and Hinnings' (1996) model. On the other hand, Greenwood and Hinnings' (1996) model supplements the isomorphism explanations by taking a more micro view of the processes. The change model (Greenwood and Hinnings 1996) and the three isomorphic processes (DiMaggio Powell 1983) can be used to explain IS sourcing phenomena.

3.2 IS Sourcing and Institutional Processes

Attributes of organizational fields and structuration can be found in IS sourcing. Companies that obtain there is resources or services and products from IS vendors are obtaining services from an institutional environment. A company having an internal IS department obtains IS products, services and IS personnel from the external environment. The companies are dependent on the environment for these IS resources and in turn become dependent on the IT industry. Although there is interdependence due to the IT industry receiving monetary repayments for their products and services, client companies become more dependent on the industry due to the difficulty in obtaining the required services and products internally. This dependency on the external environment is evident from some of the determinants of outsourcing such as lack of IS skills, and rapid change of IT (McFarlan and Nolan 1995, Clark et al. 1995). These determinants produce components of structuration. Rapid change of IT increases the amount of information available to the decision-makers, e.g., increase in different types of storage devices increase the amount of information regarding storage devices. Reductions in available IS personnel in the job market increase the leverage of companies providing these skills. These are evidence of increase in the load of information and a structure of domination, which are components ii and iii of structuration. The increasing demand from the clients makes it necessary for vendor companies to form coalitions and alliances (Gallivan and Oh 1995). Such emergence of alliances or coalitions is an essential component of the structuration process. Furthermore, the IT industry has an influence on the IS activities of client companies and the influence comes through other sources such as professional organizations, and public media (Swanson and Ramiller 1997). Professional organizations and public media enable interactions among the companies that are outsourcing and facilitate establishment of common visions and norms. Such interactions and common cultural attributes can form a structuration process. Influences of interactions among IS professionals and vendors on IS sourcing decisions were found in IS outsourcing diffusion studies (Hu et al. 1996, Loh and

Venkatraman 1992). Hence, examination of the factors influencing IS outsourcing indicates that changes are dependent on and driven by the external environment. When the IS sourcing arrangements are influenced by institutional factors, the resulting changes are isomorphic. They are isomorphic because the companies using IS tend to converge towards similar types of sourcing and governance arrangements for IS.

Companies follow institutional or industrial norms such as standard accounting and financial reporting procedures, and hiring practices. They follow professionals who are following the norms of their professions, and the companies follow norms set by the vendors due to their efforts in promoting products. Furthermore, benchmarking standards set up by other companies can serve as norms. In summary, normative pressures produce normative isomorphism leading companies to move towards homogeneity.

IS outsourcing by successful and well-known companies can lead other companies to follow the former as evident from the surge in outsourcing phenomena subsequent to Kodak's landmark outsourcing decision (Loh and Venkatraman 1992). Later, Ang and Cummings (1997) also showed that peer pressures from other banks had influenced outsourcing at smaller banks. Initiatives to follow other companies in IS sourcing arrangements could originate from IS and managerial professionals working in the companies and consultants who are aware of successful outsourcing arrangements. Mimetic isomorphism occurs when companies follow the lead of other companies that have successfully outsourced IT. Although the normative and mimetic isomorphisms occur predominantly, coercive isomorphism may occur to a lesser extent in the private sector. However, coercive isomorphism could be an important factor in public sector outsourcing where government regulations set guidelines for obtaining services from private companies. Furthermore, coercive processes may act as moderators to IS outsourcing determinants depending on the industry (Ang and Cummings 1997).

Differences in interests within an organization can be another institutional factor (Greenwood and Hinnings 1996). Due to differences an interests a company might take decisions that are driven neither by the business needs nor by the efficiency considerations. For example, a company might have differences with an internal IT department and this could lead to outsourcing IT.

Institutional theory, specifically isomorphism, provides conceptual explanations and boundaries for examining the institutional influences, which are primarily based on external environment, on IS sourcing. However, it is possible to argue that the management of a company that makes the sourcing decisions and they have choices when making their decisions. When considering the options available to management other than following institutional processes, the view of the role of IT and the vision of its ability to meet the business needs is another relevant aspect. Therefore, it can be postulated that a company may not strictly follow the institutional processes as described previously instead it may follow IT

related efficiency or effectiveness considerations when making the sourcing decisions.

In summary, at one extreme a company may follow the institutional processes and make decisions on IS sourcing. At the other extreme, a company may follow its IT needs and efficiencies and make IT sourcing decisions. The following sections describe the empirical findings of case studies from this perspective.

4 Method

This research's objectives necessitated traversal of transformations that had occurred in IS sourcing arrangements for several years in most of the cases since IS outsourcing had been occurring in companies since early 1990's. Furthermore, review of literature revealed factors that could influence the changes in IS sourcing. A questionnaire was prepared and an industry expert and other researchers were consulted to test the validity. The reviews that ensued resulted in a long questionnaire. It is necessary to collect data related to the initial outsourcing decisions, the conditions after the initial outsourcing, the conditions leading to changes, and the changes occurred. The feasibility of obtaining reliable data from such a large questionnaire seemed dubious. Furthermore, lack of knowledge about the people who would be filling the questionnaires and the correctness of recollections of the past may be questionable when such data is collected through a questionnaire. Therefore, case research method was adopted to obtain empirical support for the research. The case research method collecting data enabled the researcher (1) to come to a better understanding of the respondent's role in the organization, outsourcing and IT activities, (2) to collect rich contextual information of the organization, and (3) to clarify responses in some cases when the answers provided were ambiguous.

Since the outsourcing change phenomenon was not researched earlier, specific characteristics of companies to be used as criteria for selection of the companies was not available. As seen from the number of possible paths of change, organizations can take is a large number, i.e. it could be at least 32. Also, there is a possibility that a company might make changes to the contracts or relationships within a given arrangement. Therefore, selecting a sample to cover all these possible cases and to perform a qualitative study will take a long period. As the first step, the researcher contacted companies that have outsourced and changed their outsourcing arrangements. Out of these, the companies that have changed degree, mode, or vendor or have renegotiated the contract with an intention of changing arrangements were selected. Size of the companies and the industries they were in did not become selection criteria. Nine companies were studied as shown in table X. The company names are fictitious since confidentiality of data has to be maintained.

Data was collected from more than one person in each company. This provided an opportunity to triangulate and validate the responses and make the construction of reality easier (Fine, Weis, Weseen and Wong 2000, Gabrium and Holstein 2000), with an exception of two cases where a single person provided the responses. However, in some cases due to the different roles of the respondents, one person in a company would be capable of providing detailed information than several other persons. Data was collected from the respondents using semi-structured interviews where they were allowed to describe how their companies have changed the outsourcing arrangements and perceived determinants or drivers of these changes. If the respondents' descriptions did not answer, some of the questions in the research protocol specific questions were asked by the researcher to elicit the necessary information. All the interviews except for four were done during face-to-face meetings. Three of the interviews were carried over the telephone and in one case, the responses were obtained through e-mail. In some cases, if review of data revealed ambiguities or conflicts they were further clarified using e-mail. All the telephone conversations and face-to-face meetings except for two were recorded. One telephone conversation was not recorded however, later the respondent was supplied with a narrative of the responses that was verified by the respondent. Since one respondent did not give consent to record the conversation, one face-to-face meeting was not recorded, however, in this case an additional person was interviewed to verify the collected data.

Table 1: Case Sites and Summary of Changes

Company Name	**Industry**	**Change**	**People Interviewed**
Mercury	Consumer Services	Total outsourcing (very little insourcing)→ multi-(out)sourcing and contract management changes → total insourcing	Director IT, Outsourcing Contract Manager, Project Manager
Venus	Consumer good	Selective single sourcing → total outsourcing and vendor change	Director IT, Outsourcing Contract Manager, a business manager
Mars	Construc-tion	Total single outsourcing → Changes in degree of outsourcing with minor vendor changes	Vice President IT, Senior Manager of IT services

Company Name	Industry	Change	People Interviewed
Jupiter	Industrial services	Total outsourcing → total insourcing	CIO, Senior IT Manager
Saturn	Energy	Total outsourcing → bringing some activities in-house, re-negotiations and contract changes	CIO, Director IT, Account Manager (Vendor)
Uranus	Transportation	Total single outsourcing → Opened up the bidding to other vendors and contract changes, degree of outsourcing changes (still total outsourcing)	Senior IT Manager, Four managers from the vendor side
Neptune	Oil	Total multi-vendor outsourcing → Vendor changes and new user web development activities	Senior Manager IT, IT human resources manager
Pluto	Petroleum	Selective single sourcing → Selective multiple sourcing	CIO, Contract Manager, Director IT
Centaur	Consumer Sales & Service	Changing one vendor, and bringing in another activity	Contract Manager, Senior IT manager, Senior Network Engineer, Manager User support

5 Analysis and Findings

The determinants of the initial outsourcing and the causes for subsequent transformations were determined from the collected data of cases. The responses of the participants were analyzed using the interpretive approach (Walsham 1995, Pettigrew 1984). Analysis of data can reveal patterns, continuities and changes

that have occurred (Denzin and Lincoln 1998). The responses were read to determine the change events that have occurred and the antecedents to these events. In the interpretive approach, the text was analyzed to determine the causes. Table Y shows the drivers for initial outsourcing and the determinants that lead to the shifts in outsourcing.

Cost considerations are taken as an institutional determinant. On the other hand, IT considerations such as efficiency in systems development, proper business support, vendor efficiency were considered as non-institutional. The antecedents to change were categorized using the institutional theory perspective. When considering a company's IT requirements and the role of IT, cost considerations based on accounting standards can be treated as an institutional factor since the actual cost and benefits of IT may not be taken into consideration by the accounting procedures. Furthermore, the accounting methods are based on accepted norms or standards, and hence, a company taking the IT sourcing decisions based mainly on the cost considerations is following normative processes (Meyer and Rowan 1983, Williamson 1996).

In some companies, causes for sourcing decisions were more than the cost considerations. For example, a company had outsourced its e-business activities due to efficiencies of vendors and the inability of the client company to find all the resources to develop the systems fast enough to meet the competition. In that situation, costs were not the major criteria although costs were considered when comparing bids.

Hence, Table Y consists of two major categories of antecedents to change. One category is more institutional and the other labeled as non-institutional, which are more IT oriented criteria during the decision making. Under the columns titled **'Initial'**, Table Y gives antecedents to the initial outsourcing, and they are further subdivided into institutional and non-institutional considerations. Similarly, the columns titled **'Change'** shows the events leading to later change. **'Change'** columns are also further subdivided into two categories similar to **'Initial'** columns. In cases where more than one antecedent had occurred, they are numbered. When changes occur more than once, Table X shows it. In addition, in such a situation entries in **'Change'** column in Table Y will have more than one numbered entry.

As an example, two companies are described here. Mercury outsourced initially due to its managements' lack of confidence in internal IT. Furthermore, one other reason given by its IT director was cost considerations. In both decisions, IT effectiveness was not the major concern. As the changes unfolded in the company, they were also driven by similar considerations, i.e., cost escalations, lack of satisfaction with vendor's management. This lead to changes in the sourcing arrangements and the antecedents are labeled as 1.1 and 1.2. Finally, company decided to bring everything in house and that event is labeled as two. In the case of Mercury, the company had been taking non-IT oriented or more institutional

considerations when making the sourcing decisions and it had gone through more difficult times due to outsourcing and had come back 'full circle' to in-sourcing.

The company named as Saturn had cost considerations as the initial criteria for outsourcing while the next set of changes came due to mergers where the management with the outsourced company's interests had conflicts with a company that did not have its IT outsourced. Finally, both companies went ahead with outsourcing after the merger. Afterwards, the company had seen several changes in its IT sourcing due to more IT and strategic considerations where some of the activities were brought back in. Therefore, the 'Initial' entry for Saturn is under 'Institutional' column and 'Change' entries can be seen under both 'Institutional' and 'non-institutional' columns.

Table 2: Initial and Later Antecedents to Change

Company	**Initial (antecedents)**		**(antecedents to) Change**	
	Institutional	**Non-Institutional (more concerning IT)**	**Institutional**	**Non-institutional (more concerning IT)**
Mercury	1. Management did not appear to have confidence in the existing IT department 2. Lowering of costs		1.1 Cost overruns → bringing in another vendor (x-SCIPM) 1.2 Adding more internal management of outsourced tasks →taking over project management responsibilities 2. Costs were growing higher "felt like we can do a better job internally"	
Venus		IT focus on development activities → hardware maintenance outsourced	2. Complete transformation due to corporate wide cost cutting measures	1.Attempted to improve internal management of outsourced IT
Mars	Interest differences after merger		Some cost considerations	Performance, taking a strategic perspective on IT, need for expertise and meeting needs (these have not caused major shifts)

Company	Initial (antecedents)		(antecedents to) Change	
	Institutional	**Non-Institutional (more concerning IT)**	**Institutional**	**Non-institutional (more concerning IT)**
Jupiter	Cost considerations		Costs were not low	IT more widely used
Saturn	Major factor cost, internal IT perceived as uncontrollable		Mergers kept outsourcing	More strategic components brought in, vendor role becoming more strategic (thought leadership, new technology investments, encouragement of innovation by vendor)
Uranus	Facilities management due to financial considerations			Not providing anticipated services (kept strategic ones, GUI development etc.) moving more towards a participation of vendor in IT management of the vendor & vendor participating in providing solutions
Neptune	Cost – institutional solution to problems after reorganizations			Building internal capabilities for better management, leverage in obtaining necessary resources, internal web development as required (e- business)
Pluto		Providing business support efficiently (rather than the costs)		Speedy entry into e-commerce
Centaur		Expecting efficient services from vendors		One vendor not providing service as anticipated needing customer intervention frequently. The second vendor pulling out due to lack of profit from the arrangement

The companies can be hypothesized to be traversing paths as shown in Figure 2, 3 and 4. Due to lack of IT directed concerns in the outsourcing decisions companies may find them in less stable positions and often facing difficulties and more changes. The extreme situation is depicted in Figure 1 where a company, which can be labeled as institutional followers, considers institutional factors. On the other hand, a company may find that initial considerations to be unsuitable as it finds the importance of IT or needing more control of IT and it may follow an evolutionary path. Such situations can be depicted as in Figure 3 and the company can be labeled as 'institutional to IT oriented transformations'. More stable type of arrangements emerge from the companies where more IT oriented considerations are given prominence in their decisions, shown in Figure 2. Note that here IT oriented considerations does not mean technology alone, and it could mean finding strategic or business value of IT etc.

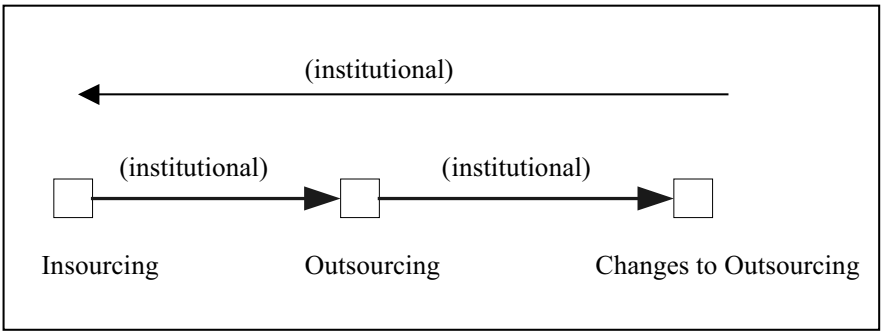


Figure 2: Institutional (Non-IT) Followers

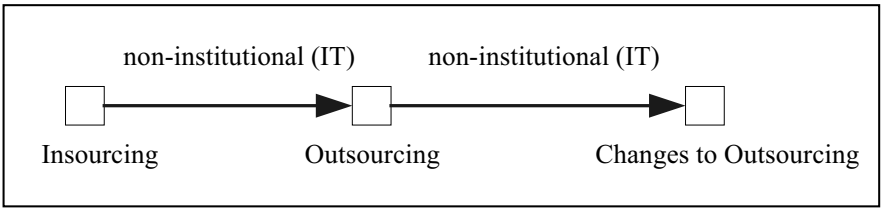


Figure 3: IT Oriented Leaders

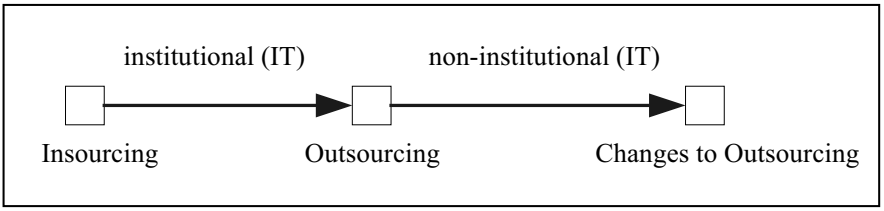


Figure 4: Institutional to IT Oriented Transformations

Companies studied for this research can be categorized into these three types as shown in Table Z. Note that Venus is classified as IT leader turning into institutional follower due to its earlier very clear indications of following a more IT directed path and later decision to totally outsource due to pure cost considerations that had come from the headquarters of the parent company of Venus. Because of this decision the director who had a leadership role of the previous IT department had to leave the company and the IT department was totally eliminated except for few management people to manage the contract.

Table 3: Classification of Change Types

Company Name	**Classification**
Mercury	Institutional follower
Venus	IT leader turning into institutional follower
Mars	institutional to IT transformations
Jupiter	institutional follower
Saturn	institutional to IT transformations
Uranus	institutional to IT transformations
Neptune	institutional to IT transformations
Pluto	IT leaders
Centaur	IT leaders

6 Conclusion

An attempt had been made here to understand the changes that occurred in IT sourcing in companies from an institutional theory perspective. During the data collection, some respondents referred to the changes they underwent as going from first generation contracts to second-generation contracts. Although such a consideration underscores the changes that are occurring, it does not show the role of IS in these changes. By taking an institutional perspective, it was possible to clearly identify the different approaches taken by the companies and to postulate on the role of IT in transformations that occur.

The importance of this research is its analysis of the change paths that had taken by the companies taking a more historic approach to look at the dynamic nature of sourcing arrangements. In a previous study, Hirschheim and Lacity (2000) identified four archetypes in insourcing and they showed the importance of cost in the alternatives to outsourcing. The present study also shows that majority of

companies had considering costs as an initial criterion, and later they have shifted their perspective on outsourcing.

I have considered IT outsourcing in general, and academic research shows the importance of other more special forms of outsourcing such as offshore outsourcing (Kumar and Willcocks 1998, and Rottman and Lacity 2004) and Application Service Provisioning (Currie and Seltsikas 2001) and the differences between these arrangements. Even in offshore outsourcing and Application Service Provisioning, institutional processes occur and such processes will influence the changes in the sourcing arrangements. For example, there can be many unknowns and differences between the countries and this lack of knowledge may have to be overcome by use of contract provisions, legal experts or consultants (Rottman and Lacity 2004), who will bring in the influences of normative processes. It is possible to extend the findings from this research to these other forms of outsourcing and to carry out similar research in offshore outsourcing and in Application Service Provisioning.

A limitation of this study is the consideration of institutional theory perspectives alone since the perspective assumes environmental determinism or primacy of the environmental influences on organizational change. On the other hand, the management and strategic choice can play an important role in IT sourcing decisions. Furthermore, the role of IT managers in the strategic decision making can have a significant influence on sourcing decisions as shown by Hirschheim and Lacity (2000) when examining insourcing decisions. Another important factor to be considered is the availability of resources, i.e., larger companies with more resources may be more capable of gaining advantages in the sourcing arrangements than the smaller companies. One other important consideration missing from the analysis is the periods with outsourcing. For example, companies that outsourced may be in more stable arrangements, due to existence of more knowledge on IT outsourcing than those started outsourcing in early days (early 1990's or before).

Finally, this had been an attempt to examine the perceptions of IS on outsourcing and souring in general. Since the early days of IS field the attempts of researchers had been to find comprehensive frameworks that could describe IS in organizational contexts (Ives and Davis 1980, Mason and Mitroff 1973). Those early frameworks did not consider specifically IS activities spanning organizational boundaries and outsourcing research had examined the role of IS as determinants of outsourcing (Lacity and Willcocks) and strategic role of IS (Quinn and Hilmer 1994). However, as argued by institutional theory perspective and shown by the empirical evidence the role of IS can be camouflaged by other institutional considerations. Therefore, it will be necessary to further examine the perceptions of IS and its roles, and their influence on evolution of sourcing.

References

Aldrich, H. E. *Organizations and Environments,* Englewood Cliffs, NJ: Prentice-Hall, 1979.

Ang, S. and Cummings, L. "Strategic Response to Institutional Influences on Information Systems Outsourcing," *Organization Science*, (8:3), 1997, pp. 235-255.

Anthes, Gary H. "Outsourcing pros and cons," *Computerworld,* (31:14), 1997, pp. 7.

Applegate, Lynda M and Montealegre, Ramiro *"Eastman Kodak Co.: Managing Information Systems Through Strategic Alliances",* Harvard Business School case. Harvard Business School Publishing Division, Cambridge MA, 1991.

Apte, U.M. and Mason, R. "Global Disaggregation of Information-intensive Services," *Management Science*, (41:7), 1250-1262, 1995.

Apte, U. M., Sobol, M. G., Hanaoka, S., Shimada, T., Saarinen, T., Salmela, T., and Vepsalainen, A. P. J. "IS outsourcing practices in the USA, Japan, and Finland: a comparative study," *Journal of Information Technology*, 12, 289-304, 1997.

Borthick, S. "Outsourcing trends: Customers and market mature," *Business Communications Review* (31:7), July 2001, pp. 28-32,.

Bourgeois, L. J. "Strategic Management and Determinism," *Academy of Management Review,* (9:4), 1984, pp. 586-596.

Chandler, A. *Strategy and Structure: Chapters in the History of the Industrial Enterprise,* Cambridge: MIT Press, 1962.

Chaudhury, A., Nam, K., and Rao, H.R. "Management of Information Systems Outsourcing: A Bidding Perspective," *Journal of Management Information Systems*, (12:2), 1995, 131-159.

Child, John "Organizational structure, environment and performance: The role of strategic choice," Sociology 6, 1972, pp. 1-22.

Child, John, and Kieser, Alfred "Development of organizations over time," In P.C Nystrom and W. H. Starbuck, (eds.) *Handbook of Organizational Design, PP.* 28-64, 1981.

Clark, T. D., Zmud, R. W., and McCray, G. E. "The outsourcing of information systems: transforming the nature of business in the information industry," *Journal of Information Technology*, 10, 1995, pp. 221-237.

Clark, Charles E. Cavanaugh, Nancy C. Brown, Carol V. Sambamurthy, V. "Building change-readiness capabilities in the IS organization: Insights from the Bell Atlantic experience," *MIS Quarterly*, (21:4), 1997, pp. 425-455.

Cole-Gomolski, Barb "Web technologies alter outsourcing deals," *Computerworld.* (33:28). 1999a June 14, pp. 24.

Cole-Gomolski, Barb "Businesses lean toward shorter IS contracts," *Computerworld.* 33(28). 24. 1999b July 12.

Cross, J. "IS Outsourcing: British Petroleum's Competitive Approach," *Harvard Business Review*, May-June, 1995, pp. 94-102.

Currie, W. L. "Outsourcing in the private and public sectors: an unpredictable IS strategy," *European Journal of Information Systems*, (4:4), February 1996, pp. 226-236.

Currie, W. L. and Seltsikas, P. "Exploring the supply side of IT outsourcing: evaluating the emergin role of application service providers," *European Journal of Information Systems*, 10(3), December 2001, pp. 123-134.

Denzing and Lincoln *Collecting and interpreting qualitative materials*, Thousand Oaks: CA, Sage Publications, 1998.

DeSanctis, Gerardine and Poole, Marshal Scott "Capturing the Complexity in Advanced Technology Use: Adaptive Structuration Theory," *Organization Science,* (5:2), May 1994, pp. 121-147.

Dibbern, J., Goles, T., Hirschheim, R. and Jayatilaka, B. "Multiple Perspectives on IS Outsourcing: An Integrative Model for Reviewing the Literature," *DATABASE for Advances in Information Systems*, (35:4), Fall 2004, pp. 6-102.

DiMaggio, Paul J., and Walter W. Powell "The iron cage revisited: institutional isomorphism and collective rationality in organizational fields," *American Sociological Review,* 48, 1983, pp. 147-160.

DiMaggio, Paul J., and Walter W. Powell "Introduction," In Walter W. Powell and Paul J. DiMaggio (eds.) *The new institutionalism in organizational analysis*, Chicago: University of Chicago Press, 1991, pp. 1-38.

DiRomualdo, A. and Gurbaxani, V. "Strategic Intent for IS Outsourcing," *Sloan Management Review*, (39:4), Summer 1998, pp. 67-80.

Fine, Michelle, Weis, Lois, Weseen, Susan and Wong, Loonmun "For Whom? Qualitative Research, Representations, and Social Responsibilities," In Norman K. Denzin and Yvonna S. Lincoln (eds.) *Handbook of Qualitative Research*, Thousand Oaks: CA, Sage Publications, 2000, pp. 107-132.

Fitzgerald, G. and Willcocks, L. "Contracts and Partnerships in the Outsourcing of IS," *Proceedings of the Fifteenth International Conference on Information Systems*, 1994, pp. 91-98.

Gallivan, M.J., and Oh, W. "Analyzing IS Outsourcing Relationships as Alliances among Multiple Clients and Vendors," *Proceedings of the 32nd Annual Hawaii International Conference on System Sciences,* 1999.

Greenwood, Royston, and C. R. Hinnings "Understanding radical organizational change: bringing together the old and new institutionalism," *Academy of Management Review,* 21, 1996, pp. 1022-1054

Grover, V., Cheon, M. J., and Teng, J. T. C. "An evaluation of the impact of corporate strategy and the role of information technology on IS functional outsourcing," *European Journal of Information Systems,* (3:3), 1994, pp. 179-190.

Hoffman, Thomas " 'In' sourcing saves utility $600,000," *Computerworld* (27:20), 1993 May 17, pp. 65,68.

Hu, Q., Saunders, C, and Gebelt, M. "Diffusion of Information Systems Outsourcing: A Reevaluation of Influence Sources," *Information Systems Research*, (8:3), 1997, pp. 288-301.

Ives, Blake, Hamilton, S. and Davis, G. "A Framework for Research in Computer-Based Management Information Systems," *Management Science,* (26:9), 1980, pp. 910-934.

Gersick, C. J. G. "Pacing Strategic Change: The Case of a New Venture," *Academy of Management Journal,* 37, 1994, pp. 9-45.

Kaiser, K. and Hawk S. "Evolution of Offshore Software Development: From Outsourcing to Cosourcing,*" MIS Quartely Executive,* (3:2), June 2004, pp. 69-81.

Kaplan, J. "Outsourcing trends-a matter of perspective*?" Business Communications Review,* (33:8), August 2003, pp. 46-50.

Kumar, K. and Willcocks, L. "Offshore outosurcing: A country too far?" *Proceedings of the 4th European Conference on Information Systems*, July 1996, pp. 1309-1325.

Lacity, M. and Willcocks, L. "An Empirical Investigation of Information Technology Sourcing Practices: Lessons From Experience," *MIS Quarterly*, (22:3), 1998, pp. 363-408.

Lacity, M., Willcocks, L., and Feeny, D. "The Value of Selective IS Sourcing," *Sloan Management Review*, Spring 1996, pp. 13-25.

Lacity, M., Willcocks, L., and Feeny, D. "IS Outsourcing: Maximize Flexibility and Control," *Harvard Business Review*, May-June 1995, pp. 85-93.

Lais, S. Outtasking: A custom fit. *Computerworld*. (33:24), 1999, June 14, p. 43.

Lattig, M. New outsourcing market: Rent-a-gigabyte. *InfoWorld*, 1999, July 5.

Loh, L. and Venkatraman, N. "Diffusion of Information Technology Outsourcing: Influence Sources and the Kodak Effect." *Information Systems Research*, (3:4), December 1992, pp. 334-358.

Marcolin, B. and McLellan, K. "Effective IS Outsourcing Arrangements." *Proceedings of the 31st Annual Hawaii International Conference on System Sciences*, 1998, pp. 654-665.

Markus, Lynn and Robey, Daniel "Information Technology and Organizational Change: Causal Structure in Theory and Research". *Management Science*. (35:5), 1988, pp. 583-598.

Mason, Richard O. McKenney, James L. Copeland, Duncan G "An historical method for MIS research: Steps and assumptions". *MIS Quarterly*. (21:3), 1997 September, pp. 307-320.

Mason, Richard O. Mitroff, Ian I. "A Program for Research on Managmeent Information Systems," *Management Science*, (19:5), 1973, pp. 475-487.

McFarlan, F. and Nolan, R. "How to Manage an IS Outsourcing Alliance." *Sloan Management Review*, Winter 1995, pp. 9-23.

Meyer, John W., and Brian Rowan "Institutionalized organizations: formal structure as myth and ceremony," *American Journal of Sociology,* 1983, pp. 340-363.

Miller, Danny and Friesen P.H. *Organizations a Quantum View*. Engelwood Cliffs NJ: Prentice-Hall Inc, 1984.

Nam, K., Rajagopalan, S., Rao, H.R. and Chaudhury, A. "A Two-Level Investigation of Information Systems Outsourcing," *Communications of the ACM*, (39:7), 1996, pp. 36-44.

Orlikowski, Wanda J. (1996) "Improvising Organizational Transformation Over Time: A Situated Change Perspective," *Information Systems Research*, (7:1), 1996, pp. 63-92.

Orlikowski, Wanda J. and Gash, Debra C. "Technological Frames: Making Sense of Information Technology in Organizations," *ACM Transactions on Information Systems*, (12:2), 1994, pp. 174-207.

Orlikowski, Wanda J. "The Duality of Technology: Rethinking the Concept of Technology in Organizations," *Organization Science,* (3:2), 1992, pp. 398-427.

Perkins, B. "Outsourcing's dirty little secret," *Computerworld,* 37, 2003, pp.45, 46.

Pettigrew, Andrew, M. "Contextualist research and the study of organizational change processes," In E Mumford, R. Hirschheim, G. Fitzgerald, T. Wood-harper (eds.) Research Methods in Information Systems, Elsevier Science Publishers, Amsterdam Netherlands, 1984.

Quinn, J. and Hilmer, F. "Strategic Outsourcing," *Sloan Management Review*, Summer 1994, pp. 43-55.

Rajagopalan, Nandini and Spreitzer, Gretchen M., "Toward a Theory of Strategic Change: A Multi-lens Perspective and Integrative Framework," *Academy of Management Review,* 22, 1996, pp. 48-79.

Rottman, J.W. and Lacity, M. C. "Twenty Practices for Offshore Sourcing,", *MIS Quarterly Executive*, (3:3), 2004, pp. 117-130.

Ryan, Gery W. and Bernard, Russell "Data Management and Analysis Methods", In Handbook of Qualitative Research (eds.) Norman K. Denzin and Yvonna S. Lincoln, Thousand Oaks: CA, Sage Publications, 2000, pp. 769-802.

Saunders, C., Gebelt, M., and Hu, Q. "Achieving success in Information Systems outsourcing," *California Management Review*, (39:2), winter 1997, pp. 63-79.

Sharma, R. and Yetton, P. "Interorganizational Cooperation to Develop Information Systems," *Proceedings of the Sixteenth International Conference on Information Systems,* Cleveland, OH, 1996, pp. 122-132.

Sobol, M. and Apte, U. "Domestic and global outsourcing practices of America's most effective IS users," *Journal of Information Technology*, 10, 1995, pp. 269-280.

Sridhar, S. and Balachandran, B. "Incomplete Information, Task Assignment, and Managerial Control Systems," *Management Science*, (43:6), June 1997, pp. 764-778.

Swanson E.B. and Ramiler, N C. **"**The Organizing Vision in Information Systems Innovation" *Organization Science* (7:1), 1997, pp. 458-474.

Van Mieghem, J. "Coordinating Investment, Procurement, Production, and Subcontracting," *Management Science*, (45:7), 1999, pp. 954-971.

Walsham, G. "Interpretive case studies in IS research: nature and method," *European Journal of Information Systems,* 4, 1995, pp. 74-81.

Whang, S. (1992) "Contracting for Software Development," *Management Science*, (38:3), pp. 307-324.

Williamson, O. *The economic institutions of capitalism.* New York: Free Press, 1985.

Zucker, Lynne G. "Where do institutional patterns come from? Organizations as actors," In Lynne G. Zucker (ed.) *Social systems' in Institutional patterns and organizations: culture and environment*., Cambridge, MA: Ballinger, 1988, pp. 23-49.

Part III:

Outsourcing Relationship Issues

Legal and Tax Considerations in Outsourcing

Mihir A. Parikh

Department of Management Information Systems, University of Central Florida, 4000 Central Florida Blvd., BA-1:320, Orlando, FL 32816-1400, USA, mihir.parikh@bus.ucf.edu, +1-407-823-5374 (Tel), +1-407-823-2389 (Fax)

Gowree Gokhale

Nishith Desai Associates, 94-B Mittal Court, Nariman Point, Mumbai 400 021, India, gowree@nishithdesai.com, +91-22-5669-5000 (Tel), +91-22-5669-5001 (Fax)

1 Introduction

Outsourcing is not new; it is as old as the ancient trade routes to China and India. Trading with the East provided the produce and products that were not farmed or manufactured in the West. Although it involved physical products, support services, such as banking, brokering, and logistics, were required on the global scale to make the trading easier. The consumers, traders, and producers started relying on other parties to perform those services; thus begun services outsourcing. While individuals and organizations can perform some activities themselves, they rather have those activities performed by others, because others can do it better and/or cheaper. As Adam Smith put it, "*it is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest*" (Smith 2000, p. xviii).

The roots of modern day outsourcing are in subcontracting, joint ventures, and strategic partnership. As products became complex and componentized, manufacturers started subcontracting individual components to external organizations. Subcontractors enhanced the subcontracted components thorough process and product innovations and increased dependence of the manufacturers on them. The two sides, being dependent on each other, entered into joint ventures and strategic partnership to ensure long-term relationships and pre-empt potential competitors. The development of efficient transportation and logistics systems on the global scale fueled this process. In 1970s and 80s, routine manufacturing activities started being outsourced to companies in East Asian countries such as Japan, South Korea, Taiwan. With the development of information technology and voice/data communications infrastructure on the global scale, it has become

possible now to outsource routine service activities, such as IT/IS development and business processes, to the companies, both onshore and offshore, that can perform those activities with equal quality but in a much more cost-effective manner.

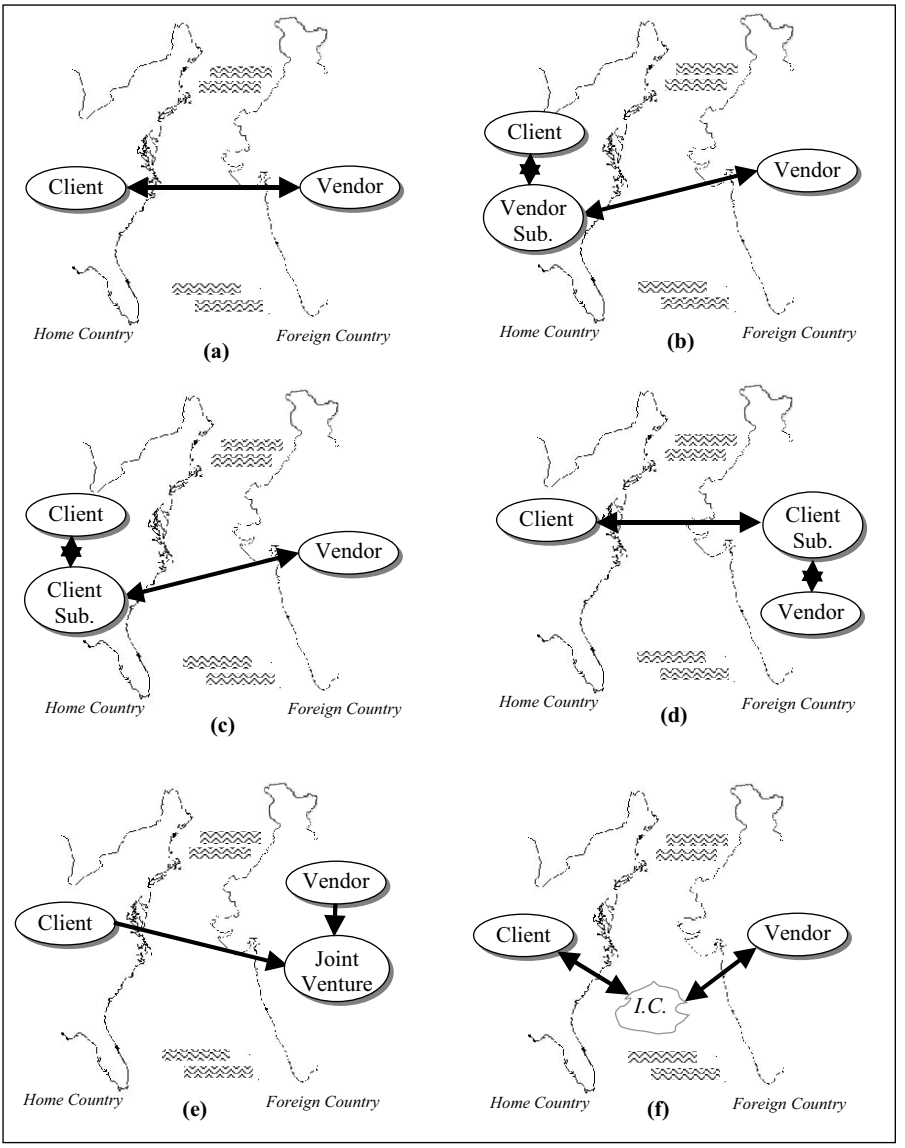


Figure 1: Offshore Outsourcing Structures

International Data Corporation predicts that the worldwide market for offshore IT software and services will increase annually by 20% from nearly $7 billion in 2003 to $17 billion by 2008 (IDC 2004). The key areas for IT outsourcing would be the custom applications development, applications management, data center administration, and systems integration. Recently, we have seen growth in business process outsourcing (BPO) and knowledge process outsourcing (KPO). Offshore outsourcing of business processes is expected to quadruple to $64 billion by 2007 (Frank 2005). According to NASSCOM, the global KPO industry would grow at the annual 46 percent rate to become worth $17 billion by 2010 (CIIOnline 2005).

The protection of legal rights in outsourcing, specifically in the offshore context, has been one of the top concerns of business executives (Tapper 2004). Outsourcing without complete understanding of potential legal and regulatory pitfalls in heavily regulated industries and foreign jurisdictions can expose organizations through their outsourcing partners to regulatory sanctions and legal liability. Therefore, when organizations enter into outsourcing arrangements, whether onshore or offshore, they should consider legal and tax issues in addition to the business and management issues they typically consider. It is crucial for both parties involved in an outsourcing transaction to examine issues related to industry specific regulations and foreign jurisdictions that potentially affect the transaction.

While a lot has been written about business and management issues in outsourcing (Ilie and Parikh 2004), very little has been written about legal and tax considerations in outsourcing (Brody et al. 2004; Miller and Anderson 2004). In this chapter, we discuss legal and tax implications in outsourcing, with a specific reference to offshore outsourcing with Indian companies. The purpose is to provide better understanding of the legal and tax risks involved in outsourcing and ways to manage them.

2 Structuring Outsourcing Projects

The first legal and tax consideration in an outsourcing project is develop the most appropriate structure of the project. Depending on the scope and scale of involvement, and the legal, tax and political considerations, an outsourcing project can be structured in four general categories.

1. Onshore outsourcing to an external service provider
2. Onshore outsourcing to a separate, but wholly-owned, special-purpose subsidiary
3. Offshore outsourcing to an external service provider

4. Offshore outsourcing to a separate, but wholly-owned, special-purpose subsidiary

While these outsourcing options are easy to understand, an offshore service provider in a project can be added through many variations with varying complexity. Figure 1 shows some of the widely-used structures involving an offshore service provider (S.P.). The most basic form is an arrangement (Figure 1-a), in which a direct, arm's length relationship is set up between the firm and the service provider. The client firm is in the home country and the service provider is in a foreign country. This arrangement is used in small projects, where both partners are trying to keep the costs associated with structuring the arrangement to a minimum. Sometimes outsourcing is arranged through a subsidiary set up by the service provider in the client's country (Figure 1-b). This may increase the cost of the project, as the service provider will have to set up a local branch and incur associated expenses. However, it is preferred when the client is hesitant in dealing with a foreign entity or the local regulations require the client to work only through a local firm. This arrangement also helps client reduce the effects of politically negative connotations associated with offshore outsourcing, while creating local employment opportunities.

Sometimes outsourcing is arranged through a subsidiary set up by the client either in the home country (Figure 1-c) or in the country of the service provider (Figure 1-d). This is preferred when the project is large or multiple divisions of the client are outsourcing to a single or multiple service providers. The role of the subsidiary is to set up a project specific structure to manage the whole process. Setting up a subsidiary in a foreign country also increases the complexity of transactions due to exchange control regulations. According to the exchange control regime in India, foreign direct investment (FDI) has been allowed up to 100% in the information technology sector on an automatic basis (i.e., a priori approval of the regulatory authority is not required). Because business process outsourcing is categorized as "IT-enabled services," this provision of automatic approval also extends to them. However, in other countries this may differ.

This structure is often followed by a reverse-BOT model, i.e. transfer of the client subsidiary to a third party or the service provider. After few years of operating the subsidiary, the client may decide to divest its stake from the subsidiary and hand it over to a third party or the service provider. When the BPO industry was in the nascent stage and experienced service providers were not available, several large companies (such as GE and Citibank) developed their own offshore subsidiaries to benefit from the lower costs and skilled workforce of a foreign country. Now many of those companies are divesting from or spinning off those subsidiaries to capitalize on their high valuations. Even after they divest, they continue to retain the subsidiaries for the services they provide before.

For strategically important projects, a joint venture (Figure 1-e) is set up by the client and service provider. The joint venture is structured as a separate company

that provides services to the client and may also to other companies needing similar services (often dubbed as "shared services"). The service provider can use the joint venture to receive foreign investment, technological expertise, and long-term commitment from established companies in foreign jurisdictions. An important consideration here is the type and level of ownership to exercise control over the joint venture company. There are two types of shareholders' resolutions under Indian law: 1) Ordinary Resolutions, which require the approval of a simple majority (51%) of the shareholders. They are used for reasons such as increasing the share capital, declaring dividends, appointing auditors, and increasing or reducing the number of directors. 2) Special Resolutions, which require a three-fourth majority (75%). They are used to change the name of a company, altering the Articles of Association, offer shares to any other people, and to wind down the company's affairs. Thus, a minority shareholder would also have some say in the key operations of the joint venture through statutory veto rights. Additionally, it is possible for the minority shareholder to have shares with differential voting rights or with a negative veto right over certain matters through specific articulation of the Articles of Association. Overall, it is important to carefully negotiate the shareholders' agreement and incorporate adequate control mechanisms. This model works better when there is a distinct third party client to whom the services can be sold by leveraging the strengths of the two partners in the joint venture.

A popular variation on this type of structuring is the BOT model. This model has three distinct phases: Build, operate, and transfer. In the Build phase, an offshore service provider builds a separate facility to provide services based on the standards and specifications defined by the client and recruits administrative, professional, and support staff for its operations. Both parties get involved in the appointment of key executive personnel for the facility and in the capital expenditure. In the Operations phase, the service provider manages the operations of the facility and provides services to the client in compliance with their Service Level Agreements. The client is charged pre-defined fees for the service. In the Transfer phase, the service provider hands over the control of the facility to the client at a pre-defined time and in a pre-defined manner. Often the client retains the option to delay or speed up the transfer. At the end of the transfer, the service provider receives a lump sum, pre-defined payment based on the performance and assets. This model allows the client to realize benefits of outsourcing with reduced execution risks and upfront cost, while retaining the flexibility of acquiring the facility. It is generally adopted when the client is hesitant to outsource its core functions, however, wishes to take advantage of the service provider's low cost structure. When the client does not have the resources, both technical and management, for creating and managing an offshore facility, the service provider, with the resources and experience, can help the client develop the facility. As the client gains sufficient knowledge and experience in operating and managing the offshore facility, it can take over the complete control.

Often, offshore outsourcing arrangements are routed through an intermediate country (Figure 1-f) to take advantage of favorable bilateral tax treaties with the intermediate country. For example, many outsourcing projects from the US are set up in India through Mauritius. India and Mauritius entered into a bilateral double taxation avoidance agreement (DTAA) in 1983. According to the provisions of this agreement, capital gains realized by a Mauritius resident company from the sale of shares in an Indian company would be subject to tax only in Mauritius and not in India, provided that the Mauritius company does not have a permanent establishment in India. Further, according to the domestic tax laws of Mauritius, capital gains are not taxable on such a sale. Hence, the interposing of a Mauritian holding company could be useful to eliminate capital gains tax, thereby making the Indian investment attractive. The need to implement a Mauritius entity should be ascertained on the basis of the business objectives. Many foreign companies have taken advantage of this unique agreement leading to Mauritius being on paper the largest single foreign investor in India. India also has similar types of DTAAs with Zambia, UAE, and Cyprus. The recently concluded DTAA with Singapore, also has a similar clause, the benefit of which can be claimed subject to certain conditions.

3 Offshore Outsourcing Agreements

The contract or legal agreement forms the core of a successful outsourcing relationships (Bryson and Ngwenyama 2000; Gopal et al. 2003; Harris et al. 1998). It captures the commercial interests and understanding of the involved parties as well as their unique business strategies and concerns. It should be meticulously drafted to document the nature of the outsourcing transaction; the type of activities that are being outsourced; the scope of the services to be rendered; responsibilities of the parties; performance specifications; accountability and measurement standards; a pricing structure for the services; a schedule of deliverables; and other conditions concerning employment, confidentiality, termination, dispute resolution mechanisms, and governing law. It may also contain schedules or exhibits that specify some of the terms and conditions in detail. Incomplete or ambiguous documentation of the service provider's obligations can result in client dissatisfaction or vice versa. Inaccurate categorization of the service volumes and charges can result in disputes over payment, as unanticipated changes translate into additional costs for the client or extra expenses for the service provider (Short 2002).

Depending upon the relationship between the involved parties and the nature of transaction, the outsourcing agreements could be: 1) *Third Party Agreements*, where the client and the service provider are not related parties; 2) *Captive Agreements,* where the client and the service provider are related parties; the

service provider typically being an independent subsidiary or joint venture of the client; or 3) *Build-Operate-Transfer (BOT) Agreements*, where the service provider builds and develops an operational facility for the client and at a future date transfers it to the client. The followings are some of the common elements in these agreements.

3.1 The Scope of Services

The agreement should clearly detail the services to be rendered and the resources to be used. Generally, any service beyond the scope listed in the agreement would attract additional fees. Often, agreements have a ramp-up provision for widening the scope and the fees that would be charged for these additional services. Such ramp-up provisions are required during peak times, or when a parallel service center, to which similar services have been outsourced, is unable to meet its obligations.

3.2 Service Levels

One of the most important objectives in outsourcing is to capitalize on the expertise and higher quality of services offered by the service provider. Thus, issues relating to service levels, such as the quantity and quality of the deliverables, performances to be measured, and methods for measuring the performance and service levels, become a critical part of the agreement. The parameters for service level measurements would depend on the type of the services. For example, if customer relations are outsourced, then the parameters could be the response time and the number of queries responded to in a given a period. The agreement should also specify the type and schedule for the periodic report on the performance of the services. It should precisely define the information that should appear on the reports. For example, *exception reports* for missed service levels and *trend reports* for key service levels. The schedule is important, because if the gap between two reports is large, the client may not receive an accurate picture of the service levels; and if the gap is too narrow, the service provider may not be able to perform the services at an optimum level. The agreement may also define the service provider's responsibility in conducting a root-cause analysis of service level failures and report the results to the client. The client should retain the rights to audit the service provider's performance on a regular basis. When possible, the client should provide the service provider with a handbook consisting of the standards, processes and operational procedures to be followed; any specific deliverables to be produced; specialized equipment to be used; hardware platforms and software environments; communication guidelines; organizational structure; number of resources with associated skill and experience levels for each specific activity/project; and any performance criteria to be met for

one or more of the operations undertaken by the service provider on behalf of the client.

3.3 Service Fees

Another important aspect of the agreement is the service provider's compensation for the services. The service fees could be a lump sum amount or based on a performance measure, such as the number of e-mails / phone calls responded to, the number of marketing calls made, and the number of hours spent on providing the services. Often, service fees are linked to the service levels, with the service provider being provided extra credits when it performs above the prescribed service levels, or penalties when the levels are not met. While determining the fees payable to the service provider in some agreements (e.g. captive outsourcing) would have tax implications, such as the transfer pricing, which are discussed later in the chapter. In a BOT model, both parties may agree to split the capital expenditure and work at lower service fees.

3.4 Managing the Service Provider

Even when a client outsources its business process, it would retain some degree of liability associated with the process. Therefore, the agreement must (i) ensure that the service provider has a team of dedicated and qualified personnel to handle the underlying transaction with the required level of accuracy and responsibility; (ii) outline a condition prohibiting the removal of a senior member of the service team without approval of the client, as the person would have gained a comprehensive understanding of the client's needs and any replacement would require some time to achieve the same degree of familiarity. Any transition in the key personnel should take place in a phased manner approved by the client. This is critical for ensuring stability and consistency in the management of the project. Additionally, the agreement may define the training requirements for the personnel working on the transaction, seek reports on performance levels of individuals, and require the service provider to have the latest technology and infrastructure. The agreement may also prohibit or define specific guidelines for the service provider from subcontracting / assigning its services to a third party without the client's consent.

3.5 Coordination of Project Activities

Coordination of activities between the client and service provider is important for the success of the project (Kraut et al. 1999; Sabherwal 2003). The agreement should define the protocol structure, frequency, and levels of coordination. Typically, at least one person is appointed on each side as a contact person, who receives all important communications. The person should have the security

clearance to handle the confidentiality of the data or to mask the private information before forwarding the communications.

3.6 Intellectual Property (IP)

Outsourcing often involves using, sharing, or generating important intellectual properties (IP), such as a specialized/patented business process, software, or information system. Thus, the agreement must discuss issues related to IP. These issues include the licensing or assignment of copyrights, trademarks and patents, and depend on who has or will retain the rights of the IP.

IP Owned / Licensed by the Service Provider: If the service provider claims that it owns the right to use the IPs required to provide the services, the client should examine the license agreement of each IP or seek a representation and warranty stating the validity of the right to use it and ensure that it does not violate the IP of any third party. The use of any infringing software without proper license by the service provider may extend the liability to the client or increase the risk of disruptions in services, when the service provider is indicted. If the service provider does not adhere to the terms and conditions of the license, the license could be terminated. This could have an adverse effect on the services being offered to the client. Thus, the agreement should normally impose an obligation on the service provider to do all that is necessary to maintain the license's validity. The agreement should provide a way to allow the client to seek an indemnification against any suit that may be brought against it due to an IP infringement by the service provider. The service provider may also own an IP that it uses to perform the services under the agreement. In such a case, the service provider should be obliged to ensure that it continues to own the IP during the term of the agreement.

IP Owned / Licensed by the Client: The client may provide the service provider with operations manuals, systems documentation, and even computer hardware and software in order to perform the outsourced services. If the IP is not owned but licensed by the client, the license should be extended to allow the legal use of the IP by the service provider for the client. The service provider should be able to seek an indemnification from the client against any suit that may be brought against the service provider due to the infringing software. The agreement should also include a license for the use of the client's trademarks by the service provider in providing service and/or in marketing efforts. The agreement must stipulate how and for what activities the trademarks may be used. This is important to avoid a loss of goodwill due to the acts of the service provider. In addition, the service provider may have access to confidential information, patented innovations, trade secrets, and other classified IP of the client to provide services. The agreement should ensure that the IP is protected by the service provider with the same vigor as by the client. Additionally, it should insure that the service provider does not use the IP for any other purposes than providing services to the client or sub-license to a third party.

Jointly Developed IP: Intellectual property may be developed by the service provider while providing services to the client. The agreement should clearly indicate who will own such IP. Usually, such IP would vest with the client and an obligation is imposed on the service provider to assign such IP to the client. The agreement would have to specify whether the customer is under any obligation to make additional payments for the assignment of such IP. If so, the agreement should identify the related payment rules and calculation formulas. Alternatively, both parties could be co-owners of the IP and share the revenues received by licensing such IP to a third party.

3.7 Privacy and Data Protection

While providing services, the service provider would have access to personal and confidential data of the client's customers. The client would usually be under a contractual, regulatory, and/or ethical obligation to protect the privacy of its customers. Therefore, both the client and service provider should take steps to ensure that they have minimized the risks of an unauthorized access to confidential information. Understanding the impact of privacy laws on one's business is the first step. They should appoint a privacy team that identifies and assesses compliance needs, and develops and communicates compliance policy. An appropriate team might include representatives from HR, legal, marketing, communications, technology, finance, and corporate strategy areas. Corporations such as IBM, Microsoft, and AT&T have even appointed "Chief Privacy Officers" to lead their efforts in meeting privacy compliance requirements. In recent years, the attention toward privacy issues has increased significantly along with the global developments in privacy regulations. Some of such developments and their implications are described below.

Privacy Laws in the U.S.: The U.S. has favored self-regulation for privacy protection, and until recently, there were few privacy laws to consider in outsourcing transactions. However, due to increasing pressure from consumer protection groups, a variety of legislations addresses privacy issues and data protection. Some of them are: the Gramm-Leach-Bliley Act, which governs personal financial information; the Health Insurance Portability and Accountability Act (HIPAA), which covers health and medical information; and the Children's Online Privacy Protection Act (COPPA), which governs information collected online from children under the age of 13.

EU Directive on Data Protection: Outside of the U.S., privacy regulation is developing at a rapid pace. Multinational companies, or companies that receive data from other countries, may be subject to local privacy regulations. The European Union (EU) has been a leader in enacting and enforcing privacy regulation. For example, the EU's Directive on Data Protection provides several rules that companies in the EU have to comply with while collecting and using

personal information. In addition, it establishes a general rule that data should be transferred to a non-EU country, only if they are adequately protected there.

Indian Laws on Data Protection and Privacy: Currently, the Indian legal regime does not have a specific legislation for privacy and data protection. However, Indian courts have interpreted the right to privacy as an unarticulated fundamental right against an action by the state. Though the Information Technology Act, 2000 ("IT Act") addresses the issue of protecting privacy rights, it only protects privacy rights from government actions. It is unclear whether such protection would be extended to private actions. Since the lack of adequate privacy protection in India may act as a disincentive for companies in the EU to outsource business processes to Indian companies, India is expected to enact legislation addressing the issues of privacy and data protection in near future.

An amendment to the IT Act has been proposed to plug the loopholes and check aberrant employee behavior in the BPO sector by including restrictive provisions in the IT Act. Chapter 9 of the IT Act, which deals with penalty for damage to computer, resources in general, has introduced a specific provision (section 43(2)) in which a corporate body handling sensitive personal information is made liable, if it fails to implement and maintain reasonable security practices and procedures. The Indian judiciary has been open to appreciate the need for data protection, were in early this year the Delhi High Court had awarded damages to the tune of Rs. 1,795,000/- (approximately USD 44,886) against defendants for illegal use of protected data (*Microsoft Corporation* v. *Mr. Yogesh Papat,* MANU/DE/0331/2005). This shows the intention of the legislature and judiciary in India to curb offences related to intangible property like computer resource by imposing punitive damage (up to Rs. 10 million under the proposed section 43(2)).

Language of Section 66 of the IT Act, which relates to computer related offences, has been revised to be in lines with Section 43 of the IT Act, related to penalty for damage to computer resource. Section 72 of the IT Act imposes liability on intermediaries, who have access to any information and when such information is disclosed without the consent of the person who owns the protected data. Under the proposed amendment the intermediary found in breach would be liable to compensate up to Rs. 2.5 million to the person so affected.

The IT Act proposes to inject higher evidentiary value to electronic contracts by accepting electronic records in evidence and not denying validity or enforceability of electronic records. The Indian Evidence Act, 1872 (Section 3) has also been amended to expand the scope of the term "evidence" to include electronic records.

3.8 Employees and Subcontractors

In order to ensure control over the manner in which the services are provided, restrictions should be implemented through the agreement to prohibit the service provider from subcontracting or assigning its services to a third party without the

client's consent. The outsourcing agreement should also include provisions under which the service provider is required to obtain duly executed non-disclosure and IP assignment contracts from its employees and subcontractors. Alternatively, the client should have an option to obtain copies of the contracts procured by the service provider. This is to ensure that the employees and subcontractors are properly bound by confidentiality obligations and any IP created by them is transferred to the client directly or through the service provider. In India, "work for hire" concept does not exist (except in the case of employer-employee relationship); therefore, accurately drafted IP assignment contracts with sub-contractors are necessary. The client may also include its own specific policies in the contracts and have them abided by the employees and subcontractors of the service provider.

3.9 Other Issues in Agreements

3.9.1 Non-compete Provisions

Outsourcing often involves imparting business secrets on both sides, especially from the client to the service provider. The agreement should include a non-compete clause that prohibits either company from entering into the business of the other company during the time the agreement is effective and even afterwards for a certain period. The non-compete clause should also be extended to senior management to avoid them setting up a separate competing company. Both parties would have to negotiate a fair and enforceable non-compete clause along with an exclusivity clause as a bargaining chip. It should be examined to what extent the non-compete provisions are enforceable in the outsourcing country and draft the clause accordingly. Additional restrictions could be also imposed on the service provider by which the service provider or the employees of the service provider, who render services to the client, do not render services to the client's competitors within a stipulated period.

3.9.2 Non-solicitation Provisions

The client may often seek to hire high-skilled employees of the service provider. Losing those key personnel may jeopardize the ability of the service provider to renew the project in the future and continue a strong relationship with the client. Therefore, the agreement should include a non-solicitation clause, in which either company may not raid on the human resources of the other company.

3.9.3 Labor/HR Issues

In the case of BOT Agreements, HR issues should be tackled carefully, as the service provider's employees will be transferred to the client at a later date. Both

the BOT agreement and employee agreements should be drafted carefully to avoid any legal and tax implications for the company or the employees.

3.9.4 Representations, Warranties and Indemnities

Like any other commercial agreement, the outsourcing agreements should contain representation, warranties (R&W), and indemnity clauses. These clauses are fiercely negotiated, especially when the parties are unrelated. Breach of R&W would typically (i) trigger indemnity clause and (ii) be termed as one of the grounds of termination of the agreement. When parties are from different jurisdictions, care should be taken to understand the meaning and interpretation that is likely to be ascribed to any R&W under the governing law. This is even more important when R&W involves ambiguous subjective language, e.g. *"services shall be provided in accordance with generally accepted industry practices within the US"*.

The agreement would contain a general indemnity clause that the indemnifying party should indemnify the other party for losses, damages, and other costs, in a case of the breach of any obligation. In early days of the BPO industry, when service providers were eager to get business, they usually agreed to have such general indemnity clauses. But in recent times service providers have balked against such blanket indemnities and negotiate specific indemnities.

3.9.5 Limitation of Liability

The service provider should negotiate a limitation of liability provision in the contract, whereby the service provider's liability could be limited only to the extent of the fees being paid by the client or to the extent that the loss or damage is on account of a default on the service provider's part.

3.9.6 Technology and Infrastructure

The agreement should also specify that the service provider has the latest technology and infrastructure to render the services in the most efficient manner. If an upgrade is required in the hardware and software to maintain the service level, such upgrades must be made in a timely manner.

3.9.7 Disaster Recovery

Detailed provisions on disaster recovery have become part of the outsourcing agreements specifying periodic back up, remote site for storage of the back-up, and the standard of infrastructure to be maintained for the disaster recovery site.

3.9.8 Insurance

The service provider should be required by the client to maintain certain specified insurance cover. The service provider should obtain Employer's Liability Insurance, Worker's Compensation Insurance, Comprehensive General Liability Insurance etc. The client should examine the policies and, if necessary, require the service provider to obtain additional cover for specific liabilities, though service providers are often reluctant to obtain client specific insurance cover. The client should also make sure that it is named as the beneficiary in the client-specific insurance policies.

3.9.9 Security Provisions

When the service provider has an access to the facilities and information systems of the client, the agreement should contain detailed security provisions – such as limitations on the access, purpose of the access, process and records to be maintained for the access, and authorized personnel who would be entitled to the access and audit.

Overall, the definitions of the terms used in the agreement should be complete and unambiguous. Sincere efforts should be made by both parties in identifying possible future scenarios in their relationship and incorporate related terms and conditions in the agreement to avoid disruptions and conflicts in the future. Known issues should not be left to be decided in the future. For example, avoid using terms such as "to be mutually decided in the future," because when the relationship between the parties sours, such mutual agreement would be difficult to reach. The documentation of some of the issues in agreement may not appear to require the same rigor as is customarily applied to the more obvious "legal" provisions in the terms and conditions at the time of drafting the agreement. In those cases, the exhibits/appendices of the agreement should set out numerous important obligations. Complete and accurate content in the exhibits is integral to the successful operation of the relationship between the customer and the supplier. Placing sufficient focus on the exhibits early and consistently throughout the transaction cycle will allow the parties the time to negotiate and document appropriate terms and ensure the consistency of the exhibits with the terms and conditions of the agreement.

4 Project Term and Termination

This is a very important aspect in offshore outsourcing projects. It includes the clauses related to the length of the agreement, conditions and procedures for early termination, and any specific rights for the renewal of the agreement.

4.1 Automatic Renewal

Many outsourcing projects, specifically BPOs, are long-term projects and have high rates of renewal. The agreement usually specifies that the term of the agreement would be renewed automatically, unless one of the parties expressly terminates the agreement. An advance notice clause is usually included to allow for transition and other follow up actions.

4.2 Early Termination

Since both sides have invested materially and operationally in the outsourcing project, it is usually expected to complete its full term. An unexpected, early termination may adversely affect at least one of the sides. The client would have to find another service provider or back-source the project. The service provider may not get the expected revenues to offset its investment in human and infrastructural resources. However, both parties would also like to have an exit option, if the relationship does not turn out to be favorable.

4.2.1 Termination for Default

The agreement should grant an aggrieved party the right to terminate the agreement, if the other party commits a material default or there is a material breach of its representations and warranties. Such material default on the part of the service provider would include: continued failure to comply with service levels, a change of control of the service provider, breach of confidentiality and IP provisions, and a violation of exclusivity obligations. Material default by the client would be continued nonpayment of service fees.

4.2.2 Termination for Convenience

The parties may also have a right to terminate the agreement, even if there is no default by the other party. Such termination would usually require the payment of an early termination fee and sufficient notice to the other party.

4.3 Transition

If the relationship between the parties comes to an end, either due to termination or due to expiry, a transition phase, during which the service provider would continue to provide services, is included in the agreement. In this phase, the service provider may be required to train certain persons designated by the client, provide documentation of the processes, and do other acts that are required for a smooth transition. The client may insist on having the right to purchase the assets and infrastructure that are being used to provide the services and employ the

persons on the team that were providing such services. The transition clauses also cover the effects of termination on various aspects such as payment of outstanding fees, escrow, IP and confidential information, and current work orders.

5 Tax Implications

While it is often ignored, outsourcing projects, specifically offshore ones, have significant implications from the taxation perspective. These implications should be carefully considered when deciding the structure of outsourcing operations. If the foreign company sets up a subsidiary in India, the Indian subsidiary would be subject to a 33.66% tax (inclusive of surcharge of 10% and education cess of 2%) on its net income. If the foreign company sets up only a branch office in India, the branch could be regarded as a permanent establishment (PE) of the foreign company in India and hence be taxed at 41.82% (inclusive of 2.5% surcharge and 2% education cess) on its net income. Some locations have several additional tax benefits offered to offshore outsourcing. For examples, BPO activities in India are entitled to tax holidays under section 10A and section 10B of the Income Tax Act, 1961 till March 31, 2009. Units set up by these companies in Free Trade Zones (FTZs), Electronic Hardware Technology Parks (EHTPs), Software Technology Parks (STPs), or Software Export Zones (SEZs) are entitled to certain exemptions on profits generated from exporting articles, things, or computer software, which includes IT enabled services such as data processing, data entry and conversion, data analysis and control, and data management call center operations. Dividends declared by Indian companies are not taxable in the hands of the shareholders, though the companies distributing dividends are required to pay a dividend distribution tax of 14.025% (inclusive of 10% surcharge and 2% education cess).

The parties to a BPO agreement may also be required to comply with transfer pricing regulations. The income arising from an international transaction by associated enterprises should be computed based on an arm's length price. The definition of the term "associated enterprises" under the Income Tax Act, 1961 is often broad. For example, in India, if one enterprise holds shares either directly or indirectly, holds at least 26% of the voting power of the other enterprise, or advances a loan to the other enterprise equal to at least 51% of the book value of the total assets of that other enterprise, the parties may be regarded as associated enterprises and would be required to comply with transfer pricing regulations.

As stated above, when a foreign company were to operate through a branch office or have a place of management in India, it would be regarded as a permanent establishment (PE). The profits of the foreign company, attributable to such PE, would be taxed in India. A subsidiary would not be regarded as a PE, except in the cases when it does not have significant independent activities of its own. Having an agent does not constitute a PE, but if the foreign company executes mass

contracts made on standard forms without being scrutinized by it, then the agent may constitute a PE. It may be observed that the determination of a PE is very subjective and it is critical to structure operations accordingly to avoid exposure to negative tax implications and double taxation.

When a foreign company outsources the whole or part of its core revenue generating business activities such as the services of a travel agent, software developer, software maintenance, investment consultant, debt collection service, etc. to a BPO unit in India and the BPO unit renders the services either directly to the customers abroad or through the non-resident principal, then profits attributable to the BPO unit in India would be taxable in India if Indian BPO unit constitutes a PE of the foreign company in India. Thus, if the core activities of foreign companies are outsourced to India, a larger share of its profits could be attributable to Indian PE. Thus, the classification of activities into core and non-core would be of prime importance in order for the determination of amount of profits that are attributable to the PE in India. Given the recent emergence of BPOs, the taxation policies related to BPO operations are still evolving and the new rules come about and old rules undergo changes frequently to promote, protect, or benefit from the phenomenon.

6 Governing Law and Jurisdiction

Parties would typically prefer to have the agreement governed by the laws of and be subject to the courts in their respective home countries. As a compromise, they may agree to have the agreement governed by the laws of a foreign country that has no nexus with the parties or the agreement. Sometimes in Indian offshore outsourcing agreements, the laws of England is chosen, because the legal system in England is well established and often preferred by the clients from the US or Europe over the legal system in India. However, it should be noted that conflicting views exist as to whether an agreement can be governed by the laws of a country that has no nexus with the parties or the agreement. Therefore, it should be preferred to choose the governing law of either the client's country or the service provider's country. The agreement may have a combination in which certain clauses are governed by the laws of the customer's country and the others by the laws of the service provider's country.

6.1 Alternate Dispute Resolution (ADR)

Given the cost and length of getting issues resolved through the traditional legal systems involving foreign jurisdictions, parties often resort to alternate dispute resolution (ADR) mechanisms such as arbitration. The clause for arbitration as the

first choice is often included explicitly in the agreement. Arbitration is usually held in accordance with the Rules of the

International Chamber of Commerce (ICC) or the London Court of International

Arbitration (LCIA) for international commercial arbitration. More recently, some agreements subject themselves to arbitration in the Singapore International Arbitration Centre (SIAC).

6.2 Enforcement of Foreign Awards and Judgments

When a dispute is arbitrated or litigated, the outcome award or decree has to be enforced against the parties. Such enforcement can occur within or outside of India.

6.2.1 Enforcement of Foreign Awards in India

India is a signatory to the New York Convention on The Recognition and Enforcement of Foreign Arbitral Awards, 1968 (NYC). Thus, if a party receives a binding award with respect to a commercial dispute from another country that is a signatory to the NYC and is recognized as a reciprocating country by India, the award would be enforceable in India. However, the courts in India may refuse to enforce a foreign award under certain conditions such as incapacity of the parties, noncompliance with the agreed arbitration procedure, and non-adherence to the principles of natural justice. Enforcement may also be refused, if the subject matter of the award cannot be settled upon by arbitration under the laws of India or if the award's enforcement would be contrary to the public policy of India.

6.2.2 Enforcement of Foreign Judgments in India

A foreign judgment may be enforced by filing a suit upon judgment under Section 13 of the Code of Civil Procedure, 1908 (CPC); or by proceedings executed under Section 44A of the CPC, provided that the judgment is rendered by a court in a "reciprocating territory." A "reciprocating territory" is one that is deemed so by the Government of India under section 44A of the CPC. For instance, the U.K. has been deemed by the Government of India to be a "reciprocating territory," while the U.S. has not been considered as such. However, a foreign judgment cannot be enforced in India under certain circumstances, such as when the judgment has not been pronounced by a court of competent jurisdiction, the decision is not on the merits of the case, the principles of natural justice have been violated, or when the judgment violates the public policy of India.

Injunctive Reliefs: If there is an arbitration clause in the outsourcing agreement, the customer would be entitled to file a petition in Indian courts under provisions of the Arbitration and Conciliation Act, 1996 praying for interim injunctions to

prevent breaches of the Agreement. Such petition can be filed even before the arbitration proceeding is commended or during pendency of the arbitration proceedings or even after the award is delivered.

Damages: In India, court cases often reach final hearing after five to ten years from the date of their filing. The damages are awarded only after the final hearing of the suit. However, at the interim stage the court may order the defendants to preserve their accounts in respect of subject matter of the suit. The court may appoint a commissioner to investigate the accounts and submit a report to the court. Based upon the commissioner's report, the court may determine the amount of damages.

Traditionally, Indian courts have been conservative in granting damages and used to award only nominal damages. However, recently the courts have recognized the need to grant actual as well as punitive damages in intellectual property infringement matters. The parties are free to decide liquidated damages in case of specified breaches and the courts will generally award such specified damages.

6.2.3 Enforcement of Awards and Judgments Outside India

To determine the modalities for the enforcement of an Indian award or judgment in a foreign jurisdiction, it is necessary to examine the procedural laws of the foreign country in question. Every country has different ways and procedures for enforcing awards and judgments from foreign jurisdictions.

6.3 Applicability of Foreign Laws

Offshore outsourcing exposes companies to the laws of the multiple jurisdictions in which they conduct business. Non-compliance with foreign laws could expose a company to significant liabilities. For example, an Indian call center offering outbound services to a U.S. company would be required to comply with certain U.S. regulations, e.g. honor the "Do-Not-Call" registry or limit calls between 8 a.m. and 9 p.m. local time. This presents a significant operational challenge for Indian call centers or they would be in a state of volatility and vulnerability. This would require the parties to build sufficient controls in its systems to ensure compliance with local regulations.

In addition, the companies should be aware of particular industry-specific regulations that have implications on outsourcing transactions. This is of significant importance in heavily regulated industries, such as financial services or healthcare services. For example, in the insurance industry, U.S. state laws require persons providing administrative functions, including claims administration and payment, marketing administrative functions, and coverage verification to obtain Third Party Administrator Licenses to carry out such activities. Further, Office of the Comptroller of the Currency notes (OCC 2001), "a [financial institution's] use

of third parties to achieve its strategic goals does not diminish the responsibility of the board of directors and management to ensure that the third-party activity is conducted in a safe and sound manner and in compliance with applicable laws. Thus, many third-party relationships would be subject to the same risk management, security, privacy, and other consumer protection policies that would be expected if a national financial institution were conducting the activities directly."

7 Negotiation

Negotiating an outsourcing project can often be a very complex process. The inhibiting factors include the lack of awareness of the outsourcing process, loss of control over the project, loss of core competencies, resistance to change, disgruntled employees, and difficulties in reversing the project once it has started. It is necessary to form a team that would handle the entire outsourcing project beginning with planning and negotiation to execution. This team should consist of people who have experience in different areas. Personnel with both management and technical skills should be on the team as well as the users of the services. In addition, the team should include external domain experts, such as:

- *Consultants*: They can help develop strategies for the project, help manage the project team, improve teamwork, reduce project cycle times, deal with human resources issues, change management, etc.
- *Lawyers*: They can help in negotiations, setting terms, drafting agreements, etc.
- *Accountants*: They can help analyze the cost effectiveness of a project, revise current accounting and auditing practices, etc.
- *Tax Strategists*: They can help identify tax implications and develop new tax strategies as the fixed costs turn into variable costs as a result of outsourcing.
- *Technology Experts*: They can help develop the required information technology infrastructure and systems to effectively manage and monitor outsourced activities.
- *Benchmarking Specialists*: They can help in comparing the costs and benefits associated with the project with those achieved by other organizations in the same industry and other industries.

As discussed earlier, the foundation of an outsourcing relationship is in the contract, which details the complex terms and conditions that govern the relationship. Therefore, the contract should be negotiated carefully - keeping in mind business, operational and legal risks - to ensure the long-term success of the

outsourcing arrangement. A negotiation sub-committee should be set up from the above-discussed team. The sub-committee should consist of representatives well versed in dealing with all aspects of the contract, including operations, management, finance, and legal issues. It should document all discussions pertaining to the transaction, to ensure that no stone is left unturned and that the team is on common ground with respect to the general approach towards the negotiation.

The approach towards negotiations should always be a balanced one. On a scale of 0 to 100, where '0' represents an adverse term and '100' represents a favorable term in the agreement, the goal should be to ensure that the entire negotiation process falls in the "35 to 65" band. A balanced approach will lead to a better understanding of the other party's interests and will result in successfully clinching the deal, ultimately creating a harmonious long-term relationship. Given the higher power of bargaining, the client may impose the stringent restrictions in order to maintain some control over the operations that are outsourced. While such measures provide a degree of comfort to the client, an excessive amount of control may become an administrative burden or amount to "managing" the service provider.

Figure 2 represents a typical negotiation process. It is prudent to begin any negotiation with the term sheet that records the initial understanding of the parties on certain basic issues. The term sheet is the condensed version of the agreement and could be in the table format. This approach helps parties compartmentalize issues and concepts to sort out macro level terms (including business terms), and to assess their capabilities and expectations. The term sheet could be binding or non-binding, should have at least binding confidentiality and no-shop clauses, and a termination clause and the effects of termination. Detailed agreements should be signed within a specific period. It is often noticed that the pending negotiation of final contract are still underway when the service provider commences work. In such cases it would be prudent to at least have a term sheet in place setting forth the commercial understanding of the parties.

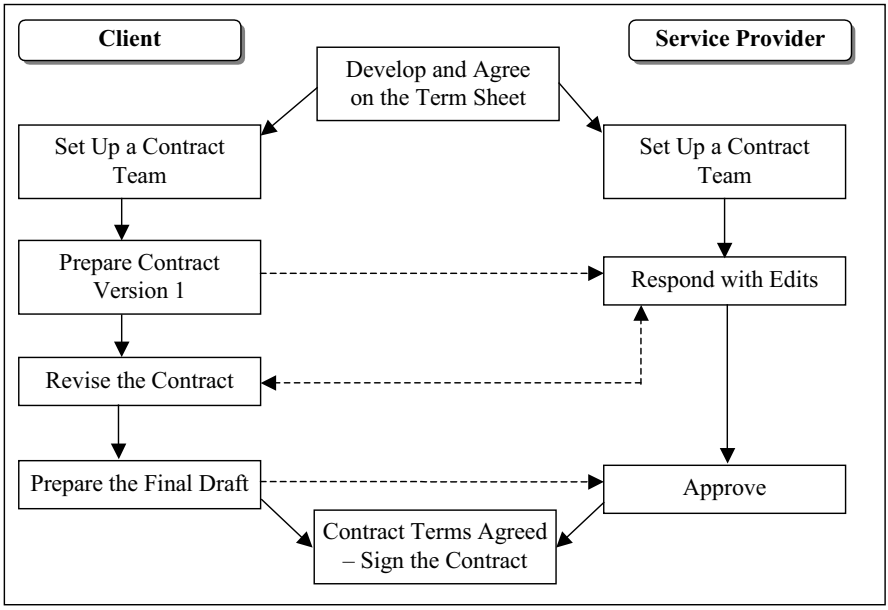


Figure 2: Negotiation Process

8 Conclusion

Outsourcing, specifically offshore outsourcing, is a complicated endeavor involving legal and tax issues across multiple jurisdictions. Both the client and service provider should pay special attention to understanding and complying with the laws and regulations that affect the services that are outsourced. It is essential to understand the overall legal framework of the outsourced country, specifically– court system; laws relating to contracts, intellectual property, data protection, confidentiality, employment; their enforceability; availability of injunctive remedies and damages; and enforcement of foreign judgment and awards.

Both parties should stay informed about new legislations in order to revise the legal aspects of their relationship on the continual basis. However, it is often difficult for a company from one country to keep abreast of the latest legislations in foreign jurisdictions. Hence, an obligation may be imposed on the client to update the service provider and vice versa about the laws and amendments that may affect their relationships. Even after such updates, if the other party does not comply with these laws, an indemnity obligation may be imposed on it. Thus, it is important that the parties involved in the outsourcing transaction work together to evaluate their risks and ensure that the burden of compliance is balanced.

In this chapter, we have provided an overview of legal and tax issues involved in outsourcing. It, however, should not be construed as a legal opinion. Even if the parties are aware of the legal and tax regimes affecting their outsourcing projects, they should seek services of legal and tax professionals in drafting outsourcing agreements. Even a small mistake or ambigouity can have significant ramifycations, when conflicts arise in the relationship.

References

Brody, R.G., Miller, M.J., and Rolleri, M.J. "Outsourcing Income Tax Returns to India: Legal, Ethical, and Professional Issues," *CPA Journal* (74: 12), December 2004, pp. 12-14.

Bryson, N., and Ngwenyama, O.K. "Structuring Is Outsourcing Contracts for Mutual Gain: An Approach to Analyzing Performance Incentive Schemes," *Journal of the Association for Information Systems* (1: 9), 2000, pp. 1-14.

CIIOnline "Join a KPO, Earn a Fortune," Report, Confederation of Indian Industry, October 5, 2005. (http://www.ciionline.org/news/newsMain.asp?news_id=1052005103638AM)

Frank, S.J. "Source out, Risk In," *IEEE Spectrum* (42: 4), April 2005, pp. 60-62.

Gopal, A., Sivaramakrishnan, K., Krishnan, M.S., and Mukhopadhyay, T. "Contracts in Offshore Software Development: An Empirical Analysis," *Management Science* (49: 12), December 2003, pp. 1671-1683.

Harris, A., Giunipero, L.C., and Hult, G.T.M. "Impact of Organizational and Contract Flexibility on Outsourcing Contracts," *Industrial Marketing Management* (27: 5), 1998, pp. 373-384.

IDC "Worldwide and U.S. Offshore It Services, 2004-2008 Forecast: Tracking the Shift in Offshore Spending," Report # 31911, International Data Corporation, Framingham, MA, October 2004, pages 64.

Ilie, V., and Parikh, M.A. "A Process View of Information Systems Outsourcing Research: Conceptual Gaps and Future Research Directions," the Tenth Americas Conference on Information Systems, Association for Information Systems, New York, 2004, pp. 3561-3569.

Kraut, R., Steinfield, C., Chan, A.P., Butler, B., and Hoag, A. "Coordination and Visualization: The Role of Electronic Networks and Personal Relationship," *Organizational Science* (10: 6), 1999, pp. 722 - 740.

Miller, R.I., and Anderson, A.W. "Legal and Ethical Considerations Regarding Outsourcing," *Journal of Accountancy* (197: 3), March 2004, pp. 31-35.

OCC "Third-Party Relationships: Risk Management Principles," Report # OCC 2001-47, Office of the Comptroller of the Currency, November 1 2001.

Sabherwal, R. "The Evolution of Coordination in Outsourced Software Development Projects: A Comparison of Client and Vendor Perspectives," *Information and Organization* (13: 3), July 2003, pp. 153-202.

Short, G. "Don't Skip on the Details: Structuring and Documenting the Real Content of Outsourcing Agreements," *Outsourcing Journal* (2002: April), 2002. (http://www.outsourcing-journal.com/apr2002-legal.html).

Smith, A. *The Wealth of Nations (Based on the Edition Published in 1784)*, The Modern Library Classics, 2000.

Tapper, D. "U.S. Customer Experiences and Best Practices When Going Offshore," Report # 31179, International Data Corporation, Framingham, MA, May 2004, pages 65.

Measuring and Managing IT Outsourcing Risk: Lessons Learned

Benoit A. Aubert, Michel Patry, and Suzanne Rivard

HEC Montréal, 3000 Chemin Côte Ste-Catherine, Montréal, Canada H3T 2A7,
CIRANO, 2020 University, 25th floor, Montréal, Canada H3A 2A5

1 Introduction

"You'll never have all the information you need to make a decision – if you did, it would be a foregone conclusion, not a decision" (Mahoney, 1988, p.156).

Risk is inherent to almost any business decision. New product development, capital investments, and implementation of state of the art technology are often used as examples of risky business ventures; while they may lead to major benefits, they may also result in important losses. Outsourcing decisions, and contractual arrangements of the type required by an IT outsourcing deal, are another example of a risky business endeavor. While it can lead to lower costs, economies of scale, access to specialized resources, and new business ventures (Gupta and Gupta, 1992; Huff, 1991), outsourcing can have unwanted outcomes such as escalating costs, diminishing service levels, and loss of expertise, to name a few (Earl, 1996; Gack, 1994 ; Lacity and Hirschheim, 1993).

This is not to say that outsourcing is bad in itself. It only means that, as in other risky business ventures, risk assessment and risk management are important contributors to the success of an IT outsourcing venture (Rao, Nam and Chaudhury, 1996). During the past decade, we have conducted a number of studies on IT outsourcing in general (Aubert et al. 1996b, Aubert et al. 1999) and on IT outsourcing risk management in particular (Aubert et al. 1998; 1999; 2001; 2003). In this paper we draw upon this research to provide a synthesis of the main lessons on IT outsourcing risk and risk management we have learned over the years.

The paper first defines the concepts of risk and of risk exposure and applies these definitions to the context of IT outsourcing risk. It then presents a framework of IT outsourcing risk exposure. Finally, it presents four case studies, each of which led to a different set of lessons learned on how firms actually manage IT outsourcing risk.

1.1 Risk Defined

Risk and risk management have been studied in many domains, such as Insurance, Economics, Management, Medicine, Operations Research, and Engineering. Each field addresses risk in a fashion relevant to its object of analysis, hence, adopting different perspectives of risk and of risk management. Since it is essential that the conceptualization of risk and of risk management adopted in a study be consistent, authors ought to clearly state the perspective they are adopting in their study of risk. This section reviews the main perspectives of risk and of risk management adopted in various fields, and then presents the perspective we adopted to study IT outsourcing risk and risk management.

Risk as an undesirable event. In some situations, risk is equated to a possible negative event. Levin and Schneider (1997; p. 38) defines risks as *"... events that, if they occur, represent a material threat to an entity's fortune"*. Using this definition, risks are the multiple undesirable events that may occur. Applied in a management context, the "entity" would be the organization. Given that perspective, risks can be managed using insurance, therefore compensating the entity if the event occurs; they can also be managed using contingency planning, thus providing a path to follow if an undesirable event occurs. This definition of risk is analogous to the concept of risk as a possible reduction of utility discussed by Arrow (1983).

Risk as a probability function. Some fields, instead of focusing on negative events, are primarily concerned with the probabilities of an event. For example, medicine often focuses solely on the probability of disease (e.g. heart attack), since the negative consequence is death in many cases. It would be useless to focus on the consequence itself since it is irreversible. Odds of occurrence are the key element. Data is used to determine what can influence those probabilities (heredity, smoking habits, cholesterol level, etc.). In its definition of sentinel events (occurrence involving death or serious injury), the Joint Commission on the Accreditation of Healthcare Organizations uses "risk" as *the chance of serious adverse outcome* (Kobs, 1998).

Life insurance adopts this approach and uses mortality tables to evaluate these probabilities. In this context, a "good risk" will be a person with a low probability of dying within a given period (and hence, for the insurance company, a low probability of having to pay a compensation) and a "bad risk" would be a person with a high probability of dying within the period.

Risk as variance. Finance adopts a different perspective of risk, where risk is equated to the variance of the distribution of outcomes. The extent of the variability in results (whether positive of negative) is the measure of risk. Risk is defined as the volatility of a portfolio's value (Levine, 2000). Risk management means arbitrating between risk and returns. For a given rate of return, managers will prefer lower volatility but would be likely to tolerate higher volatility if the

expected return was thought to be superior. Portfolio managers therefore aim to build a portfolio that is on the efficient frontier, meaning it has *"the highest expected return for a given level of risk, and the lowest level of risk for a given expected return"* (Schirripa and Tecotzky, 2000; p. 30).

Risk as expected loss. Other fields, such as casualty insurance, adopt a perspective of risk as expected loss. They define risk as the product of two functions: a loss function and a probability function. Car insurance is a good example. In the eventuality of an accident, there is a loss function that represents the extent of the damages to the car, which can range from very little damage to the total loss of the car. There is also a probability function that represents the odds that an incident will occur. The expected loss (risk) is the product of these two functions (Bowers et al. 1986).

While in certain circumstances, the probability of occurrence of an undesirable outcome can be estimated on the basis of past performance characteristics of the object under study (Linerooth-Bayer and Wahlstrom, 1991), in several areas, probabilities are often difficult, if not impossible to assess on the basis of past performance (Barki, Rivard, and Talbot, 1993). Consequently, several risk assessment methods adopt the approach of approximating the probability of undesirable outcomes by identifying and assessing factors that influence their occurrence (Anderson and Narasimhan, 1979; Boehm, 1991; Barki et al., 1993). In a software development context, for instance, Barki et al. (1993) have identified such factors, which belong to five broad categories : technological newness, application size, software development team's lack of expertise, application complexity, and organizational environment. The degree to which each factor is present in a software project will contribute to increase the probability of occurrence of an undesirable outcome (here, project failure). Once this list is drawn, risk management methods try simultaneously to reduce the loss related to the undesirable event itself (such as penalties compensating for delays in the system delivery) or by reducing the probability of occurrence of such an event, by reducing the level of the risk factors (for example, by carefully selecting team members). While the definition of risk is not explicit about probability distribution, these probabilities (taking the form of factors) are taken into account when the risk evaluation is performed.

1.1.1 Endogenous and Exogenous Risk

Another important distinction in risk analysis is the notion of endogenous versus exogenous risk. Exogenous risks are risks over which we have no control and which are not affected by our actions. Earthquakes or hurricanes are good example of exogenous risks. Although we have some control over the extent of damage by selecting construction standards, we have no control over the occurrence of such natural events. Endogenous risks, on the other hand, are risks that are dependent on our actions. Car accident is an example of risk where a strong portion is

endogenous. While a driver has no control over other drivers (the exogenous portion), the probability of an accident is strongly influenced by the driver's behavior and ability (endogenous). The driver also controls part of the loss function, by deciding to drive an expensive car or a cheap car. This is why there is always a deductible amount with car insurance, to ensure that the driver will behave in a way that will minimize the endogenous portion of the risk. By being responsible of a portion of the damages, the driver is enticed to act with caution.

Risk management tools take into account whether risk is endogenous or exogenous. In finance for example, risk is considered exogenous. The methods used to manage risk are concerned with diversification, insurance, and allocation of assets. There is no direct action that managers can take to reduce the probability of a given event. In engineering or medicine, a portion of the risk is always endogenous. Risk management takes it into account. Patients are informed of the portion they control and are proposed more healthy diets and lifestyles, employees are provided with security guidelines and actions are taken to reduce directly the probability of undesirable consequences.

2 IT Outsourcing Risk

Our study of IT outsourcing risk management uses the expected loss perspective. When referring to the set of specific risks to which the firm is exposed, we will use the term risk exposure. Risk exposure is therefore defined as:

$$\mathbf{RE} = \sum_i \mathbf{P(UO_i) * L(UO_i)}$$

where $P(UO_i)$ the probability of an undesirable outcome *i*, and $L(UO_i)$ the loss due to the undesirable outcome *i* (Boehm, 1991; Teece et al, 1994). Therefore, we are considering simultaneously the potential losses associated with an outsourcing contract and the probability function of such losses.

It is important to note that only the negative side of the distribution of all potential events is considered in this definition of risk. Positive events are not considered. This approach is justified for many reasons. The main reasons are the overly positive attitude of managers entering in outsourcing contracts and the managerial perception of risk. These two reasons are briefly discussed in the following paragraphs.

Managers making decisions with respect to IT and outsourcing are often overly optimistic (Hirschheim and Lacity, 2000). They take their decision to outsource based on a best case scenario. There also seems to be inflation about reported outsourcing benefits (Saunders, Gebelt and Hu, 1997) which probably sustains this optimism. This overly confident view of the managers when entering into a

contractual relationship is in itself a sufficient reason to consider only the potential downsides of the contract when evaluating outsourcing risk. If managers based their analysis on a best case scenario, the only unpredictable events that can occur are undesirable. This may explain why, in the 61 outsourcing decisions reported by Lacity and Willcocks (1998), 56% of the managers indicated that expected cost savings were realized, 23% mentioned that expectations were not met while 21% could not tell. No one reported that cost savings exceeded expectations. This is a typical result when decisions are made according to a best case scenario, at the positive end of the possible outcome distribution.

This behaviour is consistent with the managerial perception of risk. March and Shapira (1987, p.1407)) reported that *"Possibilities for gain are of primary significance in assessing the attractiveness of alternatives (MacCrimmon and Wehrung, 1986), but "risk" is seen as associated with the negative outcomes."* In this sense, the behaviour of managers in weighing up outsourcing decisions is similar to generic manager's behaviour.

2.1 Assessing IT Outsourcing Risk Exposure

While theoretically risk exposure can be computed and a value of risk established in dollar terms, in practice it is more useful to map the risk exposure on a two-dimension plane (the usefulness of this representation will be discussed in the risk management sub-section). Figure 1 illustrates the mapping of risk exposure.

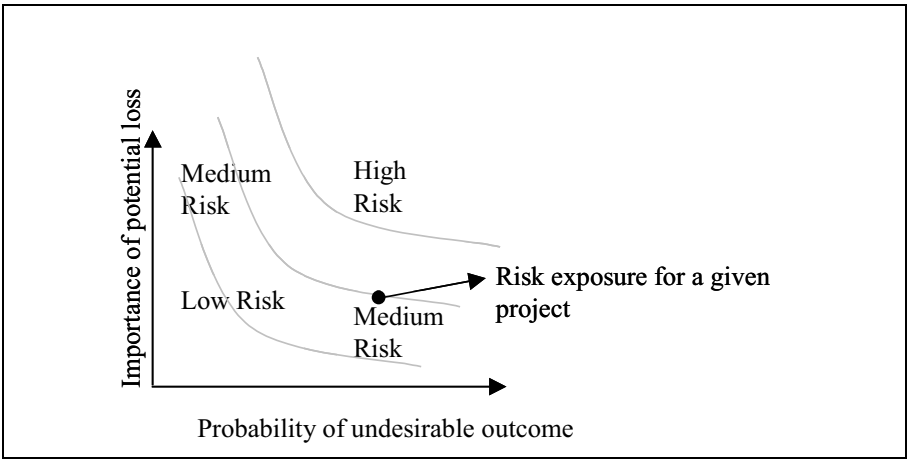


Figure 1: Risk Exposure

To evaluate risk exposure, it is therefore essential to identify the array of potential undesirable outcomes that could occur with respect to an outsourcing arrangement, as well as the probability of occurrence of such outcomes. In any

situation, several undesirable outcomes may occur. The loss due to a given undesirable outcome can be approximated either via quantitative analysis (for instance, by evaluating the amount of sales lost due to disruption of service to customers), via qualitative assessment of the organizational impact of each negative outcome (by using Likert scales to assess the importance of the impact of the undesirable outcome), or with comparison procedures like the Analytic Hierarchy Process (AHP). The probability of undesirable outcomes is assessed by identifying and measuring the factors that influence their occurrence.

The risk assessment framework relies mostly on Transaction Cost and Agency theories. These tackle directly the problems related to contracting and provide both a roadmap to potential negative consequences and their corresponding drivers (risk factors). A complete description of the theoretical background was given in Aubert et al. (1998). The following paragraphs briefly summarize the gist of the argument.

2.1.1 Foundations of Contractual Risk

Fundamentally, outsourcing is a contract in which a client relies on a supplier for a given service, instead of depending on internal provision. In this case, the client relies on the market rather than on employment contracts.

According to transaction costs theory, the decision to use the market to regulate a transaction will depend on: the specificity of the assets, the uncertainty surrounding the transaction, and the frequency of the transaction. The specificity of an asset creates a lock-in situation where a party could extract a quasi-rent from the contracting party by threatening to withdraw from the transaction. The usual manner to resolve the asset specificity constraint is to use long term contracts. However, uncertainty may preclude contract agreement since the parties cannot predict what will be needed in the future and, consequently, cannot write a contract (Williamson 1985, 1989). Severe measurement problems might also prevent contractual agreement since it becomes impossible to know if performance is attributable to one party's action or to externalities (Alchian and Demsetz, 1972). All contract provisions, to alleviate these problems, make contracting more costly. When these costs are too high, it might be cheaper to purchase the residual rights over the activities in exchange of a salary (Grossman and Hart, 1986). This contract enables one party (the employer) to choose, in the future, the actions appropriate to the context (Simon, 1991). Finally, a firm will prefer to bear the cost of the risk associated with specific investment or uncertainty rather than to invest in order to internalize a single transaction. Internal organization is only efficient for frequent transactions.

Agency theory is concerned with the client’s problem to choose an agent (outsourcer), motivate it and coordinate its decisions and behavior with those of the organization. The client wants the outsourcer to perform its tasks as required.

However, writing and enforcing complete contracts is utopia. The agency costs include the cost of writing and enforcing contractual agreements and the residual loss resulting from inadequate coordination or motivation. Agency theory tackles the important issue of designing efficient contractual agreements (Eisenhardt, 1989).

Agency theory generally distinguishes three main villains: *moral hazard, adverse selection,* and *imperfect commitment*. Moral hazard stems from the fact that it is impossible for a principal to observe an agent's behaviour at no cost. Since it cannot tell, and since the supplier knows this, the supplier can always blame poor performance on circumstances beyond its control. Cheating, shirking, free-riding, cost padding, exploiting a partner, or simply being negligent are everyday instances of moral hazard. Adverse selection will develop when the principal cannot observe the characteristics of the agent. Failure to deal adequately with adverse selection will make it very difficult for the client to choose the right supplier. The last potentially damaging manifestation of opportunism is imperfect commitment. For instance, clients and outsourcers may be tempted to renege on their promises and commitments, arguing unforeseen events like changes in requirements (Sappington, 1991).

Using this theoretical framework, a list of potential negative outcomes and associated risk factors has been developed and validated using case studies (Aubert et al, 1999, 2001). The risk factors have been validated using data from a survey of 132 IS executives (Bahli and Rivard, 2004). The potential negative outcomes are related to three main categories: service, costs (of various forms), and externalities.

2.1.1.1 Potential Negative Outcomes

Under the service label, two problematic situations can occur: the services delivered do not correspond to the ones the company needs or the service are of poor quality. The first case usually occurs when the company, after establishing in a detailed contract the services to be delivered, changes its needs over time. Then the services required differ from the ones stipulated in the contact. This leads to a negative consequence: costly contractual amendments. In the latter case, the services might be the appropriate ones, but their quality is not up to expectations. It is important to note that these problems can occur with internal provision. However, since the employment contract is more flexible than a market contract, services can be readjusted more easily when service is delivered in-house.

The second main category pertains to costs. Clients can face costs that were not anticipated: there can be transition and management costs that make the contract less profitable than anticipated. Switching costs (preventing repatriation or transfer to another supplier) can be built over time, and finally, the costs of the services themselves can escalate.

Finally the client can face two main indirect consequences. The first one is a loss of competences. By relying on external provision, the organization will stop nurturing some competences. When these competences are close to the core competencies of the organization, such loss might threaten future organization action (Roy and Aubert, 2000). The other potential treat is the possibility of disputes and litigation. While haggling is not in the mind of organizations when they negotiate their contracts, such occurrence is always possible.

2.1.1.2 Risk Factors

The above mentioned potential consequences do not occur randomly. Many factors play a role in increasing their probability of occurrence. As mentioned earlier, these factors are drawn in a large measure from Transaction Cost, Agency and Incomplete Contract Theories. They can be grouped into three main categories: the principal, the agent, and the transaction itself. These elements all deal with market failure. The clients themselves are often a major risk factor. They key characteristics to consider with respect with the client are linked to knowledge: experience and expertise with the activities outsourced, and with outsourcing contracts. The other element to consider is the culture of the organization, to ensure a cultural fit with the supplier. Also, many characteristics of the suppliers should be considered. First, its experience and expertise with both the activities handled and the management of outsourcing contract is critical. Second, the supplier size, its financial stability and its culture are also important. The number of suppliers is also a concern. A client facing a thin market will increase the risk of lock-in. Finally, the transaction itself, namely the activities chosen for outsourcing, is a key component of risk exposure. As transaction cost theory indicates, activities that are uncertainty, difficult to measure, or that involve the use of specific assets present higher chances of leading to contractual problems (Williamson, 1985). Activities that are complex and intertwined with the rest of organization activities (high interdependence) also increase the chances of problems, so will a contract of a very large scope.

These outcomes, with their associated factors, are summarized in Table 1. The outcomes are presented with the factors presenting the strongest effect on the probability of occurrence of each outcome. This does not imply that other factors cannot have an influence on a given outcome, it simply means that these are the critical factors. The objective of risk management is to reduce the level of risk exposure of a given business venture. Given an expected level of benefits from an outsourcing strategy, a rational, profit maximizing, and risk-averse decision maker wishes to minimize the risk exposure of the project or the strategy. A bounded rational decision maker may wish, for the same given level of benefits, to bring the level of risk exposure below some threshold or acceptable level (this is a "satisfying" decision rule, in Herbert Simon's terminology). In both cases, reduction of the level of risk exposure can be achieved in two ways: either by

reducing the losses associated with the undesirable outcomes, or by lowering the expected probability of occurrence of such outcomes.

Table 1: Components of IT Outsourcing Risk Exposure (Adapted from Table 1 – Aubert et al. 2001, p.2)

Undesirable outcomes	
Unexpected transition and management costs (Cross, 1995; Earl, 1996; Nelson et al, 1996)	*Factors leading to outcome :* • Lack of experience and expertise of the client with the activity (Earl, 1996; Lacity et al, 1995) • Lack of experience of the client with outsourcing (Earl, 1996) • Uncertainty about the legal environment
Switching costs (including lock-in, repatriation and transfer to another supplier) (O'Leary, 1990)	*Factors leading to outcome :* • Asset specificity (Williamson, 1985) • Small number of suppliers (Nam et al. 1996) • Scope • Interdependence of activities
Costly contractual amendments (Earl, 1996)	*Factors leading to outcome :* • Uncertainty (Alchian and Demsetz, 1972; Barzel, 1982) • Technological discontinuity (Lacity et al. 1995) • Task complexity
Disputes and litigation (Aubert et al. 1997b; Lacity and Hirschheim, 1993)	*Factors leading to outcome :* • Measurement problems (Alchian and Demsetz, 1972; Barzel, 1982) • Lack of experience and expertise of the client and/or of the supplier with outsourcing contracts (Earl, 1996; Lacity et al, 1995) • Uncertainty about the legal environment • Poor cultural fit
Service debasement (Lacity and Hirschheim, 1993)	*Factors leading to outcome :* • Interdependence of activities (Aubert et al. 1997; Langlois and Robertson, 1992) • Lack of experience and expertise of the supplier with the activity (Earl, 1996) • Supplier size (Earl, 1996) • Supplier financial stability (Earl, 1996) • Measurement problems (Alchian and Demsetz, 1972; Barzel, 1982) • Task complexity
Cost escalation (Lacity and Hirschheim, 1993; Lacity et al, 1995)	*Factors leading to outcome :* • Lack of experience and expertise of the client with contract management (Earl, 1996; Lacity et al, 1995)

Undesirable outcomes	
	• Measurement problems (Alchian and Demsetz, 1972; Barzel, 1982) • Lack of experience and expertise of the supplier with the activity (Earl, 1996)
Loss of organizational competencies (Dorn, 1989; Earl, 1996; Lacity et al, 1995)	*Factors leading to outcome :* • Scope • Proximity of the core competencies (Prahalad and Hamel, 1990) • Interdependence of activities
Hidden Service Costs (Lacity and Hirschheim, 1993)	*Factors leading to outcome:* • Complexity of the activities • Measurement problems (Alchian and Demsetz) • Uncertainty (Barzel, 1982)

3 The Case Studies

In order to better understand and analyze how IT outsourcing risk was managed in organizations, case studies were conducted in four organizations. For each one, data were collected on one or several outsourcing decisions, from the following sources: requests for proposals, supplier proposals, contracts and addenda, and interviews with managers who had been involved in the decision process and managers in charge of overseeing the contracts. Using this data, each researcher independently assessed the risk level of each outsourcing decision, by rating the risk factors and the undesirable outcomes listed in Table 1. In three organizations, the impact of each outcome was assessed on a 1 (very low) to 7 (very high) scale. In the fourth organization, the impact was assessed using the AHP methodology, with the collaboration of the managers in the organization. Then, the probability of occurrence of each outcome was approximated (on a 1 to 7 scale) by first evaluating each of the risk factors associated with the outcome and then by aggregating the values of all the factors. The independent assessments were then compared and discussed, until a final assessment was agreed upon.

The cases illustrate different dimensions of IT outsourcing risk management. The first case shows the importance of using a formal risk measure and explicitly assessing risk. The second exemplifies how risk management is the result of a series of compromises. Organizations reducing a risk often increase another one. It is a matter of selecting the risks one is willing to take. The third case illustrates the difficulty, in some instances, of assessing correctly the impacts associated with the potential undesirable outcomes and proposes a technique that can be used to alleviate this difficulty. Finally, the fourth case is an exemplar of risk management: it is a case where the client had the resources and the knowledge to

negotiate a contract with an impressive array of risk management mechanisms. Due to space limitations, and because all but one of the case studies have been published before, details about the cases are omitted below.

3.1 Managers' Attitude Toward Risk

The first case is that of GVDL, a large insurance company. Two system development outsourcing decisions and the resulting contracts were analyzed: the Year 2000 project and the Application development partnership project (see Aubert et al. 1999). The first project was the Y2K conversion of the legacy system. The estimated effort required for migrating all the systems through the millennium was more than 25000 person-days. The second project was called the Application development partnership project. The firm had decided to stop awarding contracts to many different suppliers and to select a single (or maybe a few) application partner that would invest time and resources in understanding the company and its needs. The results of the assessment of risk exposure for these two outsourcing decisions are presented in Figure 2 (black icons represent initial risk levels).

From Figure 2, it seems quite clear that project 1 (Y2K) was less risky that project 2. While many potential consequences (service debasement, lock-in and cost escalation) had high values for project 1, the probabilities were generally very low, with the exception of cost escalation, which was fairly probable. Project 2 was riskier. Items 3, 6, and 7 have mid-range probabilities of occurrence and the losses associated with both lock-in and contractual amendments would be very high. The organization took several measures to lower the risk exposure associated with both contracts.

In the Y2K contract, protection against lock-in was sought through sequential contracting. By splitting the work to be done in many sequential steps, the client ties the duration of the contract to verifiable performance on the one hand and leaves open the possibility of walking out of the relationship if things were to take a bad turn. In the case of service debasement, the main mechanism used by the client to reduce the probability of occurrence of this outcome was the inclusion of an important penalty for underperformance. This penalty was equal to five times the total value of the contract. Doing so elicits greater efforts from the supplier and serves as a type of insurance, thus reducing the monetary value of the consequences. Finally, in view of cost escalation, the client secured guaranteed rates and the parties agreed *ex ante* on the evaluation method and relied on a detailed inventory of the various components, languages, platforms, size, complexity, testing environments, interactions with other systems, etc. As shown by the arrows drawn in Figure 2, the potential losses associated with lock-in, service debasement and cost escalation are reduced.

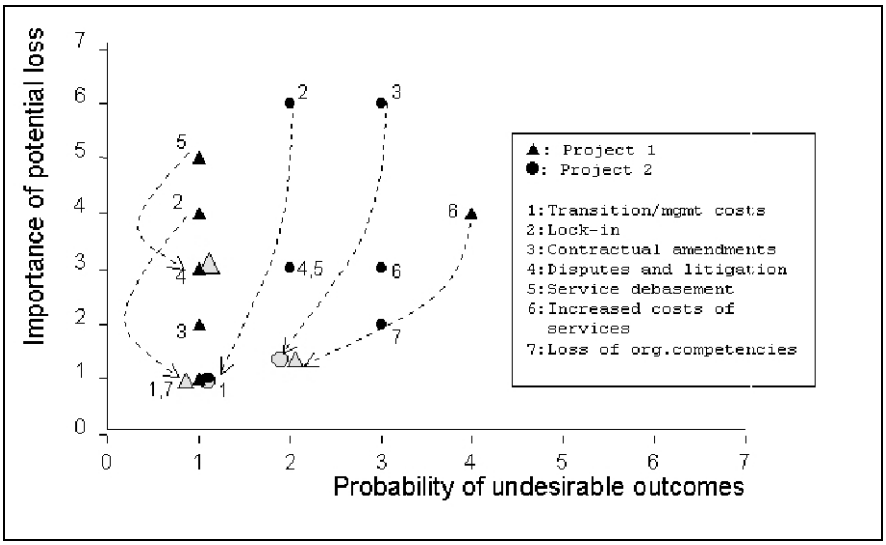


Figure 2: Insurance Company

In the second contract, the risk exposure stemming from lock-in was reduced in two ways. The first one is multiple sourcing: three were selected to work concurrently, which seriously curtails the probability of being locked-in for the client. Renegotiation problems and costly contractual amendments are handled through the separation of assignments in addenda. This enables the partners to actually modify their contract without costly renegotiations. It is an ongoing modification process that is included in the contract (sequential contracting). Risk is greatly reduced.

Among the interesting facts from this case is the perception of the managers. From Figure 2, it is quite clear that project 2 was riskier than project 1, whether one considers the risk before or after the risk management mechanisms are introduced. This result greatly surprised the managers. Their initial impression was that risk exposure was much greater with their project Y2K than with the partnership one. They agreed with the results presented in Figure 2 and realized that their evaluation was inaccurate. Their mistaken evaluation is coherent with remarks made by March and Shapira (1987). Managers perceived risk because some potential losses were high, failing to recognize that the probabilities of such losses (in project 1) were dim. Another factor was the time frame of both project. Consequences from problems with project one were almost immediate (January 2000). On the other hand, project 2 was a long term venture and many potential negative consequences will only unfold in a 2-5 year horizon. This might explain why project 2 was perceived as less risky. The risks involved were not recognized because they were too distant.

Lessons Learned

This case teaches us three main lessons. First, conducting a formal assessment of risk exposure, and mapping explicitly the risk exposure associated with a contract enables efficient risk management. Managers can immediately target the elements presenting high risk exposure and implement risk management mechanisms (while it was not used here, a drastic mechanism is to keep the activity in-house). Second, such explicit chart of risk exposure offers a remedy to some managers' biases. In this case, managers failed to recognize potential threats that were not in an immediate future. Their evaluation of events with very low probabilities was also biased. Third, by comparing projects and ordering them more accurately in terms of risk exposure, the organization can manage its outsourcing portfolio more effectively and ensure that efforts in risk management are allocated where they are the most profitable.

3.2 Risk Management as a Series of Compromises

The second case study was conducted at British Petroleum (BP). This case illustrates how risk management and learning can eventually transform risk into a "choice" rather than a "fate" (Aubert et al., 2001). British Petroleum, has extensive outsourcing experience, and a history of risk evaluation and management. The company employs more than 50,000 people and conducts worldwide activities. Two contracts are compared. The first one, labeled BPX, involved the outsourcing of IT activities linked to BP Exploration division (Cross, 1995). The second contract – BP Global – concerns the whole IT organization (head office and divisions).

First contract. The first contract was BP's first major outsourcing venture, covering data centre management, telecommunications, maintenance, and systems development. Risk exposure was high (see Figure 3). Because of the extent of the contracts, hidden service costs was the major threat. The main feature of the contract, in terms of risk management, was to rely on a consortium of three vendors to supply the services. Also, the contractual framework enabled BPX to renegotiate several clauses annually, further reducing this risk.

Disputes and litigations, costly contractual amendments, and loss of organizational competencies were next in order of importance in terms of risk exposure. BPX recognised that disagreements would probably arise both between the suppliers themselves and between them and BPX. BPX tried to reduce the impacts of disputes and litigation but uncovered that European antitrust laws prevented the three suppliers from joining in a formal alliance as originally planned. Given the type of contract selected (multiple sourcing), contractual amendments and contract renegotiation would presumably be limited the portfolio of activities of one of the supplier, limiting the extent of changes. Loss of innovative capacity (competencies) was considered the biggest potential loss resulting from moving so

many staff out of the organization, especially since BPX had decided to become a knowledge organization. Again, the consortium was the means whereby BPX could reduce this risk because several suppliers would give access to a broader array of innovative services (and knowledge) than a single supplier. However, no supplier would have the big picture of the industry and the technology portfolio.

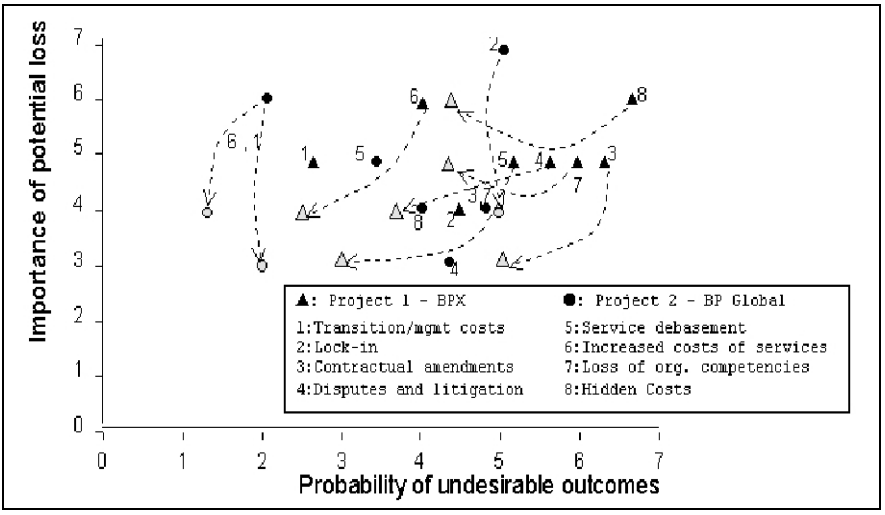


Figure 3: British Petroleum (Reprinted from Aubert et al. 2001)

Second Contract. In 1998, BP changed its outsourcing strategy radically and decided that a single supplier would replace the fragmented assortment of suppliers which existed. BP evaluated that only two suppliers in the world were capable of providing services on such a scale. Therefore, a costly lock-in situation could easily appear To reduce potential problems due to the lock-in situation, BP included a one-year notice of termination, to help reduce the impact of a potential lock-in. Other elements where potential negative consequences are high are cost escalation and transition costs. The factors linked to cost escalation suggest a low probability of occurrence. BP has an extensive expertise and experience with outsourcing, the supplier is very experienced with the activities included in the contract and is very competent in managing contractual relationships. The most threatening factor is the presence of measurement problems. One of the tools to reduce them will be benchmarking, which will be conduced on a regular basis. Transition costs could also bring severe penalties. They would come with service deterioration and business disruption. Transferring activities to EDS presents different risks in different regulatory situations (different countries). To reduce the transition related problems, BP increased the planning efforts in a wide variety of aspects. Interestingly, the overall cost of transition is not necessarily reduced, but the unexpected part of it is.

Lessons Learned

The BP case provides two lessons. First, it is clear that learning occurred through the management of the BPX contract, which translated into both lower probabilities for the undesirable consequences and better risk management strategies in the second contract. Many of the contractual choices were made with less naivety. Managers were more realistic about potential loopholes in the arrangements and more aware of the limits of contracts. A key decision in the second contract was to remove software development from the arrangement. Development activities are more uncertain, more specific, and more complex than operations. By keeping them outside the portfolio of outsourced activities, the BP managers reduced the probabilities of occurrence of several undesirable consequences.

The second lesson is the notion that risk is a choice. The case showed that risk profiles can be seen as compromises. A given risk management mechanism could lower one type of risk while increasing another one. For example, when BP decided in the third contract to deal with a single supplier, risks related to measurement problems were less probable. However, this was done at the expense of an increase in the risk of lock-in. As managers become more aware of the control they have on the risk profile of their IT outsourcing strategy, they should bear more responsibility over the outcomes.

3.3 Risk Management and Impact Evaluation

The third case is slightly different from the others because it combines a software implementation decision with an outsourcing decision. The system that had to be implemented was a major undertaking for the organization. It was the implementation of an ERP system. The first attempt to implement the system was an unmitigated failure. It was done using one external integrator, through an outsourcing contract. The sole contractor strategy proved problematic. For instance, the contractor did not have the extent of expertise required for the task. Estimates of the costs of the first attempt exceeded 250 million dollars. The risk evaluation was performed after this first failure. The organization had to decide whether or not to pursue the idea of implementing an integrated system, and to define the implementation strategy, and therefore the role of external partners and the type of relationships it should establish with them. The evaluation of the risk factors was done using the same approach as the previous cases and does not reveal new key insights. The evaluation of the impacts was done differently and the subsequent paragraphs will focus solely on this aspect of the case.

The evaluation of the impacts was done using the analytic hierarchy process (AHP). This approach was used in several domains like pipeline security (Bandyopadhyay, Dey, and Gupta, 1997), software development (Yau and Davis, 1993), construction projects (Mustafa and Al-Bahar, 1991), and ERP

implementation (Huang, Chang, Li, and Lin, 2004). Introduced by Saaty (1977), this method enables the two-by-two comparison of multiple elements to establish a ratio scale of the different elements. In many situations, especially when multiple elements have to be compared simultaneously, the relative weights given to the elements are always open to discussion. For instance, when managers evaluate several impacts on a Likert scale, any attempt to translate these evaluations into comparable amounts of dollars using the ratios of the evaluations is debatable. AHP can generate relative values for each event. It also ensures that managers remain coherent when evaluating several elements. It prevents them from using different scales for each element (Millet and Wedley, 2002).

In this case, the managers had to deal with several sets of potential negative events. First, there were all the potential costs associated with the venture. Also, because it involved the implementation of a system, they had to consider the implementation schedule (delays in the project were a concern) and the extent to which all the functionalities planned were implemented. Moreover, since they were operating in a highly unionized environment, they were concerned with the satisfaction of the employees (users) both with the implementation process and with the final system.

The first assessment of the losses associated with the negative outcomes showed the limit of a direct assessment. All the outcomes were considered important, or at least moderately important. However, it was also clear that the resources available were limited and insufficient to manage all those potential risks.

Managers were asked to perform an evaluation using the AHP method, in a group. The first set of comparisons of the items led to a very low level of consistency between the evaluations. Guidelines suggest a threshold of 0,1 or less for the consistency ratio (Cheng, Li, and Ho, 2002). It took several iterations for the management team members to agree on a set of pair-wise comparisons that led to an acceptable evaluation of the relative importance of the potential outcomes. The resulting evaluation showed that what was significant was everything pertaining to cost and schedule. The elements associated with user satisfaction, while being socially desirable (especially given the unionized environment), scored extremely low. The managers had to admit, even if it was not politically correct, that in all situations, when faced with potential decisions that would put in balance user satisfaction with either cost elements or schedule elements, the latter two would always overcome the satisfaction issues. Using these results, they were able to refocus their efforts more specifically on the risk factors that influenced these undesirable events.

Lessons Learned

Two lessons are extracted from this case. First, the direct evaluation of the impact might sometimes be difficult to do for the managers, especially when assessing contracts that have implications at multiple levels. Tools like the analytic

hierarchy process help alleviate this difficulty and ensure that the resulting evaluation on the potential loss axis is as reliable as possible. The AHP evaluation is a step forward from an ordinal scale toward a formal evaluation of all the potential losses on a common quantitative scale (like dollar values).

The second lesson learned is that the approach developed to evaluate outsourcing risk is an open tool which can be expanded to include other related considerations. In this case, the contract and the relationship with the potential suppliers was only one aspect of the risk evaluation. The implementation issues had to be considered simultaneously. This could be done by considering additional potential negative outcomes and their associated risk factors. Moreover, this shows explicitly the links between two related sets of events (in this case the outsourcing decision and the ERP implementation decision).

3.4 Risk Management and Contract Design

The last lessons come from the outsourcing contract of Niagara (name changed) (Aubert et al., 1997b). Niagara is a large Canadian Crown corporation, employing more than 50,000 people, with an annual income of over $5 billion. It concluded a complex outsourcing arrangement with three suppliers. When it decided to outsource its IT services, the organization was extensively developing new software (1000 persons full-time) and having a hard time doing so. Although Niagara recognized that IT could radically change the way it did business, IT and software development were not within the core of Niagara competencies. The organization had problems hiring and retaining IT people. It was dealing with a vast number of consultants, without taking advantage of the consultants' distinctive skills. Finally, Niagara had the feeling that some of the software solutions developed were innovative and could be sold to other similar organizations in the world. However, it did not have the skills nor the infrastructure to do so. Selling software was not its business.

The risk involved with outsourcing all the IT services, as was intended, was high (see Figure 4). Lock-in was the most important threat. Because of the sheer size of the contract, lock-in could be very costly. The probability of a lock-in was also high, mostly because of the specific nature of the software developed, and the limited number of suppliers that could handle such a large contract. Hidden costs were also to feared. The complexity of the activities, the number of different systems to integrate and the scope of the contract made hidden costs a likely menace. Similarly, cost escalation and costly contractual amendments would lead to severe losses. In the case of such a large contract, it would be tempting for a supplier to argue higher than expected costs and renege on the promised fees. Changes to any contract would also be probable because of the wide variety of services and the level of innovation in the field.

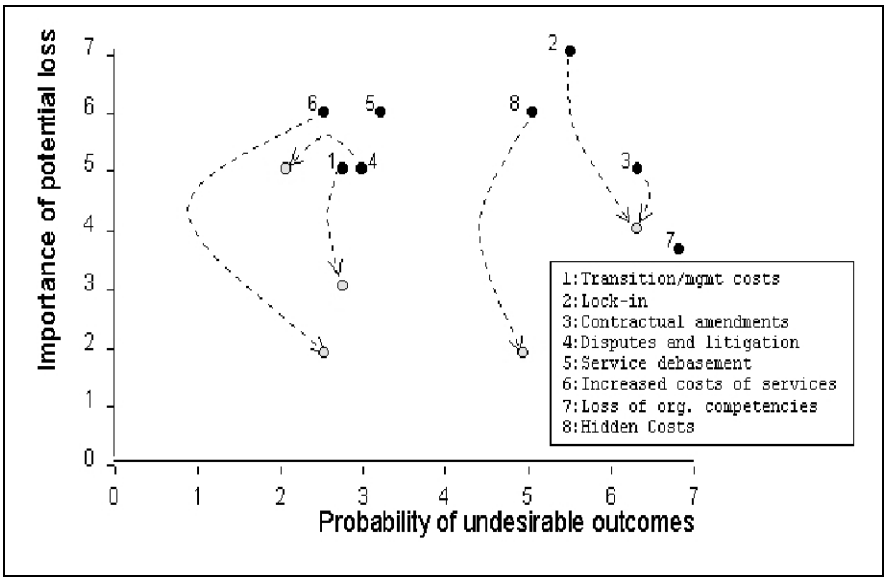


Figure 4: Niagara

Niagara had some precious resources when considering outsourcing. Most notably, the organization has a long tradition of measurement. Every activity in the organization is measured, and the organization had impressive charts and data about the resources required for developing or operating software. They had measurement guidelines for all types of application, based on the vast number of projects done by the organization or sub-contracted. They had enough internal data to benchmark potential suppliers.

Niagara finally signed an original deal, integrating several risk management mechanisms. They decided to use three suppliers. Each one was responsible for a given portfolio of activities and had an area of responsibility. The outsourcing contracts placed the three outsourcers in the unusual situation of having to cooperate and/or compete on almost every project. They had a group of activities allotted to them. For any new project, Niagara asked one of the three a cost estimate. This estimate was compared to internal ones and, if acceptable, the contract could be given without further delay. If unsatisfactory, Niagara could ask the other suppliers to bid. External bids could also be sought. The three suppliers were preferred because they had a much better knowledge of the organization. They still had to remain honest to retain their share of the overall IT activities.

Another element of interest was the outside deals. The suppliers had the infrastructure to sell outside Canada the software developed. The outsourcing deal established a joint venture between Niagara and its suppliers to do so. At the time the case was written, they were transferring its technology to eight countries.

Neither the client nor the outsourcers would have had the capacity, alone, to market that technology. The reputation of Niagara and the skills of the suppliers were essential elements in the success of the joint sales venture abroad. These external deals were extremely attractive for the outsourcers. While they were a source of revenue, they also served as great goal alignment mechanisms between Niagara and its suppliers, reducing potential "cultural" differences at the same time. They acted as a bond, guaranteeing satisfactory service to the client.

The competition between the suppliers reduced the expected losses associated with hidden costs and cost escalation. So did the benchmarking. Before undertaking a new software project, key indicators such as cost per milestone, total development cost, elapsed time, and total cost minus fixed assets, were used to assess it. These parameters were clearly specified ex ante so the suppliers knew how they were being evaluated. Activities were measured on a regular basis, graphing the number and types of problems, their category according to security level, and their overall impact. Also, by separating the portfolio into three parts, any cost escalation due to opportunistic behaviour of a supplier would be limited to a third of the overall portfolio.

Cost escalation was also limited by the use of countervailing incentives. In their dealing with Niagara, the outsourcers were responsible for the maintenance of the systems they had developed. Consequently, they had a strong incentive to develop efficient systems, so as to minimize their maintenance efforts. Linking two stages of production can provide an incentive for an agent to perform in the principal's interest. When two stages of production are not independent an agent may be motivated to perform better if it is responsible for both stages. By putting extra effort into the first stage, it will reduce the effort required at the subsequent stage. Inversely, by shirking during the first stage, it will increase the effort required later. The result is that the agent cannot claim to have made an excessive effort at both stages.

Monitoring was used extensively to reduce the risk of service debasement. Each deliverable done by a supplier had to be approved by one of the two other suppliers. Once a piece of work was approved, the supplier approving the work became responsible for its judgment (and for handling the costs related to problems). An interesting result of this type of arrangement was that Niagara automatically obtained a third party view of each supplier's work.

Lessons Learned

This case teaches two lessons. First, risk can be managed and efficient contract design can drastically reduce risk. In many ways, Niagara was able to implement several of the features that British Petroleum wanted to include in its first contract. Because the regulatory regime in Canada is different than the European one, there were no obstacles to such contract design. One key element of this contract is that risk is not eliminated; it is mostly transferred to the suppliers. They become

responsible for many of the potential negative events that can occur. They are positioned in a way that makes them guardians of the other suppliers on behalf of Niagara. Such risk taking is unusual for the suppliers. When Niagara proposed this agreement to several potential suppliers, many declined to bid. This further reduced the number of potential suppliers, which explain why they probability of lock-in increased (while the potential loss decreased because of the dividing of the portfolio into three parts).

The other lesson is that size does matter. This sophisticated contract would not have been possible if the portfolio of activities had been smaller. The suppliers agreed to enter into this relationship because they expected to make money. They accepted to shoulder more risk than they usually do because they anticipated greater benefits. Each one dedicated approximately 350 employees to the contract with Niagara. Moreover, the outside deals were a powerful incentive. These other contracts made the relationship with Niagara especially precious and guaranteed the client that suppliers would not threaten this relationship. All this apparel is only justifiable if the size of the contract is significant.

4 Discussion and Conclusion

The four cases discussed in this chapter illustrated particular issues related to IS outsourcing risk assessment and risk management. First, they showed that using a formal risk assessment framework as the one proposed here may contribute to reducing some of the manager's biases. It is difficult to compare different alternatives that are associated with both probability distributions and different loss functions. The human mind can only deal with a limited number of scenarios and a formal analysis ensures that all key elements are taken into account.

Second, the cases also illustrate the notion that risk is a choice. This is especially true when risk is largely endogenous, like with outsourcing risk. Managers have a choice between different sourcing strategies, and numerous contracts for any given activity. By selecting any one of them, they have to realize what they are selecting and what they are discarding. Risk exposure, once made explicit, transforms the unexpected into an option selected consciously. These selections are always compromises. Most risk management mechanisms involve reducing some types of risk while increasing other, or accepting to pay a fee to reduce a given risk.

Finally, the analyses show that once risk exposure is explicit, and the possible compromises are clear to managers, risk becomes more manageable. Not surprisingly, organizations with a large amount of resources, awarding larger contracts, will have more flexibility when managing their risk portfolio and more possibilities to reduce their risk exposure.

From a more general perspective, the cases also illustrate the two main mechanisms for reducing the level of risk exposure: reducing the losses associated with the undesirable outcomes or lowering the probability of occurrence of such outcomes by modifying the characteristics of the project that constitute risk factors. The cases suggest that in order to be effective, a risk management strategy has to focus on the appropriate component of risk exposure. For instance, in a scenario where the probability of an undesirable outcome is low but the loss associated with the outcome is high, a risk management approach which would be aimed at reducing the –already low– probability of the outcome would not be very effective, or could be prohibitively costly. Conversely, when losses are not very large, but the probability of occurrence is relatively high, it appears economical to reduce this probability. Finally, when both the probability of occurrence of an undesirable result and the associated loss are high, risk management call for both actions aimed at lessening the probability of occurrence of an outcome, and actions aimed at reducing the potential loss. In such a situation, the outsourcing firm will be well advised to use a mix of deflection, mitigation and contingency planning mechanisms to reduce the level of risk exposure.

For organizations, the decision to outsource or not some or all of their IS activities has become an ongoing issue, which has increased in complexity (King, 2005). Indeed, the IS outsourcing environment is fluctuating, with new alternatives - such as offshoring, Application Service Provision (ASP) – becoming feasible and at the same time offering new challenges. In this chapter we have shown that the risk assessment and risk management framework we propose is a tool that organizations can use as a means to not only support their decision but also to monitor its implementation.

References

Alchian, A.A., and Demsetz, H., " Production, Information Cost and Economic Organization ," American Economic Review, (62), December 1972, pp.777-795.

Anderson, J., and Narasimhan, R., "Assessing Implementation Risk : A Methodological Approach," Management Science, (25: 6), June 1979, pp.512-521.

Arrow, K., “Behaviour Under Uncertainty and its Implications for Policy”, in Foundations of Utility and Risk Theory with Applications, Bernt Stigurn and Fred Wenslop (eds.), Reidel Publishing Company, Dordrecht, Holland, 1983, 19-34.

Aubert, B.A., Dussault, S., Patry, M., and Rivard, S., “Managing the Risk of IT Outsourcing,” Proceedings of the Thirty-Second Hawaii International Conference on System Sciences, Organizational Systems and Technology Track, Hugh Watson (ed.), Hawaii, 1999 (CDROM).

Aubert, B.A., Houde, J.F., Patry, M., Rivard, S., “Characteristics of IT Outsourcing Contracts,” Proceedings of the 36th Hawaii International Conference on Systems Sciences, Hawaii, January 2003.

Aubert, B.A., Patry, M., and Rivard, S., “The Outsourcing of IT: Autonomous Versus Systemic Activities”, 28th Annual Meeting of the Decision Sciences Institute, San Diego, CA, D. Olson (ed.), (2), November 1997, pp. 809-812.

Aubert, B.A., Patry M., and Rivard, S., “Assessing the Risk of IT Outsourcing” Proceedings of the Thirty-First Hawaii International Conference on System Sciences, Volume VI, Organizational Systems and Technology Track, Hugh Watson (ed.), Hawaii, 1998, 685-693.

Aubert, B.A., Patry, M., and Rivard, S., "A Tale of Two Outsourcing Contracts," Cahier du GReSI (97-05), 1997b.

Aubert, B.A., Patry, M., and Rivard, S., “Impartition des services informatiques au Canada: Une comparaison 1993-1997”, in Impartition Fondements et Analyse, (3.3) Michel Poitevin (ed.), Presses de l’université Laval, 1999, pp. 203-220.

Aubert, B. A., Patry, M., Rivard, S., and Smith, H., “IT Outsourcing Risk Management at British Petroleum”, Proceedings of the Thirty-fourth Hawaii International Conference on Systems Sciences, Organizational Systems and Technology Track, Hugh Watson (ed.), IEEE, Hawaii, January 5-8 2001.

Aubert, B.A., Rivard, S., and Patry M., “A Transaction Cost Approach to Outsourcing Behavior: Some Empirical Evidence”, Information and Management. (30), (1996) 51-64.

Aubert, B.A., Rivard, S., and Patry M., “Development of Measures to Assess Dimensions of IS Operation Transactions”, Omega, International Journal of Management Science, (24:6), 1996b 661-680.

Bahli, B., Rivard, S., «Validating Measures of Information Technology Risk Factors», Omega, vol.33, no.2, 2004, pp.175-187.

Bandyopadhyay, T., Dey, P., Gupta, S., “A Cost-Effective Maintenance Program Through Risk Analysis”, AACE International Transactions, 1997, pp. 84-89.

Barki, H., Rivard, S., and Talbot, J., “Toward an Assessment of Software Development Risk,” Journal of Management Information Systems, (10:2), Fall 1993, pp. 203-225.

Barzel, Y., " Measurement Cost and the Organization of Markets ,"Journal of Law and Economics, (25), April 1982, pp.27-48.

Boehm, B.W., “Software Risk Management”, IEEE Computer Society Press, Los Alamitos, California, 1989.

Bowers, L.N., Gerber, U.H., Hickman, C.J., Jones, A.D., and Nesbit, J.C. "Actuarial Mathematics", The Society of Actuaries, 1986.

Cheng, E.W.L., Li, H., Ho, D.C.K., “Analytic Hierarchy Process (AHP)”, Measuring Business Excellence, (6:4), 2002, pp. 33-37.

Cross, J., "IT Outsourcing : British Petroleum's Competitive Approach," Harvard Business Review, May-June 1995, pp.95-102.

DiRomualdo, A., and Gurbaxani, V., “Strategic Intent for IT Outsourcing”, Sloan Management Review, Summer 1998, 67-80.

Dorn, P. "Selling One's Birthright," Information Week, (241), October 16, 1989, p.52.

Earl, M.J., "The Risks of Outsourcing IT," Sloan Management Review, Spring 1996, pp.26-32.

Eisenhardt, K. “Agency Theory: An Assessment and Review,” Academy of Management Review, (14:1), 1989, pp.57-74.

Gack, G., "A Cautionary Tale," Computerworld, September 12, 1994, pp.136-136.

Grossman, S., and Hart, O., "The Costs and Benefits of Ownership :A Theory of Vertical and Lateral Integration, " Journal of Political Economy , (94), 1986, pp.691-719.

Gupta, U., and Gupta, A., "Outsourcing the IS Function : Is It Necessray for your Organization ? ," Information Systems Management, Summer 1992, pp.44-50.

Hirschheim, R., and Lacity, M., “The Myths and Realities of Information Technology Insourcing”, Communication of the ACM, February 2000, (43:2), pp. 99-107.

Huang, S.-M., Chang, I.-C., Li, S.-H., Lin, M.-T., “Assessing Risk in ERP Projects: Identify and Prioritize the Factors”, Industrial Management & Data Systems, (104:8), 2004, pp. 681-688.

Huff, S. L., "Outsourcing of Information Services," Business Quarterly, Spring 1991, pp.62-65.

King, W.R., “Outsourcing Becomes more Complex,” Information Systems Management, (22:2), 2005, pp.89-90.

Kobs, A., “Sentinel Events – A Moment in Time, A Lifetime to Forget”, Nursing Management, February 1998, pp. 10-13.

Lacity, M.C., and Hirschheim, R., “Information Systems Outsourcing”, John Wiley & Sons, New York, 1993.

Lacity, M., and Willcocks, L., “An empirical Investigation of Information Technology Sourcing Practices: Lessons from Experience”, MIS Quarterly, September 1998, pp. 363-408.

Lacity, M.C., Willcocks, L.P., and Feeny, D.F., "IT Outsourcing : Maximize Flexibility and Control," Harvard Business Review, May-June 1995, pp.84-93.

Langlois, R.N., and Robertson, P.L., "Networks and Innovation in a Modular System: Lessons from the Microcomputer and Stereo Component Industries”, Research Policy, (21), 1992, pp. 297-313.

Levin, M., and Schneider, M., “Making the Distinction: Risk Management, Risk Exposure”, Risk Management, August 1997, pp. 36-42.

Levine, E., “Defining Risks”, CA Magazine, April 2000, pp. 45-46.

Linerooth-Bayer, J., and Wahlstrom, B., "Applications of Probabilistic Risk Assessments : the selection of Appropriate Tools," Risk Analysis, (11:2), 1991, pp.239-248.

Loh, L., and Venkatraman, N., "Diffusion of Information Technology Outsourcing: Influence Sources and the Kodak Effect", Information System Research, (3:4), December 1992, pp. 334-378 ; p.336.

MacCrimmon, K., and Wehrung, D., “Taking Risks: The Management of Uncertainty”, Free Press, New York, 1986 (cited in March and Shapira, 1987).

Mahoney, D., “Confessions of a Street-Smart Manager”, New York : Simon & Shuster, 1988.

March, J., and Shapira, Z., "Managerial Perspectives on Risk and Risk-Taking," Management Science, (33:11), 1987, pp.1404-1418.

Millet, I., Wedley, W.C., Modelling Risk and Uncertainty with the Analytic Hierarchy Process”, Journal of Multicriteria Decision Analysis, (11:2), 2002, pp. 97-107.

Mustafa, M., Al-Bahar, J., “Project Risk Assessment Using the Analytic Hierarchy Process”, IEEE Transactions on Engineering Management (38:1), 1991, pp. 46-52.

Nam, K., Rajagopalan, S., Rao, H.R., and Chaudhury, A., "A Two-Level Investigation of Information Systems Outsourcing," Communications of the ACM, (39:7), July 1996, pp.37-44.

Nelson, P., Richmond, W., and Seidman, A., "Two Dimensions of Software Acquisition," Communications of the ACM, (39:7), July 1996, pp.29-35.

O'Leary, M., "The Mainframe Doesn't Work Here Anymore," CIO, (6:6), June 1990, pp.77-79.

Prahalad, C.V., and Hamel, G., "The Core Competence of the Corporation," Harvard Business Review, May-June 1990, 79-91.

Rao, H. R., Nam, K., and Chaudhury, A., "Information Systems Outsourcing," *Communications of the ACM*, (39:7), July 1996, pp.27, 28.

Roy, V., and Aubert, B.A.; “A Resource Based View of the Information Systems Sourcing Mode”, Proceedings of the 33rd Hawaii International Conference on Systems Sciences, Organizational Systems and Technology Track, Hugh Watson (ed.), IEEE, Maui, Hawaii, Janvier 4-7 2000, (CD ROM).

Sappington, D. “Incentives in Principal-agent Relationships,” Journal of Economic Perspectives, (5:2), Spring 1991, pp.45-68.

Saaty, T.L., “A Scaling Method for Priorities in Hierarchical Structures”, Journal of Mathematical Psychology, (15), 1977, pp. 59-62.

Saunders, C., Gebelt, M., and Hu, Q., “Achieving Success in Information Systems Outsourcing”, California management Review, (39:2), Winter 1997, pp. 63-79.

Schirripa, F., and Tecotzky, N., “An Optimal Frontier”, The Journal of Portfolio Management, Summer 2000, pp. 29-40.

Simon, H.A., “Organizations and Markets”, Journal of Economic Perspectives, (5:2), (Spring 1991), pp. 25-44.

Teece, D. J., Rumelt, R., Dosi, G., and Winter S., "Understanding Corporate Coherence, Theory and Evidence", Journal of Economic Behavior and Organization, (23), 1994, pp. 1-30

Williamson, O.E., “The Economic Institutions of Capitalism”, The Free Press, New York, 1985.

Williamson, O.E., “Transaction Costs Economics”, in Handbook of Industrial Organization, R. Schmalensee and R.D. Willig, (1), 1989, pp. 136-178.

Yau, C., Davis, T., “Using Analytic Hierarchy Process (AHP) to Prioritize Auditing Tasks for Large-Scale Software Systems”, Journal of Systems Management, (44:11), 1993, pp. 26-31.

Governance of Remotely Outsourced Software Development: A Comparison of Client and Vendor Perspectives

Rajiv Sabherwal

University of Missouri Curators Professor, and Emery C. Turner Professor of Information Systems, CCB 206, College of Business Administration, University of Missouri, St. Louis, 8001 Natural Bridge Road, St. Louis, MO 63121, Phone: 314-516-6490, FAX: 314-516-6827, E-mail: sabherwal@umsl.edu

Vivek Choudhury

Associate Professor and Chair Information Systems Department, College of Business, University of Cincinnati, Cincinnati, OH 45221, Phone: 513-556-7115, FAX: 513-556-6278, E-mail: Vivek.Choudhury@uc.edu

1 Introduction

Remotely outsourced Information systems (IS) development, viewed here as the design and/or development of an IS by a vendor that is located remotely from the client, either in another city in the same country or in another country, has become increasingly popular (Cross, 1995; Huber, 1993; Rothfeder and Coy, 1990; Yourdon, 1993). While such outsourcing has the potential for significant cost savings, they also present unique governance challenges (Kirsch, 2004; Jarvenpaa, Shaw, and Staples, 2004). Problems arise from the differences between client and vendor in goals and cultures, which make each side feel vulnerable to opportunistic behavior by the other (Lacity and Hirschheim, 1993a, 1993b; McFarlan and Nolan, 1995). For example, the client may be concerned about the vendor providing inadequate effort or developing poor quality software, while the vendor may be wary of the client providing inadequate help in requirements analysis or adding requirements late in the project. The client may prefer interpersonal interactions, which the vendor may view as constraining and costly. Such differences in perspectives may cause the two organizations to pull project governance in different directions (Heiskanen et al., 1996). The client may seek ways to increase its control over the project, while the vendor may try to reduce the costs of project governance and software development. The distance between the participants also limits their ability to obtain quick feedback, meet frequently,

and build interpersonal relationships. Therefore, "the truly critical success factors associated with successful outsourcing are those associated with vendor governance (Clark, Zmud, and McCray, 1998; p. 72; emphasis in original).

This paper aims to advance our understanding of the governance of remotely outsourced IS development projects. It addresses three specific research questions:

1. What kinds of coordination and control mechanisms are used in these projects?
2. How do these mechanisms evolve over time during a project?
3. How do the differences between client and vendor perspectives explain the choice of governance mechanisms and their evolution?

The paper draws on three studies (Figure 1) to address these questions. Study 1 includes one case viewed from the perspectives of both the client and the vendor. Study 2 includes 13 cases from the perspective of five large Indian vendors, and Study 3 includes four cases viewed from the client's perspective. Thus, eighteen cases of remotely outsourced IS development projects constitute the empirical basis for the paper. These cases have earlier been used to examine other aspects related to OISD projects, namely trust (Sabherwal, 1999), coordination (Sabherwal, 2003), and control (Choudhury and Sabherwal, 2003). Overall, the projects were heterogeneous in terms of clients, vendors, and systems, allowing us to examine the governance mechanisms in a variety of situations.

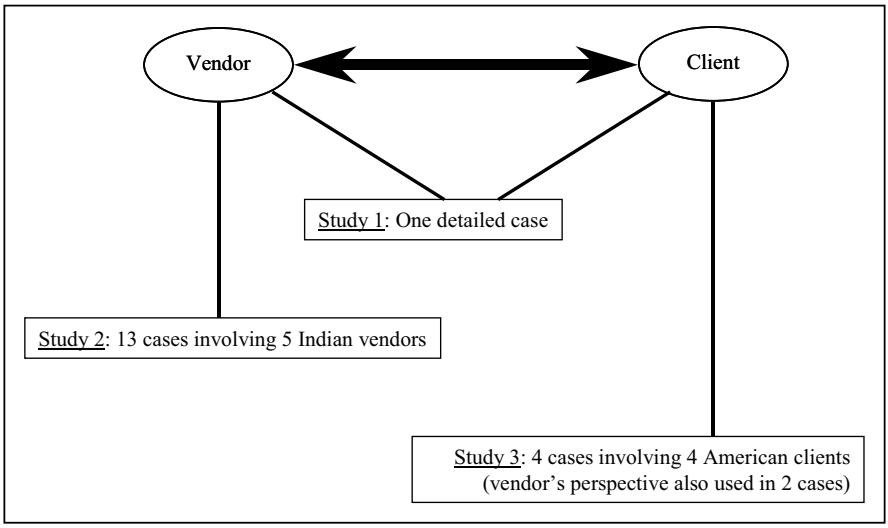


Figure 1: An Overview of the Research Approach

The next section provides the theoretical foundation for the paper using the literature on coordination and control of IS development projects. This is followed by a description of the research methods. The findings from the three studies are

then described – first, the choice of governance mechanisms is discussed followed by the evolution of these mechanisms over time. The paper concludes with a discussion of implications for practice and research.

2 Coordination and Control in IS Development

Coordination and control are two of the key characteristics of IS development teams, the third being their structural forms (i.e., functional, product, or matrix) (Zmud, 1984). In remotely outsourced IS development projects, coordination and control may both be inhibited by differences in organizational goals and cultures, the distance involved, as well as the inability to use hierarchies which help in internal IS development.

Several scholars (Beath, 1987; Henderson and Lee, 1992; Kirsch, 1996, 1997; Mantei, 1981) have focused on the issue of ***control*** in IS development projects. These authors view control in terms of project performance with respect to certain goals. Thus, Kirsch (1997) views control "… broadly, encompassing all attempts to ensure individuals in organizations act in a manner that is consistent with meeting organizational goals and objectives" (p. 215). Similarly, Henderson and Lee, 1992) define control as "…the organization's attempt to increase the probability that employees will behave in ways that lead to the attainment of organizational goals" (p. 757).

Prior research has examined the factors influencing control (Beath, 1987; Kirsch, 1996, 1997), the effect of control on project performance (Henderson and Lee, 1992), and classified the various control mechanisms (Henderson and Lee, 1992; Kirsch, 1996, 1997). Specific mechanisms that may be used to implement control include rules and procedures, budgets and schedules, socialization, etc. (Kirsch, 1997).

Scholars in several diverse areas (e.g., organization theory, computer science, economics, and biology) have investigated the topic of coordination (for a review, see Malone and Crowston, 1994). ***Coordination*** has been defined as the "integrating or linking together (of) different parts of an organization to accomplish a collective set of tasks" (Van de Ven, Delbecq, and Koening, 1976; 322). Prior research on coordination in IS development has examined alternative coordination mechanisms (Crowston, 1997), factors affecting coordination (Koushik and Mookerjee, 1995; Kraut and Streeter, 1997), and the effect of coordination on project performance (Nidumolu, 1996). Several coordination mechanisms have been identified, including standards, hierarchy, plans, liaison roles, and task forces (DeSanctis and Jackson, 1994; Nidumolu, 1995; Kraut and Streeter, 1995).

Coordination differs from control. While control focuses on improving performance relative to certain overall goals, coordination focuses on managing interdependencies among individuals or activities (Crowston, 1997; Kraut and Streeter, 1995). The importance of control derives from the need to ensure performance relative to an overall goal when the goals of the individual stakeholders (e.g., the employees) differ from the goals of the larger overall entity (e.g., the organization). In contrast, the importance of coordination derives from the overall task being comprised of multiple activities or individuals that depend upon each other.

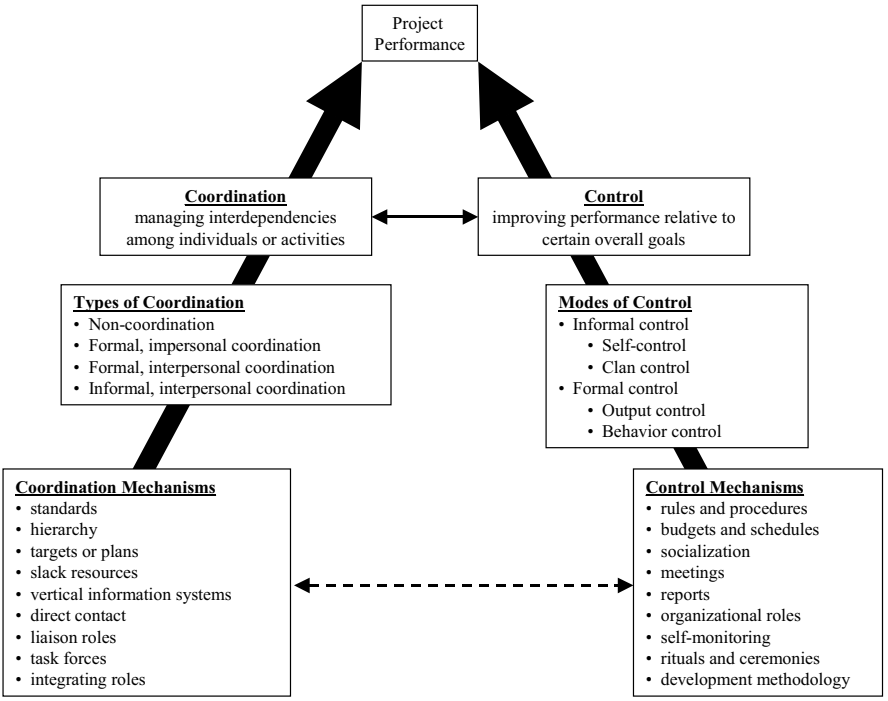


Figure 2: Coordination and Control

Despite these differences, control and coordination are interrelated, as shown in Figure 2. Both coordination and control affect the overall performance of the IS project. Improved coordination helps in the exercise of control while effective control may improve coordination. In addition, coordination and control are often achieved through similar governance mechanisms. Several of the control mechanisms discussed by Kirsch (1996, 1997), including meetings, reports, and organizational roles, resemble the coordination mechanisms discussed by Adler (1995), DeSanctis and Jackson (1994), and Kraut and Streeter (1995).

The relationship between coordination and control may be extended further using the common classifications of the mechanisms used to achieve them. One

dimension that has been used to classify both coordination and control is ***the formalization*** of the mechanisms used. Kirsch (1996, 1997) has distinguished between formal control (output control, behavior control) and informal control (self control, clan control), while Kraut and Streeter (1995) have differentiated between formal and informal coordination. A second common dimension that has been used to classify both coordination and control is the degree of interpersonal interaction involved. Kraut and Streeter (1995) distinguish between interpersonal and impersonal coordination mechanisms. A similar distinction may be applied to control mechanisms. Both behavior control and clan control require that the party exercising the control be able to observe the behavior of the agent – these forms of control may, therefore, be viewed as interpersonal**.** Outcome and self controls, on the other hand, require less interpersonal interaction between controller and controllee and may, therefore, be classified as impersonal**.** These two dimensions - formalization of the mechanisms and the degree of interpersonal interaction involved - help classify governance mechanisms into four types. The informal-impersonal, informal-interpersonal, formal-impersonal, and formal-interpersonal, cells correspond to self, clan, output, and behavior, control (Kirsch, 1996, 1997), respectively. They also directly represent the three types of coordination discussed by Kraut and Streeter (1995) – formal impersonal, formal interpersonal, and informal interpersonal, with a fourth type (non-coordination) being included to reflect the situation in which coordination is neither formal nor interpersonal (Adler, 1995).

The four types of governance mechanisms are quite distinct in general and specifically in remote outsourced IS development. In the non-coordination situation, the vendor is expected to exercise self-control in developing the system (Kirsch, 1996, 1997), and then deliver the system "over the wall" (Adler, 1995) to the client. The mechanisms used in this situation are primarily internal to the vendor. For the client to feel comfortable with the situation, it should have confidence in the vendor's ability to manage the internal tasks and deliver high-quality software.

Another possible situation is where several possible interorganizational mechanisms exist but they are all formal and impersonal in nature. These mechanisms allow the client to exercise output control through sign-offs and milestones (Adler, 1995; Henderson and Lee, 1992: Kirsch, 1996, 1997; Kraut and Streeter, 1995). Formal, impersonal mechanisms also include standards and plans that allow the two parties to handle exceptional situations (e.g., penalty clauses, procedures for handling modifications to requirements) and enable the client to control performance based on the progress.

Both the above situations involve little interpersonal interaction between client and vendor executives, but greater interpersonal interaction is sometimes needed. The interpersonal interaction may be formal in nature, allowing the client to exercise behavior control. Periodic meetings with the vendor executives, for

reviewing the project status, the design, or the software code (Kraut and Streeter, 1995) allow the client executives to monitor progress.

Alternatively, the interpersonal mechanisms may be informal, allowing the client and the vendor to exercise clan control through socialization, rituals and ceremonies (Kirsch, 1997). Informal, interpersonal mechanisms, and clan control, are used in situations of high uncertainty, especially when the task outcomes cannot be measured and appropriate behaviors are not known (Ouchi, 1979; Kraut and Streeter, 1995; Kirsch, 1997). Such governance requires frequent use of direct and interactive communication among participants from the two sides, which can be achieved through inter-organizational teams (Adler, 1995) and co-location of participants (Kraut and Streeter, 1995).

3 Research Methods

The results in this paper are based on three studies, each consisting of one or more cases on outsourced IS development projects. Table 1 summarizes the nature of the projects examined in the three studies. All projects in the three studies were examined primarily through personal interviews with several participants. Table 2 provides information on the interviews, including the interviewees' titles. The interviews were supplemented with organizational charts, annual reports, and internal documentation. The individual cases are summarized in the Appendix.

Study 1 is based on an outsourced development project at CLIENT_1[1], a Fortune 50 diversified service company. The vendor, V_ONE, is based in a city other than the client's head office. The senior IS executive at CLIENT_1 who allowed the case study was first interviewed, and asked to describe the IS development process and identify the participants. These individuals, and participants identified later, were also interviewed. The informants were asked to describe the project, including the problems faced and the tactics used. Overall, 11 interviews, each lasting between 60 to 90 minutes, were conducted with nine business and IS executives at various levels. The vendor's perspective was obtained through a six-hour meeting with five key participants. The system was being rolled out at the time of the interviews, and the project was recent and vivid in the interviewees' minds.

[1] To maintain confidentiality, the names of all companies and people are disguised in all three studies.

Table 1: The Sample of Projects

The Project	The Client	Client location	The Vendor	Vendor location
Study 1: One Case Study from Both Perspectives				
C1: Information system for managing assets and dealers	CLIENT1: Fortune 50 diversified service company	U.S.	V_ONE	U.S.
Study 2: Thirteen Cases involving Five Vendors, Studied from the Vendor's Perspectives				
C2: Loan monitoring system	CLIENT2: Building society	U.K.	V_TWO	India
C3: Works management system	CLIENT3: Utility company	U.K.	V_TWO	India
C4: Reengineering of stocks and bonds system	CLIENT4: Large software house	U.K.	V_TWO	India
C5: Development of a marketing information database	CLIENT5: Bank	U.K.	V_TWO	India
C6: System for customers to order software from home PC's.	CLIENT6: Software vendor	Netherlands	V_THREE	India
C7: Conversion of a distribution system from AS400 to UNIX	CLIENT7: Distribution firm	U.K.	V_THREE	India
C8: System design	CLIENT8: International IT vendor	Thailand	V_FOUR	India
C9: Taxation system	CLIENT9: Supplier to Thai government	Thailand	V_FOUR	India
C10: Word-processing software	CLIENT10: Software vendor	U.S.	V_FOUR	India
C11: Development of information modeling tools (CASE tools)	CLIENT11: Small IT firm	Netherlands	V_FOUR	India
C12: Automated manufacturing system	CLIENT12: Large IT vendor	U.S.	V_FOUR	India
C13: Human resource management system	CLIENT13: Government organization	Oman	V_FIVE	India
C14: Porting of UNIX-based system to new hardware	CLIENT14: Medium-sized IT vendor	U.S.	V_SIX	India
Study 3: Four Cases from the Client's Perspective				
C15: Development of software to add functionality to a global customer service system	CLIENT15: Fortune 500 financial services firm	U.S.	V_THREE	India
C16: Executive information system on company sales	CLIENT16: Fortune 500 software manufacturer	U.S.	V_SEVEN	Columbia
C17: Legislature tracking system	CLIENT17: Large county	U.S.	VEIGHT	U.S.
C18: Executive information system for field management teams	CLIENT18: One of the 10 largest food products firms	U.S.	V_SEVEN	Columbia

Table 2: The Interviews Conducted

Projects		Interviews at Clients				Interviews at Vendors		
	Indivi-duals	Titles	Inter-views	Total duration (hours)	Indivi-duals	Titles	Inter-views	Total duration (hours)
Study 1: One Case Study from Both Perspectives								
C1	9	President, Vice President, Vice President (IS), Group Manager, IS Group Project Manager, IS Project Manager, IS Group Director (Development), IS Group Manager, Methods Engineer	11	13	5	Executive Vice President, Vice President (R&D), Director (Consulting Services), Product Development Manager, Product Support Manager	1	6
Study 2: Thirteen Cases involving Five Vendors, Studied from the Vendor's Perspectives								
C2-C5	-	-	-	-	3	Executive Director, Development Manager, Project Leader	5	10
C6, C7	-	-	-	-	4	Resident Manager, Two Project Managers, Project Leader	4	6
C8-C12	-	-	-	-	6	General Manager, Resource Manager, Two Project Managers (titled Senior Manager, Senior Divisional Manager), Two project leaders (Senior Consultants)	6	9.5
C13	-	-	-	-	3	Sales Manager, Group Leader, Senior IT Engineer (Project Leader)	3	4.5
C14	-	-	-	-	3	Director (Projects), Director (Development), Project Manager	3	5
Study 3: Four Cases from the Client's Perspective								
C15	2	Project Manager, Lead Programmer Analyst (Project Leader)	2	3	-	-	-	-
C16	2	Regional Manager, Manager	1	2	-[a]	-	-	-
C17	4	Division Director (Development), Senior System Analyst, System Analyst, Project Manager	4	6	-	-	-	-
C18	4	Vice President (IS), Director (IS), Manager, Project Manager (subcontractor)	4	5	1	President	1	2
Total	21		22	29	25		23	43

[a]: C16 and C18 involved the same vendor (V_SEVEN), and the IS development for C16 was also briefly discussed in the interview with the CEO of VSEVEN in the context of C18.

Study 2 was based on interviews with five of the largest and most experienced software vendors in India., First, one or more recent projects for remote clients were identified at each vendor. Initially, the projects were discussed with the senior executive followed by interviews with the project manager and one or more other participants in each project. Overall, thirteen projects were examined. The 13 clients varied in size and industry, and were based in the U.S., the U.K., Netherlands, Thailand, and Oman. The interviews were semi-structured. There was an interview protocol, but the interviewees were encouraged to develop their own views instead of asking them to force their experiences into *a priori* categories.

Study 3 included four cases studied primarily from the clients' perspective. All four clients were large organizations based in the U.S. The study also included a two-hour interview with the CEO of the vendor (V_SEVEN) which developed two of the systems. V_SEVEN had its head office in Colombia. In another case, the vendor was based in another city in the U.S. while the last project involved the Indian vendor V_THREE which was also part of Study 2 (but for a different project). Interviews in Study 3 were also semi-structured.

3.1 Data Analysis

The objective of the data analysis was to understand what governance mechanisms are used in the projects and how they evolve over time during the project. Interviews for the eighteen cases in the three studies produced over 900 pages of transcripts and over 100 pages of field notes. There was thus a vast amount of qualitative data (i.e., interview transcripts) that was not easily amenable to analysis. We pursued two goals in analyzing this data. We tried to use the rich insights available in each case. For any case, these insights can best be obtained from thorough immersion into the transcripts for that particular case. In addition, we tried to compare across cases, which requires a more macro view of each case, and cannot be effectively obtained from a thousand pages of transcripts and notes.

To simultaneously achieve these two goals, we conducted the data analysis in a systematic and comprehensive, but not rigid, fashion. The analysis was necessarily somewhat interpretive in nature. It included the preparation of a summary for each case, comparison of case summaries to identify similarities and dissimilarities across projects, and reexamination of the interview transcripts to obtain richer understanding of the emergent patterns. Throughout the analysis, we used a systematic approach, highlighting comments on transcripts, using memos with transcript and page numbers to track the comments, and, comparing the comments within and across cases. Greater details about the overall data analysis approach are available in Sabherwal (2002).

4 Results

4.1 The Governance Mechanisms

Table 3 summarizes the governance mechanisms used in the various projects. As the Table shows, evidence of all four modes of governance was seen across the three studies. In managing project C1, however, there was little use of formal, impersonal mechanisms such as a project management plan, or a client involvement plan. This led to greater use of interpersonal interaction, both formal and informal. Formal, interpersonal interaction occurred through: (a) monthly status review meetings involving V_ONE's executives, analysts, and programmers, and CLIENT_1's senior business executives and IS executives; and (b) daily conference calls, which were attended by several individuals from each side and used for seeking clarifications and making suggestions. These mechanisms enabled behavior control by the client.

In addition, the dinner meetings prior to monthly meetings, personal visits, phone calls, FAX, and e-mail messages facilitated informal, interpersonal interaction and enabled some clan control, bringing the two sides together through open and direct communication. Individuals from the two sides shared a strong desire to make the system succeed. They developed good relations, and celebrated the project completion with a cruise party. Several executives from both sides made remarks such as the following:

> V_ONE Project Manager: Everybody wanted it to work and everybody wanted it to be successful ... we were always full force ahead... people cared and continue to care about this project.

The client executives seemed concerned about maintaining tight control over the activities of the vendor personnel during the IS project, especially after the initial problems. This emphasis on behavior control is illustrated by the following comment by a client IS executive:

> Our biggest problems came with making sure that we were monitoring the real progress and that is when we got into some more interesting situations. We all determined that we were going to use timelines and that we were going to meet weekly to discuss where we were in the project. After we got into our test phase we had daily phone meetings with the vendor. It is so difficult even with a project like that to ascertain exactly where programmers are in the development if you are not there and you have to be watching them.

Table 3: The Governance Mechanisms in the Various Projects

		Studies ->	1	2														3		
Coordination	Control	Governance Mechanisms / Cases ->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Non-coordination	Self Control	Multiple reviewers, Repetitive test cycle		✓			✓	✓												
		Rigorous internal reports					✓													
		Internal discussion groups								✓		✓								
Formal, Impersonal	Output Control	Problem/issue query form		✓	✓	✓	✓													
		Change control mechanisms										✓								
		FAX numbering scheme		✓		✓	✓			✓			✓	✓					✓	
		Categorization of issues			✓		✓										✓			
		Confirmatory follow-ups															✓		✓	✓
		Funneling										✓							✓	
		Parallel structures		✓		✓	✓													
		Client involvement plan						✓	✓											
		Project management plan		✓		✓	✓										✓			✓
		Periodic reports			✓		✓													
		Interim deliverables								✓			✓	✓						
Formal, Interpersonal	Behavior Control	Monthly status review meetings	✓																	
		Daily conference calls	✓																	
		Weekly/Fortnightly conference calls				✓								✓			✓		✓	
		Delineation of coordination roles			✓	✓	✓					✓						✓	✓	✓
		On-site (at vendor) coordinator				✓	✓					✓								
		On-site (at client) coordinator			✓		✓											✓	✓	✓
Informal, Interpersonal	Clan Control	Personal visits	✓		✓		✓	✓	✓			✓			✓			✓	✓	
		Meetings, phone calls, e-mail	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Others: photos, small group meeting												✓						

CLIENT_1's Vice President believed that in trying to control the project, it may have put too much pressure on V_ONE. Being sensitive to CLIENT_1's need to maintain control, V_ONE's executives complied with its "requests," such as moving people to the client site and participating in the daily conference calls. However, seeking to reduce the governance costs, V-ONE would have preferred more self control and output control (and the corresponding non-coordination and formal, impersonal coordination, respectively). They believed that greater use should have been made of electronic communication. They also seemed to have mixed feelings toward the daily conference calls, viewing positively their role in reducing the number of visits to client site and thereby reducing governance costs, but viewing negatively the need to report daily progress to CLIENT_1. Moreover, they did not like the client's demand to move the programmers to its site early in the project.

> We got zero work done in three weeks because we were off-site and away from our resources and our network set-up. When we got back we were just about where we were.

In Study 2, we saw evidence of all four types of governance mechanisms, including all four types of coordination (non-coordination, formal impersonal, formal interpersonal, and informal interpersonal) and the associated types of control (self control, output control, behavior control, and clan control) were observed.

Self control by the vendor was combined with a non-coordination and "over the wall" (Adler, 1995) delivery of software. For instilling confidence in the client that the vendor would exercise effective self control, several measures were used. These included rigorous internal reporting arrangements (e.g., an internal audit of each project every two months at V_TWO) and three other measures for ensuring software quality – an internal Quality Controller role, repetitive test cycle, and multiple reviewers for each program. The following remarks are illustrative.

> Project Manager at V_THREE: At least the first time when something is going remote, we feel that the client's perception is that they may be losing control -- that they are not going to manage it anymore. The fear of not being physically present during the development seems to be a factor which they encounter. We try to go out of our way to address this feeling by specifically, for example, talking of reporting mechanisms. The communication set up also seems to be very critical factor in terms of client feeling that how they would communicate with us.

> General Manager at V_FOUR: Initially we had to gain the credibility with the client. … When the delegation visited us they already had a positive view about our capabilities. They met the people here. They saw the facilities, they saw the methodology, they understood the quality standards that we have. They got more and more convinced.

Output control and formal, impersonal coordination were supported through a variety of standards, schedules, and plans. Standards included numbering schemes for FAX messages, a form for client personnel to inform the vendor about problems, pre-specified procedures for client to make changes in system requirements, and categorization of issues by importance or according to their technical or functional nature. Moreover, in order to avoid the chaos which may potentially arise from anyone from the client interacting with anyone from the vendor, communication structures were standardized by establishing parallel hierarchies on both sides of the relationship, and then specifying that the individual in each role would only interact with the corresponding individual from the other side. Another standard sought to reduce the potential for contradictory communications between the client and vendor by using single coordination person on each side to "funnel" or "balance" the diverse user needs. Formal, impersonal mechanisms also included periodic reports and deliverables (including, in one case, vendor programmers' time sheets!). Two types of detailed plans further enabled coordination and control. Called "client involvement plan" and "project management plan," they both specified ways in which the client personnel would contribute to the project although the project management plan was somewhat broader in nature.

In contrast to the above impersonal mechanisms, some formal and informal mechanisms were more interpersonal. Formal interpersonal mechanisms enabled behavior control by allowing the client executives to more directly observe the day-to-day progress. Two such mechanisms involved periodic conference calls and positioning a vendor executive as an on-site (at client site) coordinator. This individual, who was generally quite senior (a project leader or the project manager), helped with the **mutual adjustments** needed during the project, for example through the clarification of system requirements, renegotiations of interim schedules, and, in some instances, ensuring that FAX or e-mail messages from the vendor reached the client and received adequate attention. Moreover, in three cases (C4, C5, C10), the clients positioned one or more employees at the vendor site to answer possible questions from analysts and programmers and to better track the progress of the project. In some cases (C3, C4, C5, C10), each side nominated one or two (for technical and functional issues) points of contact, and clearly demarcated the roles to be performed by these **coordinators**.

Finally, informal, interpersonal coordination was also observed. In some cases, vendor's project managers, analysts, and programmers visited the client. These visits were more common during the early (analysis and design) and late (testing and implementation) phases, but relatively infrequent during the middle (programming) phase. In some cases, client executives also visited the vendor, generally during early parts of the project. During such visits, the visitors interacted with the people at the host organization, either on an individual basis or in group meetings. In one project, where telephone conference calls were frequently used, photographs facilitated the interpersonal interaction. All the

participants from each organization had a group photograph taken. These photographs were enlarged, and each group member was identified on them. This rather simple measure apparently helped build better interpersonal relationship as the two organizations' participants in the conference calls, most of whom had never met each other, could at least see what the people on the other side looked like. In some of these projects, such informal, interpersonal interactions seemed to contribute toward clan control by promoting shared goals and improving relations.

Overall, while V_FIVE and V_SIX hardly used any governance mechanisms, the other three vendors in Study 2 preferred formal, impersonal mechanisms[2]. The impetus for interpersonal interaction (both formal and informal), behavior control, and clan control seemed to be directed mainly from the client rather than from the vendor, except during the initial stages of some projects, where the vendors sought to earn the client's confidence. Consistent with Study 1, the vendors were more concerned about efficiently developing the system (to minimize governance and production costs). The vendors apparently viewed their clients as more concerned about the system being developed as quickly as possible (despite the potential increase in the vendor's governance and production costs). Some vendor executives also suggested that the clients were not very enthusiastic about their formal mechanisms. For example, Senior Consultant at V_FOUR remarked:

We put in a lot of change control mechanisms, either through a process or contractually. But we find that a lot of customers are concerned that contractually putting in change control mechanisms deprives them of the right to incorporate the latest changes.

Several governance mechanisms were used in the cases in Study 3. **However, no mechanisms that might enable self control by the vendor were mentioned.** This is not surprising given that most of the data were collected from the client's perspective. Moreover, three of the clients (all except CLIENT_15) acknowledged that they were less formalized than their vendors. There were also relatively few instances of formal, impersonal mechanisms. Four kinds of standards -- FAX numbering scheme (C17) categorization of issues (C15), confirmatory follow-ups (C15, C17, C18), and funneling (C17), and one target plan (project management plan, C18) were used.

Several interpersonal mechanisms were found in the four cases. Some of these were formal mechanisms that supported behavior control. They included weekly/fortnightly conference calls (C15, C17), single/dual point(s) of contact (C17), and an on-site (at the client) coordinator (C15, C16, C18). Other

[2] In fact, one of V_THREE's Project Manager complained that it was *too* focused on formal governance: "Throughout my career -- almost 11 years in V_THREE -- never has a manager said "be creative, so that the client will remember that he prepared something good." All they are interested in is deadline. Do something, whether it is good or bad, just do it."

interpersonal mechanisms were more informal -- they included personal visits (C15, C16, C17) and teams (pilot committee in C15, working committee in C17, operations group in C18). In addition, of course, regular phone calls, FAX, and e-mail facilitated direct interaction among the participants. In C15, an early direct contact included reviewing the resumes of the vendor's programmers:

Consistent with the greater emphasis on interpersonal interaction, there seemed to be greater use of clan control in these cases, especially in C15 and C16. Several client executives pointed out that the vendor and the client had common goals. For example, the project manager for C16 noted:

> The vendor has been very supportive and very understanding as I think we have also been. It has been a win-win type of scenario. We both are committed to getting this done almost to no matter what it takes we will get it done, so there has been no animosity or no problems in that respect. They have been very friendly conversations.

Supporting the conclusions emerging from the other two studies, the cases in Study 3 revealed that the clients may be more concerned about control over the project rather than coordination of activities with the vendor. Several client executives mentioned the reduced control due to remote outsourcing. Executives at CLIENT_15 and CLIENT_18 were concerned about the quality of people that worked on these projects whereas CLIENT_17 executives were worried about their inability to demand the immediate attention they could ensure in internal projects. CLIENT_18 executives also reiterated an issue raised at CLIENT_1 in Study 1 -- the inadequacy of software testing by the vendor.

> Project Leader at CLIENT_17: We are supposed to get a new version from them every week. That doesn't usually happen. And that is one of the problems of being in a remote site, you don't get fast response … It is frustrating because we don't have control over what they do.

> Director (IS) at CLIENT_18: It is possible that some of the code was written by fairly junior programmers which means that when you do an outsourcing job like this … you rely on the outsourcing firm to have confident people, you are really leaving that control to the outsourcing company … I think you need to have the ability to understand who is going to be doing the coding, what level of experience they have and have some control over it.

The clients' emphasis on behavior control was in sharp contrast to their relative indifference toward formal coordination and output control, especially early in the project. CLIENT_16 and CLIENT_18 paid little attention to either coordination or control. CLIENT_16 seemed to be exercising some amount of clan control based on the system's long-term benefits to the vendor, while CLIENT_18 executives delegated project governance entirely to the sub-contractor hired as Project Manager. **CLIENT_15 and CLIENT_17 executives devoted relatively**

greater efforts to project governance, but their focus was primarily on interpersonal interaction and behavior control rather than formal, interpersonal mechanisms or output control. Even at CLIENT_17, attention was given to project governance only after the IS group, which was initially excluded from the project, got involved.

Given the relative preponderance of informal mechanisms in these cases, it is interesting to note that, several client executives believed, in retrospect, that they should have been more formal. The following remark illustrate the common view that remote outsourcing requires greater diligence:

> Director (IS) at CLIENT_18: One thing I learned is when we outsource … there has to be a tremendous amount of importance placed on oral communication and keeping that up to find out what is going on. But in addition, written communication that kind of tracks what is happening, what has been decided, what has been promised. When I look back at some of the documentation that went through the project, when we looked at "well, was this guy supposed to do this?" it was difficult for us in some cases to say, "yes, and we talked about it on this date." … There needs to be a lot of diligence paid towards the scope and keeping very good project documentation as the project moves along so you understand where you are and who is responsible for what.

4.2 The Evolution of Governance Mechanisms

Figure 3 summarizes the model of evolution of governance that emerged from Study 1. The initial conditions, which are attributes of the system, the client and the vendor, and the relationship between them, influence the initial vulnerability and governance structure. In this case, the initial conditions included the fixed-price nature of the contract, the contract being perceived as quite detailed, the client's confidence in the abilities of V_ONE (especially in its President and Vice President), the client's inexperience with outsourcing, the involvement of another vendor in the external design process, and V_ONE's strong financial backing. Due to these factors, neither side initially felt vulnerable to opportunistic behavior by the other. The initial governance was based on self-control and non-coordination as no formal coordination and control mechanisms were established. The client seemed to expect the carefully selected vendor to exercise self control and develop good software.

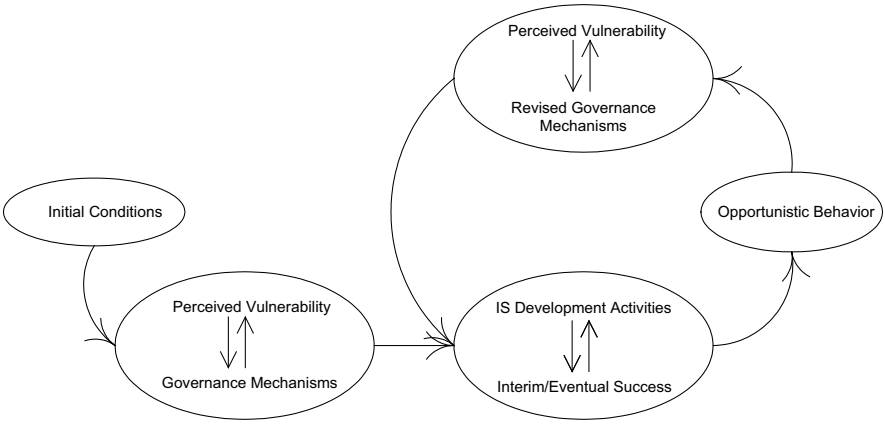


Figure 3: The Initial Model of Evolution of Governance Mechanisms

However, numerous problems in the first software delivered by V_ONE made CLIENT_1 concerned about its ability. Some client executives believed that V_ONE was behaving opportunistically as its top executives were not participating, a junior and less competent project manager had been assigned, and some of the software was apparently not even tested. Recognizing the system's, and their own, vulnerability to the vendor's actions, the client executives shifted project governance toward behavior control and interpersonal (formal and informal) coordination through collocation (when they asked the vendor to send its programmers to their location), frequent meetings, and daily conference calls. In the words of one client IS executive, "in the beginning we let them track their own time and we have learned from that and are doing that for them now." Another IS executive at CLIENT_1 thus described the perception of vulnerability and the consequent shift in project control:

Then they put on a large show when they came on down here to say they were delivering the system. … It was a kind of facade instead of a system … It was at that point when we realized we were in trouble and we started getting into our daily meetings and tight control over everything and working with them very closely monitoring them. We did that for quite a few months and then we had a system that was good enough to go out with. So, that was a turning point and kind of changed our relationship with them a little bit.

Clan control also seemed to play an important role toward the later parts of the project, when the participants from the two sides had developed good interpersonal relations and recognized the project's importance to everyone involved. Thus, after the initial hands-off governance through expected self control and non-coordination, the remainder of the project continued with much more hands-on governance by the client, through interpersonal interaction and behavior and clan control.

Study 2 also provided further insights into the evolution of governance in remotely outsourced IS projects. Three distinct scenarios emerged as possible variants of the model developed in Study 1. These scenarios are summarized in Figure 4, and discussed below.

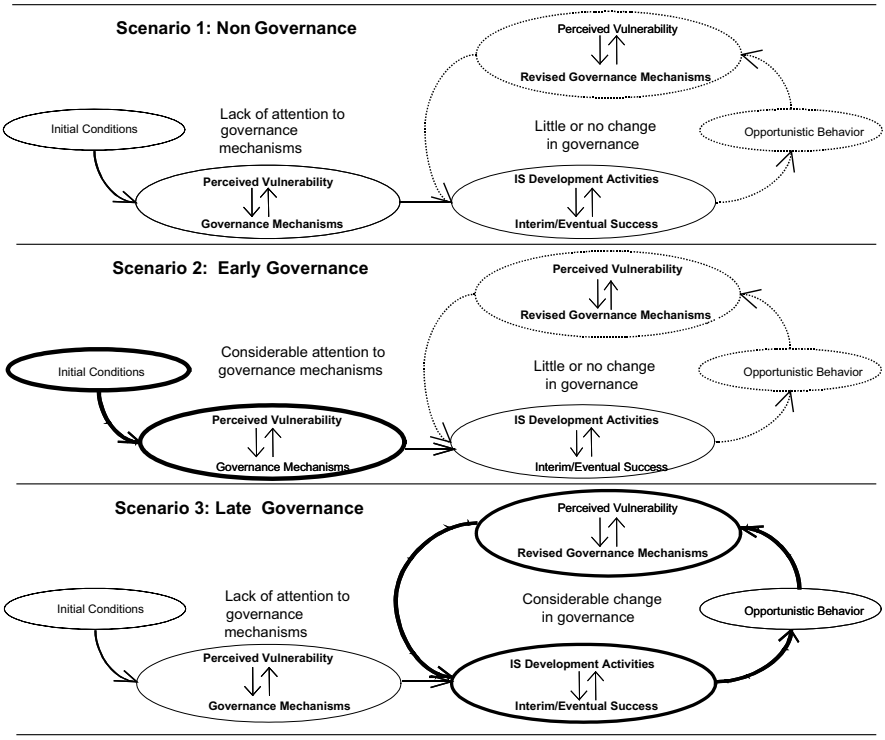


Figure 4: Scenarios for the Evolution of Governance

Scenario 1 (Non-Governance) is shown in the top portion of Figure 4. It involved little initial attention to governance and also little change in governance later in the project. In the only project (C14) involving V_SIX, no formal governance mechanisms were established. However, due to the past strong relationship between the two organizations and the simple nature of the project, especially considering the expertise of V_SIX, the IS project was quite smooth and successful. A similar situation was observed in project C9, a simple project for a client with whom the vendor, V_FOUR, had a prior relationship. V _FOUR made little use of governance mechanisms in this project, which encountered a few problems related to delays in receiving specifications from the client. However, the problems were rather minor and they did not cause conflict or increase perceived vulnerability of either party. Consequently, the project continued without increased governance mechanisms.

Scenario 2 (Early Governance), which is shown in the middle portion of Figure 4, was characterized by early attention to governance mechanisms followed by little or no change in them later on. V_TWO, V_THREE, and V_FOUR, spent considerable effort early in the project in establishing formal governance mechanisms (e.g., project management plan, client involvement plan, configuration management, and parallel hierarchical structures), with V_TWO being the most extensive. They were also sensitive to the client's potential feeling of vulnerability and loss of control. They tried hard to address these concerns early on by building credibility through: (a) the extensive formal governance mechanisms, (b) personal interactions, and (c) inviting client executives to visit them to examine their infrastructure and capabilities. Demonstration of effective self control thus complemented output control through periodic reports with pre-specified formats and timing. This early attention to governance reduced the need for behavior control and interpersonal coordination later in the project.

Project C5 illustrates this scenario. CLIENT_5 asked V_TWO and three other vendors to do a pilot project on-site, following which it selected V_TWO for the remote project. The client was apparently impressed by V_TWO's ability, governance mechanisms, and internal procedures. V_TWO used several mechanisms to facilitate self control, including internal reports on meetings with the client, an internal Quality Controller, and multiple reviewers for each program. The project also benefited from several formal, impersonal mechanisms, including a standard query form, separation of functional and technical queries, use of a separate liaison person for each type of query, and weekly progress reports to client. The early delineation of these formal, impersonal mechanisms reduced the need for behavior control later. Most of the interpersonal interaction in this case occurred during the analysis phase.

> Project Leader: We had one client visit in the beginning stage ... to review the setup here, to see physically how the whole thing works ... he could see the logistics of it ... Just look at the comfort level. That was only one visit. And after that, they have not visited, through the rest of the period they haven't visited.

Like scenario 1, ***Scenario 3 (Late Governance)***, which is shown in the bottom part of Figure 4, is characterized by a lack of early attention to governance mechanisms. However, unlike scenario 1, here the project encounters problems and the governance mechanisms undergo considerable change later in the project. The evolution of governance mechanisms in the only project studied at V_FIVE (C13) followed this path. V_FIVE and CLIENT_13, as well as the two intermediaries between them, ignored governance mechanisms during the initial stages of the project. Little planning was done for the nature and frequency of reports, timing of vendor personnel visits to client site, and sign-off points. V_FIVE was in sharp contrast to V_TWO, V_THREE, and V_FOUR; it did not even plan for the language differences with the client! As expected, the project quickly ran into trouble, and the client took charge of the project. Making the

vendor send its programmers to its site, the client shifted project governance to behavior control and formal, interpersonal coordination. This scenario represents the evolution of governance in project C1 in Study 1 as well. In that project also, governance mechanisms received little attention early on, but later when the project ran into trouble, the client tightened its control. However, these projects differed somewhat; late in the project, clan control complemented behavior control in C1 but not in C13.

Study 3 also provides further insights into the evolution of project governance. In projects C16 and C18, both involving V_SEVEN, the governance mechanisms evolved as in ***Scenario 1 -- Non Governance***. In both these cases, little effort was devoted to establishing formal governance mechanisms early in the project, and even later there was no increase in governance mechanisms. This was understandable at C16 as the project was straightforward for the vendor and the vendor anticipated several long-term benefits from its relationship with CLIENT_16. This project was thus reminiscent of project C14 in Study 2, which also involved a simple system (especially for the specific vendor in each case) and a long-term relationship between the client and the vendor. The continued non-governance at C18 was more difficult to understand, especially since both the vendor and the client's project manager (the sub-contractor) perceived each other as behaving opportunistically. That CLIENT_18's top management continued to pay little direct attention to project governance, leaving it entirely to an individual who was hired for the duration of the project (and, as the vendor's CEO pointed out, would benefit from the project taking *more* time!) may be attributed to the system's non-critical nature and the fixed-price nature of the contract. These cases indicate that some initial conditions, most notably a simple and non-critical system, a fixed-price contract, and a long-term relationship between the client and the vendor, continue to influence the governance mechanisms even later in the project. In the absence of these factors, the project governance might have been tightened when opportunistic behavior by V_SEVEN was encountered in C18. This influence of the initial conditions on perceived vulnerability and governance mechanisms later in the project is incorporated in the revised model of evolution of governance mechanisms, shown in Figure 5.

Project C15 involved evolution of governance mechanisms in a fashion resembling ***Scenario 2 -- Early Governance***. Despite the prior relationship between CLIENT_15 and V_THREE, a client executive visited V_THREE early in the project. The project began with a combination of self control and output control, although formal mechanisms were not set up. This was somewhat different from V_TWO's approach combining formal, impersonal coordination, self control, and output control, but consistent with V_THREE's approach of using several interpersonal mechanisms to complement the formal, impersonal ones. The project continued with the same governance later in the project despite some problems, including some unilateral personnel changes by the vendor. That the client did not incorporate behavior control seemed to be due to the prior excellent

relationship between the two sides and the interpersonal interaction, in which the vendor's liaison person at client site played a key role. This effect of the initial conditions on the governance mechanisms following opportunistic behavior is included in the revised model of evolution of governance shown in Figure 5, as mentioned above.

The governance of project C17 followed a path similar to *Scenario 3 -- Late Governance*. It began with a somewhat loose contract, combined with expected self control and few explicit governance mechanisms. Somewhat later, formal, interpersonal mechanisms enabling output control were introduced. However, the changes did not come about due to a perceived opportunistic behavior by the vendor as in the other instances of this scenario. Instead, the governance mechanisms changed following the involvement of the client's IS group into the project. The model of evolution of governance was modified to include the possibility of the project governance and vulnerability being affected by a major change in project responsibilities, as shown in Figure 5.

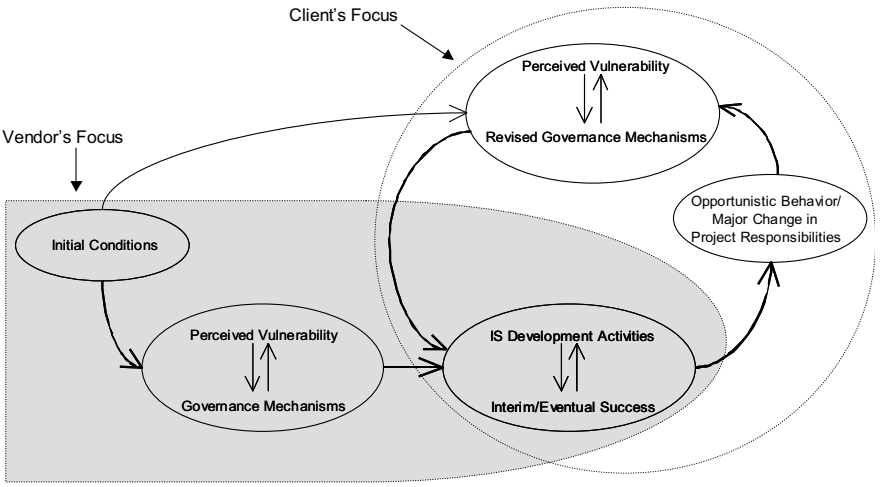


Figure 5: The Emergent Model of Governance Mechanisms

5 Discussion

This paper provides insights into the governance mechanisms used to manage remotely outsourced IS projects. The broad categories of mechanism, the different types of mechanisms in each category (standards, plans, etc.), as well as the specific illustrations of each type of mechanism (e.g., using parallel structures as

an illustration of hierarchical arrangements) should help in the management of other outsourced IS projects.

Table 4: Comparison of Client and Vendor Perspective

	Client Perspective	Vendor Perspective
Perceived Threat of Opportunistic Behavior	High	Low
Preferred Governance Mechanisms		
• Coordination	Formal Interpersonal, Informal Interpersonal	Non-Coordination, Formal Impersonal
• Control	Informal control • Clan control • Behavior control	Formal control • Self control • Output control
Concerns about Controlling Different Costs		
• Concerns about controlling production costs	**Low**, especially in fixed-price contracts	**High**
• Concerns about controlling vulnerability costs	**High**	**Low**
• Concerns about controlling governance costs	**Low**	**High**

Client and vendor executives involved in other remotely outsourced IS projects might also benefit from the insights this paper provides into the perspective of the other party in the relationship. Table 4 presents the results from the two perspectives. The middle column summarizes the client's perspective. The clients were not much concerned about lowering the vendor's production and governance costs. Unable to observe the vendor as closely as they would observe the internal IS staff, or even a local vendor, they seemed to be wary of opportunistic behavior by the vendor, especially when problems and delays were encountered. The clients, particularly those who lacked prior experience with remote outsourcing, were therefore concerned about maintaining the kind of behavior control they had become accustomed to in internal projects. Seeking to achieve such behavioral control, they focused on interpersonal interactions to deal with the problems as they arise. Thus, the clients seemed to prefer a relationship that is close to the hierarchical structure.

In contrast, the vendors were not much concerned about opportunistic behavior by their clients. They apparently wanted to be left alone by their clients, preferring the project to be managed such that their production and governance costs would be minimized. Thus, the vendors desire a relationship that is close to the market structure. Toward this end, some vendors (especially V_TWO, V_THREE, V_FOUR) took great care to establish formal, impersonal mechanisms early in the project. They seemed to be sensitive to the client's desire for control over the project, and used the formal mechanisms and their internal quality control procedures to convince the client about the effectiveness of self control and output control. They only used interpersonal interactions early in the project (to win the client's confidence) or in response to client requests. These vendors emphasized the need for anticipating, and planning for, the problems rather than addressing them once they arise.

Some other vendors (e.g., V_ONE, V_FIVE, V_SIX, V_SEVEN), who also wished to be left alone and minimize governance and production costs, neglected governance mechanisms early in the project. If the project did not encounter

problems and delays (as in C_13, C_16, and C_18), there was little change in governance later in the project. However, if problems arose (as in C_1, C_13), the client became more sensitive about its vulnerability to potential opportunism by the vendor, and introduced greater behavior control and interpersonal interaction.

Thus, viewed in conjunction, the findings from the three studies help understand the relationship between the two parties in remote outsourcing. The client feels vulnerable to opportunism by the vendor, but enters the project without emphasizing project governance. The vendor, in contrast, does not feel so vulnerable, but, and possibly because, it seeks hands-off management by the client. The client pulls the relationship toward a hierarchy structure, wherein problems are addressed through adjustments and incremental decisions for which interpersonal interactions are suitable. The vendor, in contrast, pulls the relationship toward a market structure, dictated by contracts and *a priori* governance structures. Both parties thus try to pull the relationship into the world they feel most comfortable, and the end-result seems be somewhere in between – a relationship in which there is greater involvement by the client and greater interpersonal interaction than the vendor would desire.

The paper also provides insights into the evolution of governance mechanisms. Figure 5, discussed earlier, shows the emergent model. The Figure also indicates that several vendors sought to address the client's perception of vulnerability by influencing the initial conditions (e.g., the client's confidence in the vendor). In contrast, the clients seemed to influence project governance during the later parts of the project. Three possible ways (non-governance, early governance, and late governance) in which the governance mechanisms might evolve due to the above differences in client and vendor perspectives have also been identified.

The paper also has several ***implications for future research***. One potentially useful area of future research is empirical testing of the differences observed between vendor and client perspectives. Questionnaires using quantitative measures of the various constructs, as well as additional case studies comparing client and vendor perspectives on the same project would provide further insights into these differences.

Further research is needed to support the governance mechanisms identified in this paper. The governance mechanisms have been drawn from the literature in the areas of coordination and control. Other kinds of mechanisms, and other ways of classifying them, may provide avenues for further examining the governance of remotely outsourced IS development projects.

Future research should examine the complex organizational processes through which the governance mechanisms are adopted or discarded. This research has provided an initial model of the evolution of governance mechanisms (Figure 5) and presented three potential scenarios (Figure 4). Future exploration of the evolution of governance would benefit from such processual perspectives as organizational learning and interorganizational dialectics, and from focusing on

cognitive, symbolic, and political factors that influence the evolution. Longitudinal cases would be most appropriate for examining such dynamics of governance.

Future research can also build upon the findings of this study by additional factors, such as project attributes and the prior IS experience of the client and its employees, that influence the governance mechanisms. Questionnaire surveys administered at multiple points in time during a set of outsourced IS development projects would help in examining the ways in which the initial conditions affect the governance mechanisms and the changes in them.

Finally, future research may also compare the governance mechanisms used in internal IS development with those used in outsourced development. Internal IS projects do not involve another organization, and vulnerability, goal incongruence, and information asymmetry may be considered less important. However, IS and user departments may have different goals, possess different kinds of information, and may feel vulnerable to each other's opportunistic behavior.

In conclusion, the eighteen cases, including some studied from the client's perspective, some from the vendor's perspective, and one from both perspectives, provide valuable insights into the governance of remotely outsourced IS projects. The vendors, who are obviously more experienced with outsourcing, prefer to go into the projects with greater preparation, as reflected in their greater concern for formal, impersonal coordination and output control. In contrast, the clients, who have less experience with these projects, may enter the project with less emphasis on governance mechanisms. Later, the client seeks greater project control when it develops a better recognition of its vulnerability to opportunism by the vendor or when the project runs into problems. In trying to attain this control, the client focuses mainly on interpersonal interaction and behavior control, although clan control may also sometimes arise later, especially when the interpersonal interactions foster positive relationships and enhance the recognition of shared goals.

References

Adler, P.S. "Interdepartmental Interdependence and Coordination: The Case of the Design/Manufacturing Interface," *Organization Science* (6:2), March-April 1995, 147-167.

Beath, C.M., "Managing the User Relationship in Information Systems Development Projects: A Transaction Governance Approach," *Proceedings of the Eighth International Conference on Information Systems*, 1987, 415-427.

Choudhury, V., and Sabherwal, R. 2003. Portfolios of control in outsourced software development projects, *Information Systems Research*, 14(3): 291-314.

Clark, T., Zmud, R.W., and McCray, G., "The Outsourcing of Information Services: Transforming the Nature of Business in the Information Industry," in *Strategic Sourcing of Information Systems*, Willcocks, L.P., and Lacity, M.C. (Eds.), Wiley, New York, 1998.

Cross, J. "IT Outsourcing: British Petroleum's Competitive Approach," *Harvard Business Review* (73), May-June 1995, 94-102.

Crowston, K., "A Coordination Theory Approach to Organizational Process Design," *Organization Science* (8:2), March-April 1997, 157-175.

DeSanctis, G., and Jackson, B.M. "Coordination of Information Technology Management: Team-Based Structures and Computer-Based Communication System," *Journal of MIS* (10:4), Spring 1994, 85-110.

Heiskanen, A., Newman, M., and Simila, J., "Software Contracting: A Process Modeling Approach," *Proceedings of the International Conference on Information Systems*, 1996.

Henderson, J.C., and Lee, S., "Managing I/S Design Teams: A Control Theories Perspective," Management Science, (38: 6), June 1992, 757-777.

Huber, R.L. "How Continental bank Outsourced its "Crown Jewels," *Harvard Business Review* (71), January-February 1993, 121-129.

Jarvenpaa, S.L., Shaw, T.R., and Staples, D.S. 2004. Toward Contextualized Theories of Trust: The Role of Trust in Global Virtual Teams, *Information Systems Research*, 15(3): 250-267.

Kirsch, L.J., "The Management of Complex Tasks in Organizations: Controlling the Systems Development Process," *Organization Science*, (7:1), January-February 1996, 1-21.

Kirsch, L.J., "Portfolios of Control Modes and IS Project Management," *Information Systems Research*, (8: 3), September 1997, 215-239.

Kirsch, L.J. Deploying common systems globally: The dynamics of control. *Information Systems Research*, 15(4), 2004, 374-395.

Koushik, M.V., and Mookerjee, V.S. "Modeling Coordination in Software Construction: An Analytical Approach," *Information Systems Research*, (6:3), September 1995, 220-254.

Kraut, R.E. and Streeter, L.A., "Coordination in Software Development," *Communications of the ACM*, (38: 3), 1995, 69-81.

Lacity, M.C., and Hirschheim, R. "Information Systems Outsourcing," John Wiley, Chichester, 1993a.

Lacity, M.C., and Hirschheim, R. "The Information Systems Outsourcing Bandwagon," *Sloan Management Review*, Fall 1993b, 73-86.

Malone, T.W., and Crowston, K. "The Interdisciplinary Study of Coordination," *ACM Computing Surveys* (26:1), March 1994, 87-119.

Mantei, M., "The Effects of Programming Team Structures on Programming Tasks," Communications of the ACM, (24:3), 1981, 106-113.

McFarlan, F.W., and Nolan, R.L. "How to Manage an Outsourcing Alliance," *Sloan Management Review*, Winter 1995, 9-23.

Nidumolu, S. "The Effect of Coordination and Uncertainty on Software Project Performance: Residual Performance Risk as an Intervening Variable," *Information Systems Research* (6:3), September 1995, 191-219.

Nidumolu, S. "A Comparison of the Structural Contingency and Risk-based Perspectives on Coordination in Software-development Projects," *Journal of MIS*, (13:2), Fall 1996, 77-113.

Ouchi, W.G. A conceptual framework for the design of organizational control mechanisms. *Management Science*, 25(2), 1979, 833-846.

Rothfeder, J., and Coy, P., "Outsourcing: More Companies are Letting George Do It," *Business Week*, No. 3181, October 8, 1990, p. 148.

Sabherwal, R. 1999. The role of trust in managing outsourced IS development projects. *Communications of the ACM*, 42(2): 80-87.

Sabherwal, R. 2003. The evolution of coordination in outsourced software development projects: A comparison of client and vendor perspectives. *Information and Organization,* 13: 153-202.

Van de Ven, A.H., Delbecq, A.L., and Koening, R. "Determinants of Coordination Modes within Organizations," *American Sociological Review* (41:2), April 1976, 322-338.

Yourdon, E. "Wake up, US programmers," *ComputerWorld,* Dec. 6, 1993, 128.

Appendix: The Cases

Study 1

This case focused on one large division (Div_A) of CLIENT_1. Div_A delivered its services through an extensive network of independent dealers, managed through its district offices. CLIENT_1's Chief Information Officer (CIO) proposed SYS_1 in 1989 as an interorganizational system, linking AS/400 mid-range computers at Div_A's district offices to personal computers (PCs) at its dealers. Requiring an investment of $25 million, SYS_1 was expected to increase Div_A's asset utilization, reduce costs for Div_A and the dealers, and improve customer satisfaction. The proposal was supported by a senior executive at Div_A and CLIENT_1's President. The Board of Directors approved it in September 1989. CLIENT_1 executives discussed its scope for a few months, and then invited a vendor in February 1990 to help with requirements determination and external system design.

Following the external design, CLIENT_1 began to search for another vendor for developing the system. This vendor would develop the dealer PC-based software and the software supporting communications between dealer personal computers and CLIENT_1's AS/400 computers. CLIENT_1's IS department would modify the existing systems to make them compatible with the new system. A diverse group of 15 to 20 people from several departments reviewed proposals, heard presentations, conducted follow-ups, short-listed four finalists, and then selected V_ONE in June 1990.

V_ONE was scheduled to develop a pilot by the end of 1990, with the full system to be rolled out by May 1991. Early in development, V_ONE found the external design specifications developed by the first vendor to be ambiguous and somewhat shallow. To make matters worse, V_ONE did not have a good understanding of the business operations of CLIENT_1 and its dealers. As they progressed further, both V_ONE and CLIENT_1 realized that they had underestimated the scope of the system. Moreover, as the participants better understood the possibilities, the system's scope expanded and the original targets seemed unrealistic. Although these problems were addressed to some extent by avoiding the less important functions, the project soon fell behind schedule. In the light of the system's visibility and the investments involved, this delay caused considerable pressure and made people hurry, avoiding important steps that they might have otherwise taken.

Recognizing the system's complexity, the software was tested, in succession, by V_ONE, CLIENT_1's IS group, and a group of users. The client's IS group found several problems in the initial software, which made some people at the client concerned about V_ONE's capability. In fact, some client IS executives believed

that V_ONE was behaving opportunistically since "in the beginning, some of the enhancements were clearly not even tested." In contrast, the vendor executives argued that the client did not provide the necessary testing environment.

CLIENT_1's senior IS executives decided to more closely monitor the IS development by V_ONE. They persuaded V_ONE to move the team of programmers to CLIENT_1 head-office. However, the programmers were much less effective away from their normal workplace and returned to V_ONE after three weeks. The project was then governed through daily conference calls between the participants from the two organizations. These calls, along with monthly meetings and frequent phone calls and FAXes, helped people from CLIENT_1 and V_ONE to closely work together during IS development. The daily conference calls were continued for almost two years.

In March 1991, there was a change in the senior executive in charge of Div_A. The CIO, talked about SYS_1 to the new senior executive, with whom he had worked for many years. The project was continued but the delays made corporate managers impatient. In order to demonstrate progress, a preliminary system was tested with two dealers in April 1991. The system's benefits were also demonstrated to some dealers. This bought the proponents of SYS_1 some time. After a nine-month delay, a pilot test of SYS_1 was started in a northwest district in September 1991. This was the first live test of the communications software. The problems identified during the pilot test were attributed partly to the architectural differences and communication problems between SYS_1, which ran on PCs, and the existing internal system, which was based on a mid-range computer platform.

Unanticipated situations in the dealers' business environment caused additional problems. A senior executive from V_ONE indicated, for example, that some problems were caused by CLIENT_1 not knowing that some districts had unique tax structures. Moreover, CLIENT_1 underwent a major reorganization in the second half of 1991. Div_A, which until now was part of a larger division, was made an independent business unit. The number of districts within Div_A were reduced to one-fourth of the previous number by making the districts larger. This led to a fourfold increase in the communication between a district office and its associated dealers. The reorganization provided CLIENT_1 and V_ONE, who disagreed about which functions were included in the scope of the project due to the unclear original specifications, another cause for disagreement. According to V_ONE, several of the modifications were required only due to the reorganization, while CLIENT_1 believed that they would have been necessary even if the reorganization had not occurred.

The client executives felt that V_ONE assigned some of its best programmers to the project. However, some client executives were concerned that V_ONE's top executives, with whom they were impressed during vendor selection, participated little in the project. In addition, CLIENT_1's IS executives were dissatisfied with

the project management at V_ONE. They believed that V_ONE's project manager was not at a senior level in its hierarchy and lacked interpersonal and project management skills. V_ONE senior executives acknowledged the poor project management at their end and considered it responsible for CLIENT_1's view of low involvement by their top management. Therefore, midway during the project, V_ONE hired a new senior executive to manage the project.

The disagreements made the monthly meetings quite intense, which demoralized some of V_ONE's junior people. The new project manager suggested that the senior executives from both sides discuss the issues openly over dinner prior to the monthly meeting. The occasionally heated dinner meetings helped to clear the air and shield the technical people from both sides.

The corporate managers' concerns due to the problems in the pilot test were further enhanced in November 1991, when the CIO postponed expanding the pilot into an additional district. Therefore, in January 1992, the CIO took a group of senior executives to the pilot test site to demonstrate the system's progress. The visit went off well, with the senior executives feeling very positive about the system. The roll-out of the system at the dealers nationwide began in early 1992. SYS_1 was acknowledged as a success by late 1992, although the roll-out was not completed until April 1993.

Study 2

V_TWO has grown rapidly since its creation in 1989 as an entirely export-oriented company. Along with V_THREE, it has the largest share of India's software export to the U.K. I studied four projects (C2-C5), from its perspective, all for clients in the U.K. V_TWO used a very formal approach to govern these projects. Before each project began, it set up formal governance mechanisms. It developed a Project Management Plan, indicating project scope and duration, contact persons, reporting and communication procedures, standards, frequencies of various reports and meetings, and specific sign-off's by both sides. It also estimated the proportions of various tasks to be done on-site , numbered all FAXes, used a standard problem/issue query form for changes, and maintained a trail of all change requests. It used a consistent hierarchical structure across projects, and insisted that the client also establish, for the purpose of the project, a parallel structure. Coordination was then done at the same level, usually with copies to the supervisor on each side. V_TWO imposed considerable discipline on the clients, clarifying that they would not be able to "change things on the fly."

V_TWO's executives were sensitive to the clients' need to control the project and to their feeling vulnerable due to remote outsourcing. It sought to address these concerns through the early establishment of reporting structures and mechanisms, and through personal interactions during the initial stages of the project. Through formal, impersonal coordination mechanisms, it tried to demonstrate a high level

of output control. In addition, it tried to convince the clients that it would exercise effective self control, facilitated by an engineering approach to IS development, careful quality assurance, and periodic reports and meetings. This combination of self-control and output control reduced the need for behavior or clan control. The Development Manager remarked:

At every stage there is a document that is reviewed by the client. So there is good control over it. We have a good configuration management in place so that changes can be tracked down to the lowest level of detail. That reduces the communication requirement.

However, one of V_TWO's projects (C4) encountered problems as unexpected changes in client needs, due to changes in the software industry for which this system was developed, led to discussions of "is it included in the original specifications?" These changes caused much greater use of formal, interpersonal coordination and behavior control in this project. Conference calls and a client representative at vendor site played important roles in this project.

V_THREE is one of the five largest and oldest software vendors in India. It has been exporting software to many countries for several years. I studied two projects at V_THREE, involving clients in the Netherlands and the U.K. V_THREE executives echoed the feelings expressed at V_TWO regarding the client feeling vulnerable in remotely outsourced projects. V_THREE also used a formal approach to project management. It had a hierarchy, which at the project level resembled the one at V_TWO. The involvement of the client was pre-specified early in the project, in the form of a "client-involvement plan" which identified the client personnel who would need to be at the vendor site in India to provide clarifications, and for how long. However, V_THREE did not set up the kind of detailed project management plans that V_TWO developed. Instead, it placed somewhat greater importance to interpersonal interaction. Its project management approach differed across projects. For example, it was more cautious in the Dutch project (C6) where the client was less sophisticated in IS than the client in the U.K. (project C7). The Project Leader for C7 believed that the coordination was quite poor until the middle of the project, when he got involved. Partly due to the lesser attention to governance, several problems arose, requiring considerable interpersonal interaction.

V_FOUR is a combination of two sister companies that focus on different aspects of IT but often do IS development projects in a joint fashion. Both companies are among the 20 largest information technology vendors in India. I studied five projects at V_FOUR, involving clients in Thailand (C8, C9), the U.S. (C10, C12), and the Netherlands (C11). At V_FOUR also, the executive seemed to appreciate the client's feeling vulnerable in remotely outsourced projects. Recognizing this, there was an emphasis on establishing credibility and allaying the client's fears.

Senior Manager: In many projects, the client knows that he is taking a risk by farming out the project ... At any point there is the possibility of project failure or

its getting delayed. He just might want to get out of the commitment. In such a situation, each interim deliverable that you submit ... has to make it reflect the organization's ability to deliver.

V_FOUR paid considerable attention to details when setting up the governance mechanisms. It established "change control mechanisms," identified acceptance criteria, and used standard forms and FAX numbering schemes. It designated one point-of-contact with the client, and tried to persuade the client to do so as well. It also used on-site liaison personnel to help in the coordination efforts.

One illustrative project, C10, was to develop a complex system for a client with whom V_FOUR had no prior experience. Formal, impersonal mechanisms were used to a considerable extent, but as in some other cases, they emerged over time (e.g., the client took some time to recognize the value of "balancing" contrasting internal views and providing a single input to the vendor). The need to make site visits was also identified later in the process.

V_FIVE is a large public sector IS vendor. It has been in the IS development business for a long time. I was therefore surprised to its somewhat ad hoc management of remote IS projects.

V_FIVE encountered numerous problems in the project I examined there. The goal of this project (C13) was the development of a human resource management system for a government organization in the middle East. In addition to V_FIVE and the client, two intermediary organizations, a local vendor who received the contract from the client and another organization that was V_FIVE's local contractor, were involved. V_FIVE communicated with its local contractor but did not know what was specifically committed to the client. The situation was further aggravated by V_FIVE's poor preparation for the project. It did not structure the relationship so as to understand the client needs, nor did it have a formal structure for interacting with the two intermediaries. The project was delayed by eight months. Feeling concerned, the client decided to take charge, and forced the vendor to do the development at its site. Moreover, the vendor executives told me that the client also forced them to give all the source code and it later used the vendor's software at another organization.

V_FIVE seemed to have learned some lessons from C13. When I visited them, it had started a new project, in which it was trying to avoid the mistakes from the previous project. However, it had still not deployed the kind of governance mechanisms used by V_TWO, V_THREE, and V_FOUR.

V_FIVE's Group Leader: In [the new project], we were very clear, saying that V_FIVE has the right to decide where they want to do the development. That was number one. Number two was that there was no third party involved. It was a direct agreement with the customer. Another problem in the previous project was our deliverables, we put in so many things as deliverables, which we avoided this time.

V_SIX is a large hardware manufacturer which had recently entered the software development business market when I visited it. It followed a less formal approach than V_TWO, V_THREE, and V_FOUR. The Director (Projects) told me that "the rules and procedures are there but the work environment is quite informal." I studied one remote IS development project at V_SIX, involving the porting of a UNIX-based software to a new hardware platform for a client based in the U.S. In this project, there was some interpersonal interaction. But the software development was managed rather informally, due to: (a) the prior experience the two companies had with each other; and (b) V_SIX's experience with both UNIX and the client's hardware, to which the software was being ported. These factors, and especially the long-standing relationship between the two organizations, helped the project to progress smoothly despite the lack of attention to project governance.

Study 3

CLIENT_15 is a Fortune 500 financial services company. The remote outsourced IS development project was a 12 man-year, $0.5 million, project involving enhancements to a global customer service system that supported over two hundred different markets around the world. The vendor was V_THREE which I had visited in Study 2 to examine some projects for other clients.

The requirement analysis was done by CLIENT_15 without involving the vendor. V_THREE had a good reputation at CLIENT_15, for which it had developed some other systems. Another point in V_THREE's favor was its infrastructure which enabled it to interact directly with CLIENT_15's communication network. An executive from CLIENT_15 went to India to check out V_THREE's people and facilities before awarding the project to it. Later, the client prepared a detailed project plan and negotiated schedules with the vendor. However, the project was not set up in a structured fashion, possibly due to the prior relationship between the two organizations.

The two sides had different expectations about the details to be provided in requirements specification. CLIENT_15 expected the vendor to interpret, understand, seek clarifications, while V_THREE followed things literally. CLIENT_15's Project Manager attributed this to cultural difference, and admitted that an executive from another group at the company, which had used V_THREE before, had warned him about the need to provide detailed specifications.

A liaison person from V_THREE was at client site after the requirement analysis. To manage the project, e-mail was used regularly and throughout, with half-a-day turnaround due to time-zone differences. There were regular conference calls between the two sides. The frequency of these calls was high initially but it decreased to once or twice a week later.

A lack of structure was also evident in other areas. The participants' responsibilities were not delineated, and anybody could talk to anybody. FAX messages were not numbered, but they were followed up by e-mail messages seeking confirmation. This lack of structure caused some problems. For example, the vendor changed some of the personnel working on this project midway through the project without informing CLIENT_15. The new personnel were not as skilled and experienced, which generated some conflict. The client executives were also concerned about the problems with some of the software developed later in the project. However, overall, they expressed satisfaction with the project, and indicated that CLIENT_15 would continue outsourcing to V_THREE.

CLIENT_16 is another Fortune 500 company and one of the five largest software development firms in the U.S. The project involved the development of an executive information system monitoring the company's sales by a vendor with head-office in Colombia and a local office in the U.S. The company's senior management referred the vendor, V_SEVEN, as a "preferred vendor" to the user group, which eventually selected it after evaluating its previous executive information systems.

The requirement analysis took a month, and was based on V_SEVEN's previous executive information system, to which CLIENT_16 suggested changes based on its specific business needs. The software was developed in Bogota, Colombia. The Manager responsible for the system at CLIENT_16 communicated regularly with the vendor's local Project Manager through phone and e-mail. The vendor's Development Manager at Colombia visited the client twice, for a week on each occasion. In addition, the client's Manager talked to him weekly by phone during development.

The client executives believed that the vendor would include some additional features within the original fixed price. The Manager responsible for the project told me that "the bottom line was that we are their customers so whatever we wanted, they would add." This was partly due to the relationship being a highly beneficial one to V_SEVEN; it would be able to: (a) mention CLIENT_16 as a reference, and (b) have access to CLIENT_16's latest technologies. Possibly due to these factors motivating the vendor and the simple and non-critical nature of the project, the project was managed in an informal fashion, with no formal, impersonal governance mechanisms. CLIENT_16's Manager indicated that he "would be much more formal about the time when things were going to be delivered" in a more critical project, and if there was not a "special, strategic relationship" between the two organizations. The vendor was more formalized than the client, as illustrated by the following:

> Question: Did you have some kind of a form, or a document where you would make suggestions and FAX that or just a telephone call?
>
> Manager: I didn't. But all their communications to me were formal by FAX or by e-mail. They would send a copy to their analyst locally so that she

> would be in touch and would know what was going on, what our communications was with Colombia. So, if I called Colombia directly, their local person always knew what was going on but there was no formal document, no. … every time they would send me a version of the product, they would send me the version together with documentation that said this is what we fixed and this is how you install it. On their side, it was very professional, formal.

Although the project was considered successful by all the executives I met at CLIENT_16, as well as by V_SEVEN's CEO, some of the delays and problems encountered in the project (e.g., the volumes of actual data were much greater than what the vendor assumed, which was detected during system test and the vendor had to go back and recode and re-split all the tables into smaller tables) might have been prevented if the project had been more structured and formal.

CLIENT_17 is a large county in South East U.S., with more than 25,000 employees. It outsourced the development of a legislature tracking system to a vendor in another city in the U.S. A formal contract was prepared and the relationship between the two sides was excellent. However, the contract was based on the county's standard contract. CLIENT_17's IS manager was happy with the vendor, and reluctant to mention the contract clauses to the vendor executives, but wished the contract was more stringent and included specific penalty clauses.

The lack of structure was also evident in other areas. The project was divided into four phases, but the requirements and the specific sign-offs for each phase were not indicated. CLIENT_17's IS executives attributed this to their not being involved in the early stages of the project. Several "must have" requirements were identified after the system had been long under development. The IS group tried to manage these new requirements by treating them as additional project requirements for later phases. The project was coordinated through phone calls, and FAX and e-mail messages. All FAX messages were numbered. However, even in this aspect, the vendor seemed to be more formal. The project also benefited from a number of visits by the vendor personnel to the client site. These visits occurred mainly during requirement analysis. The later visits were not originally planned but based on requests by the client.

No formal mechanisms for interactions between the client and the vendor were prescribed, and anyone could talk to anyone from the other side. However, during the middle of the project, most communication with the vendor was through the Division Director (Development). His involvement was very high in phase 2 and early in phase 3, but it became more "need based" later in the project.

There was a feeling of "lack of control" at CLIENT_17, and its executives remained concerned about remote outsourcing. However, the project progressed rather smoothly and the client executives were satisfied with the system. The Development Director believed that the project succeeded because both parties were "committed to getting this done almost to no matter what it takes."

CLIENT_18 is among the ten largest food products firms in the U.S. The project involved the development of a $0.5 million executive information system, to be used on the laptops of over 400 field salespersons in the U.S. to track sales and account receivables. The project was based on a fixed-price contract with V_SEVEN, the Colombia-based vendor that developed the system for CLIENT_16.

In order to manage the system, CLIENT_18 hired a Spanish-speaking subcontractor as the Project Manager, and then left the project management almost entirely to him. It initially gave V_SEVEN a small contract to assess its ability. Both this initial contract and the later, larger, contract, were rather loose. CLIENT_18's Vice President (IS) attributed the loose contract to the company's approach of using a series of prototypes and the desire to give both sides considerable flexibility.

The vendor's Project Leader and a few other individuals visited CLIENT_18 for a few days to do the requirements analysis. Later, a few visited the client to install each new release of the software. The entire software development was done remotely. However, there were few structures and mechanisms, and the client had little control over the project. The lack of structures, along with the absence of a detailed contract led to some problems during development.

> Project Manager: The relationship with the vendor was occasionally tricky because we wouldn't know if a new request would be something brand new that wasn't originally thought of or if it was something that changed or modified a requirement that was already in the contract.

There was also a feeling that V_SEVEN may have behaved opportunistically by having some inexperienced programmers do the development. Moreover, the Project Manager (the sub-contractor) complained that "it is really hard for us to guess how many people they have dedicated to it." He also identified another opportunistic behavior, shirking of responsibilities for software testing, by the vendor:

> Initially there was insufficient testing of the software. It just never passed the initial test. So when I got it, I tested it and if it didn't work I couldn't pass it on, I couldn't give it to the users. We would send it back and that would happen a lot. … what we learned is they didn't test very well, and I found so many issues that had to be sent back, I think their programmers developed the sense of “lets program it and give it to him to test”. Because I'm gonna find it anyway, it may have been faster for them to just develop and send me codes to test, the problem with that was I would spend more and more of my time testing as opposed to finding requirements for installation.

The system was generally considered a success although some delays were encountered along the way, and some modifications had to be made later.

> Vice President (IS): From my position, it was very successful, it was fixed price so there was no budget overrun. We ran modestly late, we were a few weeks late on most of the major implementations but we have contingencies which mostly accommodated.

The CEO of V_SEVEN also mentioned one opportunistic behavior. This involved addition of new requirements to the project on the grounds of misunderstanding regarding the initial contract, despite recognizing that those requirements were not included in the original contract. However, this opportunistic behavior was not attributed to the client but to an intermediary between the client and the vendor (i.e., the sub-contractor who was the client's project manager). Interestingly, in its next outsourcing project, CLIENT_18 was using its own employee as the Project Manager.

Spiraling Effect of IS Outsourcing Contract Interpretations

Barbara L. Marcolin[1]

Haskayne School of Business, University of Calgary, Calgary, Alberta, T2N 1N4, CANADA, (P) 403-220-6075, (F) 403-282-0095, marcolin@ucalgary.ca

1 Introduction

Information Systems (IS) outsourcing is about contracting out technology services to a third-party but involves much more than the contractual definition of the arrangement. Legal perspectives on IS outsourcing imply that the contract is what matters. The negotiation process, contract clauses, and conflict resolution/contract amendment activities are of central concern under this view (Judenberg 1994; Menagh 1995; Yates 1994). Literature on Joint Ventures brings a new perspective to the discussion which suggests that a partnership potential exists when two parties are brought together. This potential, however, can only be realized if the focus is on relationships and the co-operative behaviours that build trust (Parke 1993). Otherwise, it is not a partnership; it's likely a market transaction.

Considering these two different perspectives, it is quite possible for both buyer/seller-type and strategic partnership-type arrangements to be successful within the IS outsourcing area, although each, by definition, would serve completely different business objectives. Strategic partnerships are predominantly about relationships, not contracts. Buyer/seller arrangements are predominantly about contracts, not relationships. Although each type must establish both relationships and contracts, which of these is the focus is what sets them apart. Effective IS outsourcing arrangements can be achieved, no matter the approach, if appropriate principles are adhered to at the forefront (McFarlan & Nolan 1995, Fitzgerald & Willcocks 1994) and reinforced through the spiraling effect of relationship interactions (Andersson & Pearson 1996, 1999).

This paper illustrates differences in IS outsourcing alliances through the tale of two case studies of complex IS outsourcing arrangements. Although the data are based on six cases and are representative only of a small spectrum of the types of IS outsourcing relationships, they do show how relationship characteristics

[1] Kerry L. McLellan has contributed significantly to this paper and his support is greatly appreciated.

develop in different ways. What emerges is not just how contracts are drawn up, but also how companies set business goals and interpret situations throughout the relationship, through posturing, developing co-ordination mechanisms, and resolving conflict (Fitzgerald & Willcocks 1994). Actions and words throughout this relationship have spiraling effects, upward or downward, to reinforce the tone of the arrangement.

Given that the different literatures suggest that both types of outsourcing relationships are effective within an IS context, the objectives of this paper are to:

1. Determine the different circumstances under which a strategic IS partnership or a buyer/seller IS relationship flourish, and
2. Determine the importance and role of IS contract interpretation.

Within the first question, several sub-questions are raised. For successful IS outsourcing relationships, to what extent are the following involved:

- Setting business objectives,
- Writing contracts, and
- Managing relationships, including posturing, interpretation, coordination and conflict resolution.

A significant contribution of this paper is in the illustration of the roles and impact of contractual interpretations, business planning, structuring of alliances and relationship management that produce a spiraling effect.

The paper opens with the tale of two contracts which establishes the framework within which contractual relationships are examined. It then proceeds with an outline of the conceptual foundation for this study, an explanation of the case research method and a presentation of the empirical results. Important differences and complexities are highlighted so as to advance theory, and, finally, an emerging view of possible IS outsourcing roles is offered.

2 Tale of Two Contracts

Consider two contracts which are for IS outsourcing services that involve similar statements but on the whole look and feel very different. The two companies involved are First Fidelity Bancorporation and Republic Bank. Both stated that they were pursuing strategic IS outsourcing partnerships, but each went about it in very different ways with very different outcomes.

2.1 First Fidelity Bancorporation

As a partnership, First Fidelity Bancorporation's objectives were aggressive growth, improved financial performance and integration of IS processes. As such, it recognized that a longer term partner was more suited to its needs, and hence, during contract negotiations, First Fidelity Bancorporation was more interested in how the vendor conducted itself than in the details of its plan, although capabilities had to be demonstrated. To that end, First Fidelity Bancorporation put the short-listed vendors vying for the contract in the same room and observed how they conducted themselves in terms of confrontation, cooperation, willingness to listen, meaningful promises and positive nurturing. The vendors' actions demonstrated to the bank what they would be like to work with in the future. Management was looking for vendors that could hold their own but who would not take a hard nosed, rigid or extremely confrontational approach. They would have to work confidently but cooperatively to transform the bank if they were chosen. Teamwork was the priority in that process. Behaviours were seen as an indication of this future capability. EDS was chosen as the vendor.

In general, the First Fidelity Bancorporation contract had the following:

- ***Win/win posturing*** when negotiating, setting goals, managing the relationship and resolving conflict,
- A **"looser" contractual definition**, although none can be classified as loose,
- A contractual stance that relied more on the **spirit of the contract** (contracts were rarely taken out of the drawer after they were signed),
- A contractual stance with a constant **give and take**,
- A contractual stance with an acute awareness of and adherence to **the partner's interests**,
- **Lack of awareness of the contract** within the relationship,
- **Ambitious business-wide growth strategies,**
- Active **senior executive** involvement, and
- Active, **high-level steering committee**.

Fewer details were written into the First Fidelity Bancorporation contract. More settlement mechanisms were outlined at the beginning, and **more senior bank people** were involved in the day-to-day management. A Senior Executive Vice-President and the Vendor Account Manager headed this coordination committee that met weekly. They knew at the outset that First Fidelity Bancorporation's uncertain environment, where both the business and the technology had to be changed, would make it impossible to identify the contractual factors and, hence, the members had to evolve toward a partnership to ensure that the **spirit of the**

arrangement was maintained in the process. They relied on a loose interpretation or gut-feel, not the contractual details. Trust in the outsourcing arrangement increased from 7.6 to 8.1 (out of 10) within the first six months, and was based on a broad range of activities such as conversion, integration, operations, telecommunications, systems development for the first 18 months, and growing transaction frequency.

First Fidelity Bancorporation's outcomes from its outsourcing relationship (or contractual stance) were oriented toward **win/win solutions**. A **high-level, technology coordination committee** was established to discuss issues and resolve disputes. If cost overruns occurred, as they frequently did, this group quickly identified which side was responsible as defined by the spirit of the contract - not always the same as an interpretations of the words - and one partner took responsibility. In the immediate future, the other side would find opportunities to reciprocate. For instance, once when the vendor agreed without hesitation to assume an $8 million developmental cost that was not explicitly written in the contract, the bank reciprocated in the next month by defining a business system requirement as new business for which the vendor could charge. The former development cost was in the spirit of the contract but the latter new business was a choice made by company management. Each side was keenly aware of the other's interests and worked to promote it. The vendor knew that even a hint of opportunistic behaviour would destroy this emerging trust and the account manager worked hard to avoid this possibility as well.

Attention to **actively and deliberately building trust** was necessary to achieve the **ambitious transformational and growth objectives** set by bank management. The bank wanted to consolidate IS data centers, completely integrate its systems and cut costs dramatically, all within an 18-month period. At the same time, senior management was cognizant of the fact that the bank had to pursue an aggressive growth strategy in order to compete within the emerging global banking industry. The ability to integrate a new acquisition’s systems within a month was necessary in this growth mode. Bank managers believed that they would only be successful if their partner was looking for better business approaches on their behalf. The bank was interpreting the contract loosely because it wanted to achieve these ambitious company-wide growth objectives and required the **vendor’s cooperation**. The bank had to trust that the vendor had a broad range of capabilities.

In summary, First Fidelity Bancorporation took a partnership stance encouraging EDS to help along the way. This spirit of cooperation was reflected in its initial structuring of the alliance, the ongoing relationship management orientation, the broadly focused business objectives and in its flexible approach to contract interpretation. Factors such as reciprocal arrangements, forbearance and opportunism avoidance fostered trust between the two parties and helped transform First Fidelity. The bank trusted EDS to determine much of its new technological business operations.

2.2 Republic Bank

Serving the New York area, Republic Bank had a proven track record. The bank was looking to tighten cost structures and was considering outsourcing which would also give it access to IS operational expertise lacking in the organization. Its chosen vendor was Systematics. Unlike First Fidelity Bancorporation, Republic's approach was cost centered and this was evident in its stance relating to the contractual relationship with its vendor.

In general, the Republic Bank contract had the following:

- a primary focus on **defining the contract** not the approach through which the relationship would be setup, managed and evaluated,
- a **"tighter"** contractual definition,
- a contractual stance that relied heavily on the **contractual details**
- a contractual stance that put the **company's benefit first**,
- a contractual stance that forced the **vendor to fend for its own interests**,
- a greater awareness of the **contract as a relationship tool**,
- goals that were more **limited in scope** and had **narrower impacts** on the organization,
- relationship management by **lower levels** in the hierarchy, and
- more **one-on-one coordination**.

Republic was more interested in the contract and **keenly aware of that contract** as a relationship management tool. The contract was its main concern in negotiations, for interpretations and in conflict resolution. Senior managers helped negotiate the contract and **focused on the details**. They had several years' experience with IS outsourcing contracts that produced, as a result, a well-honed outsourcing process. Daily relationship management was **turned over to lower-level system development managers**. Conflicts were resolved within the details of this contract since the spirit intended by the negotiators was not known to these lower-level contract managers and was not immediately evident in the written documents. **Trust** in the outsourcing relationship remained stable before and after outsourcing at a fairly high level of nine out of ten. Management believed the vendor could deliver the contract and that belief was maintained in the initial phases. Interactions with the vendor continually focused on contractual details.

Although many banks have a **competitive organizational climate**, Republic was particularly hard-nosed and confrontational. Business decisions were hotly debated through many levels of management and winning projects were usually promoted based on cost figures. This culture extended to its IS outsourcing contract.

Attention to the contract was paramount because cost was the driving factor in most of Republic's decisions. Republic was diversified into the stable businesses of precious metals and inventory factoring, with ownership residing with one family. Its fortunes were not tied to the banking industry, its business areas were fairly stable and its technological infrastructure was already standardized on Systematics' software. Management's chosen business focus rested with **cost control**. Business objectives were set to pursue this management focus and consequently lead to a predominantly buyer/seller outsourcing relationship, mostly because cost was held at the forefront. These objectives were not set on growth, but on increased efficiency, a narrower business objective.

In summary, Republic Bank undertook a buyer/seller approach to its outsourcing relationship, continually focusing the vendor on the contractual details at every step of the way, especially while structuring the alliance, managing the relationship and pursuing business objectives. But Republic also perceived successful outcomes, although it differed in its business objectives. The bank trusted Systematics to focus primarily on cost objectives.

These two stories illustrate very different initial approaches toward the business objectives and the contracts, very different work processes and very different outcomes. A review of past literature helps to pull guiding principles from these stories. Well-known IS outsourcing literatures are first discussed to provide a foundation for the introduction of the perspectives being offered here. These perspectives highlight the complex issues illustrated in the two stories.

3 Conceptual Foundation

Many different perspectives on outsourcing exist within the IS literature, including two of the most widely used, namely the legalistic and transaction perspectives. The legalistic perspective on IS outsourcing focuses on contractual clauses, negotiation processes, conflict resolution and amendments. What is implied in this perspective is that the contract is what ensures successful outcomes (Judenberg 1994; Menagh 1995; Raysman & Brown 1993; Caldwell 1994; Ruber 1995; Kay 1995). These authors purport that once the contract and negotiation processes are thoroughly defined, the company will have the necessary guidelines for interpreting daily actions and results, for settling disputes or for terminating the relationship. Most often the advice stemming from these views are lists of processes to follow or contractual clauses to interpret (Judenberg 1994). Even authors such as Lacity and Hirschheim (1993) who discuss outsourcing myths have referred to these two perspectives implicitly in their work. The safeguards and negotiation strategies they offer as guidelines to managers tend to reinforce the legalistic or contractual nature of outsourcing arrangements.

Another perspective on IS outsourcing focuses on the transaction or exchange of a service or product. Transaction Cost Theory has been applied to outsourcing problem and holds as its core the concepts of asset specificity, uncertainty difficulties, measurement difficulties and transaction frequency. Margins on transactions drive decisions within this perspective and many fear vendors will exhibit opportunistic behaviour to maximize their return at the company's expense (Aubert et al., 1996; Lacity & Hirschheim 1993). Often, it is suggested that "selective" activities should be outsourced to avoid the inevitable trouble when outsourcing a majority of IS services (Earl 1996; Lacity et al. 1995, 1996). Yet others compare outsourcing to organizational level cost structures and economic performance indicators (Loh & Venkatraman 1992), continuing the focus on transactions.

Many have also doubted whether vendors can be strategic IS outsourcing partners for any length of time (Nam et al. 1996; Lacity & Hirschheim 1993) and others certainly do not believe that vendors can take on core IS competencies or those IS tasks that are unique to a given situation - i.e., ones with high-asset specificity (Aubert et al. 1996; Williamson 1989). However, McLellan, Marcolin and Beamish (1998) have shown that companies can successfully outsource IS even when they consider it a core skill.

These contradictions in the different literatures raise questions as to when strategic IS partnerships make a difference. This concern is the focus of this paper.

In addition to these predominant views, there is evidence that relationships are key for integrating the legal and transaction perspectives under different business objectives. As far back as the pioneering steps taken by Kodak into large-scale IS outsourcing, there has been reference to relationships and strategic partnerships (Frangini 1991; Gurbaxani 1996). A strategic partnership is about the relationship that ties these elements together, so that trouble in the relationship is not necessarily inevitable.

3.1 Guiding Research Parameters

Relationships, and their potential for strategic influence, are the focus of this research. The Joint Venture literature provides a vehicle for illustrating these influences through a demonstration of behaviours, objectives and actions around a strategic outsourcing relationship. A second perspective that helps frame this study is the idea of contracts and relationships put forth by Fitzgerald and Willcocks (Fitzgerald & Willcocks 1994). Following is a brief review of this literature.

According to the Joint Venture literature, strategic partnerships can be thought of as alliances between two parties that are based on relationships which build trust through a demonstration of forbearance, reciprocity, and active avoidance of opportunism. These characteristics are captured in Figure 1, taken from Parkhe's

1993 review of this literature. In general, international joint ventures are equity-based formations between two or more partners that have partners and/or activities across national borders.

As Figure 1 depicts, the literature on Joint Ventures suggests that stable, well-performing partnerships must develop certain characteristics, bring together the right partners, align the partners' objectives and manage the controls and conflict. Central to this model are the Joint Venture characteristics of forbearance, reciprocity, opportunism avoidance and trust that are crucial to IS outsourcing relationships.The first characteristic to be developed in an alliance is *forbearance,* defined as forgoing certain behaviours that are not in the best interest of both parties. Then, there is *reciprocity* which is mutual aid or cooperation. A third characteristic is *opportunism avoidance*, which is avoiding any unscrupulous grasping of opportunities to one party's disadvantage. When these characteristics are demonstrated over time, *trust* is built into the alliance forming a partnership. Trust is defined as a reliance on the integrity and veracity of the partner's words or actions.Strategic partnerships are formed when these relationships are used for business objectives that influence strategic activities for the partners.

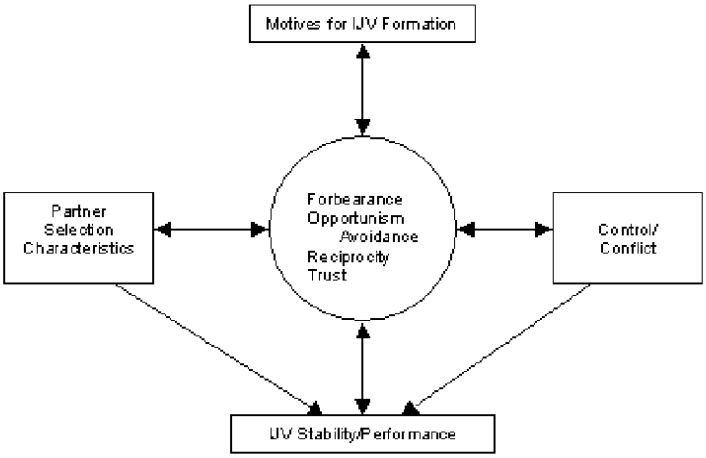


Figure 1: International Joint Venture Relationships (Parkhe, 1993)

Many firms state that they are involved in a strategic IS outsourcing partnership but few firms exhibit the strategic partnership behaviours described here. Any strategic partnership, and certainly any IS outsourcing partnership, is meaningless without these behaviours of forbearance, reciprocity, opportunism avoidance, and, ultimately, trust (Parkhe 1993).

To explore the potential of strategic IS outsourcing, Fitzgerald & Willcocks' model (1994), which supports the strategic perspective, is helpful. These authors also confirm the importance of the relationship for IS outsourcing, and suggest that both strategic partnerships and buyer/seller arrangements are possible. They conclude that the two dimensions of uncertainty and contractual definition play important roles in IS outsourcing contracts and relationships, as shown in Figure 2.

This model of contracts and relationships captures the essence of strategic partnerships as described in the Joint Venture literature. According to Fitzgerald and Willcocks (1994), ideal conditions for strategic partnerships exist when business and technical uncertainty are high and loose contracts are written. On the other hand, they suggest that ideal conditions for buyer/seller relationships exist when uncertainty is low and tight contracts can be written. Other combinations of uncertainty and contractual definition leave one party constrained and, thus, are not desirable. This work provides a useful start for understanding the best approaches to these types of IS outsourcing arrangements.

The remainder of this paper is an exploration of outsourcing relationships as defined by these two guiding literatures – Joint Venture and Contracts and Relationships. After a brief description of the research methods employed in this study, the paper draws insights from the tale of two contracts and presents additional empirical data from four other cases to illustrate the behaviours of strategic partnerships and buyer/seller relationships. This description is meant to provide deeper insights into contract interpretations and to help evaluate when the two types are most appropriate.

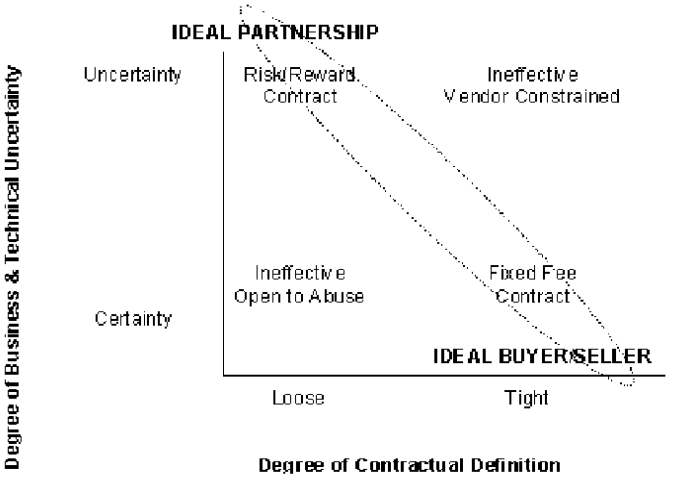


Figure 2: Fitgerald & Willcocks' Model. A Model of Contracts & Relationships

4 Case Research Methodology

For the purposes of this study, exploratory case studies were chosen since they are ideally suited for investigating complex relationships and contractual issues within IS outsourcing arrangements. And since the emphasis was on both these qualities - relationships and contracts - and little was known about these combined issues, the case study method was a natural choice.

Rich qualitative and quantitative data were needed to explore this relationship focus, which as Yin (1984), Eisenhardt (1989), and Parkhe (1993) describe is best handled through careful assessments of construct validity, internal validity, external validity and reliability, as shown in Appendix 1. Detailed interviewing, careful document gathering, and iterative analyses were undertaken to ensure reliable and valid conclusions were drawn. Procedures are now briefly described.

4.1 Sample Selection

Data were gathered from six banks, each having complex IS outsourcing arrangements with the potential to evolve the relationship between the vendor and the company into either a buyer/seller arrangement or a strategic partnership. Which relationship outcome would prevail depended on management actions rather than on the nature of the IS tasks outsourced.

A variety of IS tasks are represented. Over 75% of the IS services in each firm were outsourced to either Electronic Data Systems (EDS) or Systematics. Case selection was restricted to these two vendors to enable between and within analysis, and clients were chosen from each vendor to represent the diversity of the vendors' arrangements. This way, theoretical issues could be isolated and compared while controlling vendor effects. Generalizations are somewhat broader than they would be with a single vendor study, although the results may only apply to these two vendors.

Theoretical and literal case selections were undertaken, according to Yin's procedures, to explore emerging issues surrounding conflict resolution. Literal replications are when subsequent cases are collected that have the same contextual and theoretical conditions as the previous case or company. Theoretical replications are when subsequent cases are deliberately varied on some theoretical condition. Early in this study, conflict resolution was found to be of critical importance to the outcomes, and, hence, subsequent cases were chosen to vary this condition enabling stronger comparisons.

Twenty-three subjects remained for the analysis presented here. In the entire data set, there were six banks and two vendors with an average of four persons per contract. Four additional individuals were used to develop the content analysis guidelines as discussed below but their data are not included in the findings.

4.2 Procedures

Content analysis was conducted on the qualitative data gathered through interviews, perusal of company documents, review of the contracts and attendance at executive meetings. Large amounts of qualitative data existed for many topics, including the contracts, contract amendments, contract disputes, organizational impact, industry impact of the outsourcing deal, changes to IS service, IS importance, cost savings, trust, satisfaction with IS, and outsourcing relationship types and behaviours. Some other issues touched upon in the interviews have not been included here because they are reported elsewhere (McLellan, Beamish and Marcolin 1995) and are captured in the case studies included here. The data omitted relate to the business objectives and the motivations behind the decisions to outsource. Please refer to the case descriptions for an overview.

Four interviews were randomly chosen from the 27 people in the data set and their material used to develop the content analysis guide. All interview questions focused the people on the relationship, and the interviews lasted two hours, on average. Participants reviewed the transcribed notes to ensure accuracy. Systematic review of the data by two independent research assistants unaware of the research model achieved 97% agreement on the themes and topics captured in the interviews. The research assistants continually refined the themes, issues and facts through successive aggregation of the evidence. They looked for *a priori* theoretical issues and let emergent ideas develop. Classification was conducted on both contract and relationship details.

4.3 Measures

Measures of better outsourcing arrangements included IS satisfaction, conflict, IS importance, trust and organizational impact, as shown in Table 1, Table 2 and Table 3. Satisfaction with IS was measured before and after outsourcing on a 10-point Likert scale, and focused on how satisfied the person was with IS outcomes, from very satisfied (10) to very dissatisfied (1) (see Table 2). The frequency of contract disputes were compiled in terms of the actual number of disputes, and the types of contract disputes were compiled in a list. Examples of contract disputes are costing issues, contract interpretation, discussions on areas of responsibility, unanticipated modifications and performance expectations. The types of conflict resolution mechanisms used, the outcomes, and any changes to the pricing structures were also noted and later compared. Conflict was also assessed on a series of nine multi-part questions involving open-ended answers, and three- or four-point scales so as to provide a benchmark of comparison across the cases. A higher score represented more of that type of conflict or conflict resolution. Next, IS importance was measured as the perceived importance of IS for the company in the achievement of competitive advantage (10 = most important, see Table 1). Also, trust was measured as the level of trust between the firm and the vendor

measured on a 10-point scale with 10 equal to the highest level of trust (Table 3). Furthermore, organizational impact was measured as the extent to which IS outsourcing affected corporate structure and changes to the IS reporting structures, from no effect at all to affected it completely (Table 1). Descriptions of the size of these impacts were also gathered. Finally, influences on the relationship were discussed.

Table 1: IS Outsourcing Contract Data 1992

Issue	***Overall Mean***	***Uncertainty***		***Contractual Definition***		***Interpretation Flexibility***	
		Low	***High***	***Med***	***Tight***	***Low***	***High***
Contract Length (years)	9.2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Contract Amendments (number)	1.3	n.s.	n.s.	n.s.	n.s.	**1.8**	**1.0 E**
Contract Disputes							
Particular or General **M**	1.9	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Settlement Mechanism (2=Yes/1=No)	1.3	n.s.	n.s.	**1.8**	**0.88 K**	n.s.	n.s.
Frequency of Disputes (4=Constantly)	2.1	**1.78**	**2.75 A**	n.s.	n.s. **B1**	n.s.	n.s. **B2**
Bank Person Responsible (4=President, 3=Sr.VP, 2=Officer)	2.5	n.s.	n.s.	n.s.	n.s.	**1.85**	**2.90 C**
Vendor Person Responsible (14 = Acct Mgr, 13 = Op Mgr, 12 = Prog Mgr)	12.9	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Resolutions Satisfactory (3=highest)	2.4	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Relationship (2=Partner, 1=Buyer/Seller)	1.9	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.

Table 1: IS Outsourcing Contract Data 1992 (continued)

Issue	*Overall Mean*	*Uncertainty*		*Contractual Definition*		*Interpretation Flexibility*	
		Low	*High*	*Med*	*Tight*	*Low*	*High*
Organizational Impact							
Outsourcing Impacts Corporate Structure (4=Highest)	2.4	n.s.	n.s.	**2.9**	**1.5 D**	n.s.	n.s.
IS Maintains Reporting Structure **Q** (2=yes, 1=no)	1.5	n.s.	n.s.	n.s	n.s.	n.s.	n.s.
Industry Impact							
Competitors Outsourcing (2=yes,1=no,0=D.K.)	1.1	**.90**	**1.42 F**	n.s.	n.s.	n.s.	n.s
Did Competitor actions influence decision?	1.0	n.s.	n.s. **G**	n.s.	n.s.	n.s.	
Do Competitors use the same vendor?	1.7	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Does this bother you?	1.5	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Are there positive impacts from same vendor contracting?	1.3	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Do these impacts concern the bank?	1.2	**2.0**	**1.0 H**	**1.0**	**2.0 I**	n.s.	n.s.
Will Outsourcing restructure your industry? (3=yes, 2=maybe, 1=no, 0=D.K.)	1.2	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Has IS Service Suffered (3=Very Much) **J**	1.0	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
IS Importance for Competitive Advantage (10=Most Important) **L**	8.1	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Cost Savings R	20%	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.

Table 1: IS Outsourcing Contract Data 1992 (continued)

Issue	*Overall Mean*	*Uncertainty*		*Contractual Definition*		*Interpretation Flexibility*	
		Low	*High*	*Med*	*Tight*	*Low*	*High*
Overall Trust	5.9[1]	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
At signing N							
At interviews O	8.2[1]	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
(10=Trusting)							
	n.s.=non-significant Kruskal-Wallis T-test, otherwise p ≤.05 [1]=p≤ .002 and [2 & 3]=p≤.05 on a Wilcoxon Signed Rank test, n=23						

Table 2: Overall Satisfaction with Information Systems Before and After Outsourcing

IS Satisfaction	*Uncertainty*		*Contractual Definition*		*Interpretation Flexibility*		*Overall Mean*
(10=very satisfied)	*Low*	*High*	*Medium*	*Tight*	*Low*	*High*	
Before the contract	4.23	6.15	5.07	4.67	5.30[2]	4.43[3]	4.8[1]
	(.05)		(n.s.)		(.05)		
After the contract	7.58	7.30	7.70	7.27	7.90[2]	7.07[3]P	7.5[1]
	(n.s.)		(n.s.)		(.05)		

n.s.=non-significant Kruskal-Wallis T-test, otherwise p ≤.05
[1]=p≤ .002 and [2 & 3]=p≤.05 on a Wilcoxon Signed Rank test

Table 3: Trust and Satisfaction Measures for IS Services Before and After Outsourcing by Bank

Individual Bank	Trust at Signing (10=trusting)	Trust at Interviews (change)	Satisfaction Before Outsourcing (10=very sat.)	Satisfaction After Outsourcing (change)
Meritor	8.5	7.5 (-)	8.4	8.1 (-)
Republic	9.0	9.0 (0)	4.6	7.1 (+)
Gainer	5.4	9.5 (+)	2.9	8.5 (+)
First Fidelity Bancorporation	7.6	8.1 (+)	3.9	6.5 (+)
Brenton	7.3	8.0 (+)	3.6	7.0 (+)
Integra	3.8	7.5 (+)	5.8	7.7 (+)
Average*	**6.9**	**8.3 (+)**	**4.8**	**7.5 (+)**

*significance at p<=.002 for average changes

4.4 Analysis

Analysis within the case studies involved quantitative data compiled from the participants' qualitative data, and represents judgments made by the authors. Some quantitative data is summarized in Table 1 through Table 3. Non-parametric statistics were used to compare across and within the participants' answers for small sample sizes (n = 23). The first non-parametric test used was the Kruskal-Wallis independent t-test, which is appropriate when comparing between subjects answers, and the second was the Wilcoxon Signed Rank test, which is appropriate for comparing subject's own answers. Trust and satisfaction were evaluated with a Wilcoxon test, since these data were from two points in time, and all other evaluations were completed with a Kruskal-Wallis test. For simplicity, a .05 p-level was used to determine significance in all cases, but many tests were well below this level.

Qualitative data analysis involved creating descriptions to paint a picture and using quotes or themes to illustrate a strong influence. For instance, the difference between stated and actual partnership orientation was noted by comparing stated relationships (Likert scale response) with behaviours identified through the

analysis of interviews (actions taken, discussion tone, and issues discussed or not discussed). Descriptions or themes were drawn from repeated passes through the interview notes, highlighting topics discussed, explicit themes, implicit themes, and suggested conclusions. Two research assistants unaware of the study objectives achieved a 97% agreement rate. Comparisons across and between notes were used to confirm or deny a conclusion.

4.5 Case Descriptions

4.5.1 Meritor Bank

Located in the Philadelphia area, Meritor was in severe financial distress and had to drastically downsize to survive. Their financial position drove the decision to outsource 100% of the IS activities to EDS. Management's prime objective was to create a flexible and variable cost structure to facilitate the shrinking organization, and to gear itself for survival with as strong a technology capability as possible. The bank did not want to get entrenched into a position from which it could not recover.

4.5.2 First Fidelity Bancorporation

First Fidelity Bancorporation (FFB) was a medium sized U.S. bank which wanted to grow beyond its New Jersey and Pennsylvania boundaries. Streamlining costs, integrating systems, and restructuring the banking network in the restructuring U.S. banking environment were prime motivations for senior management's consideration of IS outsourcing. Senior management had radical growth plans for the bank in the customer-oriented marketplace which was emerging. The President and the Senior Executive Vice-president for Operations and Systems made the decision to outsource 75% of IS activities to EDS after extensive discussions with internal IS management and IS consultants. The motivations focused on accommodating the bank's financial, integrative and growth objectives. Several major IS activities were transferred to EDS, some permanently and some temporarily.

All transaction processing and network management were transferred permanently to EDS's care. Associated hardware, staff and procedures were taken over by the vendor. System integration of corporate-wide banking applications were undertaken by both the bank and the vendor. System development activities were temporarily transferred to the vendor for an initial two year term, after which it would revert to the bank's control. At the same time, several major IS activities were maintained under First Fidelity Bancorporation 's control. Major IS planning and some application development stayed within the bank. This arrangement was made because First Fidelity Bancorporation management was uncomfortable about completely relinquishing its organizational technology capability.

4.5.2 Republic Bank

In the New York area, Republic served commercial and conservative retail customers. The bank had an excellent track record of financial performance and was currently considering outsourcing to improve cost structures and to access IS operational expertise that was lacking within the organization. The outsourcing contract with Systematics saw 85% of the IS activities move over to the vendor. All activities except some very unique systems used to support industry specific applications (such as precious metals trading) were outsourced. This included operations, systems programming and some application development. Republic had previously spun off its IS group into an independent subsidiary and the president of this subsidiary had made the decision to seek a technology partner.

4.5.4 Brenton Bank

Brenton was a medium sized U.S. bank in the Iowa area. The bank was experiencing fairly good financial performance, but was at that point seeking streamlined costs, internal restructuring and closer links between business strategy and the IS department. These objectives stemmed from a desire to stay competitive as inter-state banking spread and larger competitors entered their markets. The outsourcing contract to Systematics saw 95% of the IS activities being taken over by the vendor. Except for a unique branch automation platform (kept primarily for internal political reasons), all IS activities were transferred to Systematics. This included transaction processing and systems development.

4.5.5 Gainer Bank

Serving the Indiana area, Gainer had grown into a medium sized bank. The current challenges facing the bank stemmed from problems related to acquiring the right IS personnel. Located in a small U.S. town, the firm had a difficult time attracting and retaining competent IS staff with the right skills. Senior corporate management's financial concerns related to improving IS management and personnel, while trying to get good quality, centrally supported systems. This decision was made by senior management, which was also interested in making its institution a more attractive and easily integrated acquisition target. In this effort, Gainers outsourced 100% of its IS activities to Systematics. Only a coordinating management team remained within the bank to integrate IS functions with the business activities.

4.5.6 Integra Bank

Integra Bank was a rapidly growing Pittsburgh bank. It had been twenty years since Integra began outsourcing IS activities to Systematics, but was at that point trying to put additional pressure on Systematics to make further improvements in

the quality of its IS products and services. The recent contract extension to outsource even more IS services saw 85% of the activities fall under the vendor's control, with only internal LANs for office automation and personal computer support remaining within the firm's control. This decision to extend the scope of the relationship was made because Integra's senior management believed they were going to have more input into Systematics product development and service levels.

5 Results

The results will be presented in three sections. First, lessons from the tale of two contracts are noted, and their characteristics are presented to provide examples of the extremes observed. This is followed by a discussion of when IS strategic partnerships are most pertinent. And finally, speculation about the possible ways outsourcing arrangements can be structured and managed is presented. This discussion is meant to spur thoughts of how to better manage both types – strategic or buyer/seller - of IS outsourcing arrangements.

5.1 Ideal IS Outsourcing Arrangements

Comparing themes emerging from the tale of two contracts, one can see a broad range of issues around similar behaviours and quite different outcomes, as seen in Table 4: Summary of Behaviours. The objective of this section is to establish if distinguishable behaviours exist in the ideal types of outsourcing arrangements.

First Fidelity Bancorporation’s behaviours (Table 4) encompass the ideal strategic partnership behaviours as described by Fitzgerald and Willcocks (1994) and as suggested in the model put forth by Parkhe (1993), where both sides win and every action is seen to build trust over time. Trust is built through a demonstration of give and take (reciprocity), awareness of the other partner and adherence to the contract intent (forbearance and opportunism avoidance). Senior management is actively involved in discussions and decisions, signaling a commitment to the relationship and building broad business benefits.

Table 4: Summary of Behaviours

Behaviour	FFB Strategic Partnership	Republic Buyer/Seller Arrangement
Posturing (during negotiations, goal setting, relationship management, conflict resolution)	Win/Win	Clarify and define the contract
Contractual definition	Looser	Tigher
Contractual stance	By the spirit of the contract	On details of the contract
	Give and take	Companies benefit first
	Keenly aware of partner's interests	Vendor fended for itself
Contract	Rarely taken out of the drawer	Central to relationship
Business goals	Business-wide growth objectives, ambitious	Limited scope, narrower impacts
Relationship management	Active senior management	Active lower levels
Coordination	High-level steering committee	One-on-one coordination

Republic's behaviours (Table 4) encompass the ideal buyer/seller arrangements as described by Fitzgerald and Willcocks (1994), where each partner fends for itself, the contract is the final word, and contractual details decide every move. Senior management might negotiate the original deal but lower levels manage the contract through highly focused exchanges driving down costs. Benefits to either side are accrued by how well they negotiate and deliver at the lowest possible cost, according to the narrowly and specifically defined goals.

As can be concluded from the above, the behaviours of reciprocity, forbearance and opportunism avoidance were present in these ideal cases and followed the

patterns suggested for strategic partners and buyer/seller relationships as seen in the summary of Table 4 (trust will be the focus of discussions below).

A perusal of the two ideal cases indicates that the data are not clearly aligned with one side or the other. Specifics and insights garnered from the other four cases are now added to our initial view to elucidate the points being made in this paper.

5.1.1 Mapping All Cases to Theory

Although Fitzgerald and Willcocks' model provided a good foundation upon which to frame the study overall, it was insufficient for explaining all the characteristics and outcomes of the six companies studied. Each case was assessed on the two dimensions of uncertainty and contractual definition, and then reviewed for expected character patterns against the theory. Results of this assessment suggest that different types of relationships overlapped in terms of characteristics and behaviour and contradicted the theory behind the original research model. This section offers some revisions and proposes a revised research model from the findings.

Assessment of business and technical uncertainty was based on a broad evaluation of the degree to which business and technical situations within the company could be defined precisely and with certainty. An uncertainty rating of low, medium or high was made across several business and technical situations for each of the companies. For instance, if the company was in a turbulent business environment facing a lot of competition, several new products, the introduction of new technologies, and/or difficulty in defining measures of IS activities, it would be described as representing high uncertainty. If the company was low on these same factors, it would represent low uncertainty.

The assessment of contractual definition was based on the contract's degree of detail within each clause, the number of clauses written into it, and its length. A rating of loose, medium or tight was made, based on whether there were few or many details and clauses. In the end, none of the contracts were classified as loose, leaving only those with a medium or tight level. A tight contract had more clauses, more details and fewer years. And just the opposite was true for a medium contract.

It should be noted here that five of the six banks stated that they had a strategic partnership (see Table 5). Only Meritor labeled its relationship as buyer/seller. Regardless of the stated relationships, however, only three actually exhibited behaviours to support the strategic partnership label (as described below). First Fidelity Bancorporation, Integra and Brenton maintained a partnership perspective through every fibre of their relationship. The remaining banks that used the partnership label, Republic Bank and Gainer Bank, often resorted to the contractual details to resolve problems without concern for reciprocal outcomes or for forgoing situations not of mutual interest. Their benchmark was the contract.

The reason why these two banks did not exhibit strategic partnership behaviours when it was their stated position is not known, but clearly the term does not apply well. As is seen throughout the analysis below, using the popular strategic partnership term to describe an IS outsourcing contract does not make it one. Consequently, banks were treated according to their exhibited behaviours and actions, not the labels touted in the interviews. Three are treated as partnerships, (First Fidelity Bancorporation, Integra and Brenton), and three are treated as buyer/seller arrangements (Meritor, Republic and Gainer).

Table 5: Partnership Types by Bank

Bank	**Partnership Statements** **2=Partner**	**Partnership Actions** **(Implied Partnership During Contract)**
Meritor	1	NO
Republic	2	NO
Gainer	2	NO
First Fidelity Bancorporation	2	YES
Brenton	2	YES
Integra	2	YES

A company's position within Figure 3 indicates the outcome of these uncertainty and contractual assessments. As seen in the previous section, two companies, First Fidelity Bancorporation and Republic, fit these ideals very well and fall on the diagonals as suggested by the theory. The four other companies - Meritor, Gainer, Integra and Brenton – did not fit well, providing evidence against the research model and the theory. For instance, a company that had a confirmed buyer/seller relationship, namely Meritor, was in the ideal strategic partnership location, and two strategic partners, namely Integra and Brenton, were in the ideal buyer/seller position. Contradictions to the theory necessitated some changes.

Re-analysis of the data was hence undertaken and suggested that a third dimension be added to the model pertaining to the flexibility of contractual interpretations. This reinvestigation and analysis of the interview notes showed that the firms were not interpreting their contracts in the same way. As managers in First Fidelity Bancorporation explained, the banking environment necessitated a somewhat detailed written contract to address many of the legal and security requirements, hence none were really loose. The lawyers, in essence, forced a certain level of contractual detail at the onset of the relationship. Afterwards, management had the discretion to freely interpret that contract in many ways as the relationship evolved.

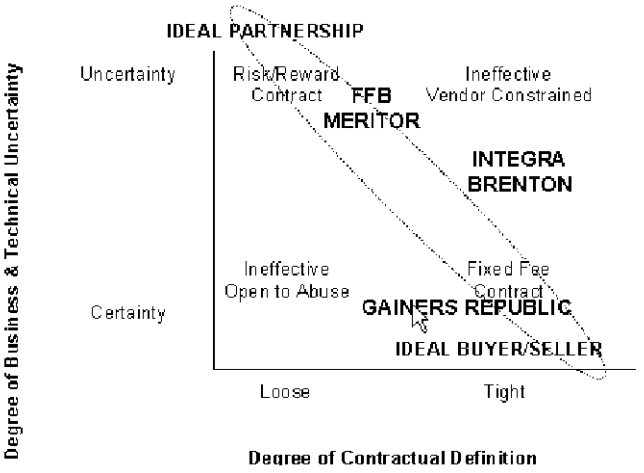


Figure 3: Bank Mapping

Regardless of what was written down, it was what management did with these contracts during the relationship that differed. On the one hand, Integra and Brenton had fairly detailed contracts but downplayed these specifics, relying more on relationship management and loose interpretation of the details. They wrote long contracts but chose to leave it in a drawer or to interpret it broadly. On the other hand, Meritor and Gainer had less detailed contracts but chose to enforce the specifics throughout the relationship. This position is perhaps tenuous but works well if the chips fall in the company's favor. If, however, the outcomes go against them, it puts the company in a precarious situation. An inflexible attitude creates an atmosphere that naturally forces the vendor into a similar stance. If the company continues to enforce these standards for long, this behaviour pattern is noted by the vendor, and then reciprocated with the same rigid interpretation on its part.

The two existing ideas of contractual definition and interpretive flexibility do not overlap directly. Contractual definition plays an important role in the contracting phase of an outsourcing arrangement but emphasizes the negotiation process. Flexibility of the interpretation is more telling during the latter phases of the outsourcing relationship, such as during initiation, management, and renewal or replacement of the contract.

The conceptual difference between the two concepts forced a change to the research model in order to provide more understandable results. A new dimension, called interpretive flexibility, was added to Fitzgerald and Willcocks' model, resulting in the cube shown in Figure 4. Interpretative flexibility refers to the degree to which the partners were flexible in the interpretation of the details and

spirit of the contract. An assessment of high interpretive flexibility was made when a company relied upon few contractual details and was extremely flexible in its interpretations, trying to accommodate both parties. An assessment of low interpretive flexibility was when a company relied upon many contractual details and held fast to these details.

As seen in Figure 4, when companies were placed within the revised model, based on their conditions of high or low uncertainty, medium or tight contractual definition, and high or low interpretive flexibility, the results were easier to understand. These results are presented in the next section.

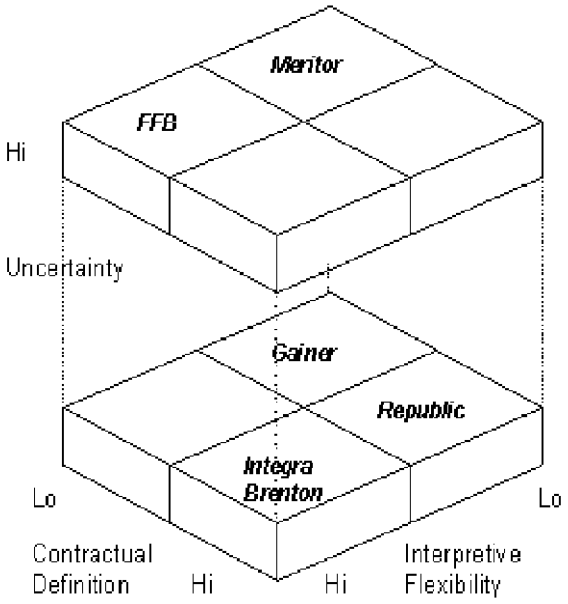


Figure 4: Revised Research Model

5.2 Types Are Better When?

Observation of different behaviour patterns leads to speculations whether these patterns make a difference, and if so, when each is better suited. This section provides a discussion on performance data as presented in Table 1, Table 2 and Table 3. It will be shown that both types of contractual relationships – strategic and buyer/seller - performed well, that each was pursuing different business objectives that lead to different approaches to the contract and relationship. By

teasing out these themes from the data, the results paint a picture of when each type of arrangement is most appropriate.

Tables 1,2 and 3 contain data for satisfaction, IS importance, conflicts, trust and organizational impacts. These factors showed almost no differences for strategic partners and buyer/sellers. Strategic partnerships were no better on satisfaction scales than buyer/sellers. In fact buyer/sellers had achieved greater satisfaction with their relationships through more control and more certainty in their relationship outcomes (see P in Table 2). Strategic partnerships were no better on IS importance, both had devised important roles for IS (see J and L in Table 1). Strategic partnerships were no better at avoiding conflict. Each had an equal frequency of disputes (see B2) which were of a similar nature (see M), some about particular details and others about general problems. However, disputes seemed to stem from more uncertain business or technical environments (see A), which is not surprising. Strategic partnerships were no better on cost (see R); an impressive 20% cost improvement was achieved on average across all types of arrangements. And finally, at a glance, strategic partnerships appeared no better at developing trust, as all companies seemed to build trust over the initial phase of the relationships (see N & O).

Consequently, both types of relationships seem to be successful as can be concluded from the relatively similar and relatively high performance measures for each type. By these measures, both buyer/sellers and strategic partners were successful, however, it remains to be seen what the role of each relationship type is and what each is contributing.

Further analysis was undertaken to explore the contribution of these two relationships since no a priori propositions were held. A complex set of connections became evident as is seen in the data now described.

First, differences were observed in the ***business objectives*** being pursued. Buyer/sellers were pursuing more narrowly focused business objectives, such as cost savings in only their IT department (which in itself is a significant undertaking) than were strategic partners. Strategic partners were pursuing broadly-defined, organization-wide business objectives, including cost, process and other changes. For example, First Fidelity Bancorporation, the strategic partner example, had broad-based, ambitious goals to transform the organization, and Republic, the buyer/seller example, had narrowly focused goals to contain costs. All types changed their IS reporting structures to the same degree (see Q in Table 1) but strategic partners undertook more ambitious business plans.

Second, differences were observed in ***how conflicts were resolved***. Strategic partners were consciously orienting their on-going interactions to build positively on the relationship, whereas buyer/sellers held the future of the relationship as an afterthought. If it worked out, it was a bonus but buyer/sellers were focused elsewhere, usually on cost. As has already been shown, banks clearly exhibited different behaviours in the conduct of their relationships. The behaviours of

reciprocity, forbearance, and opportunism avoidance were clearly seen in the conflict negotiations for strategic partners (but not for buyer/sellers) which reinforced the positive atmosphere. A comment from a First Fidelity Bancorporation Senior Executive Vice President illustrates an appreciation for this give and take: "…to EDS's credit they have lived up to the promises rather than the letter of the agreement" (Q4.4, page 58).

An insight into how companies approached conflict resolution was gained by studying the data in Table 1 which was derived from the interview notes and from other comments obtained during the interviews. Conflict resolution related only to contractual details in one way: there were more settlement mechanisms in the shorter contracts (see K). The greater number of settlement mechanisms for those companies who wrote down less suggests that they either couldn't or didn't want to define the details, and instead, chose to protect themselves with more processes for settling disputes (i.e., settlement mechanisms). Further evidence of the lack of an influence of the contractual definition is found in the large number of non-significant results within that column of Table 1.

The other significant factors surrounding what was written down were related mostly to the urgency of the business conditions surrounding the company (see D and I). First Fidelity Bancorporation and Meritor wrote down less (Medium contractual definition), mostly because they were facing intense business pressures (see the case descriptions). However, First Fidelity Bancorporation's situation was more positive, whereas Meritor's situation was developing more negatively. It is not until you consider the reactions of both banks that the reason for these different outcomes becomes clear. First Fidelity Bancorporation seemed to develop positive outcomes even though it was under severe time pressures. On the other hand, Meritor had reduced its staff significantly, converted its IT costs from a fixed to a variable cost, and was looking just to survive in the marketplace for the time being. Both banks' actions were having big impacts on their organizations (See D), one positive and one negative, but each was forced to be less worried about the consequences within its industry because of the urgency of its situation (see I). Strategic partnerships differed on how the conflicts were resolved, but this was not apparent by studying the contracts.

Finally, a third difference that seemed to distinguish strategic partners was the ***commitment to day-to-day relationship management by more senior people*** (see C in Table 1). This reinforces the seriousness and priority placed on these outsourcing contracts within the strategic partnerships. Such a stance was observed in the discussions with the companies Several senior executives reinforced senior management's commitment with comments such as the following:

- Senior Vice President, Brenton Bank, pP. 145, q 4.4: "…disputes would escalate beyond the local vendor account manager. In some cases, the result was [the owner] calling [the senior vendor contact]."

- Account Manager, Integra Bank, p. 257, q 4.4: “I try to deal with the bank’s senior vice president’s direct reports. If necessary, I talk to [the senior vice president] but I view [him] as a last resort arbiter.”
- President, Integra Bank, p. 271, q 4.4: “If there is a disagreement, I pick up the phone. I know them all well…”

On the whole, these differences in business objectives, conflict resolution and relationship management produced a compounding or spiraling effect that eventually lead to the two types of arrangements observed earlier. When a certain behaviour was exhibited more often, good or bad, parties responded to that action with a similar and often greater reaction. As the behaviour continued, the momentum built up, spiraling toward growing trust or mistrust.

Trust turned out to be a more complex issue than was captured in the numerical data. As shown in Table 3, those with a strategic partnership were systematically building trust in a broad sense throughout the relationship. Overall, there was a significant rise in the level of trust from the signing of the contract (5.925 on average) to the interviews (8.23 on average, Wilcoxon Signed Rank, $p<=.002$, Table 1).

The comments from the interviews reflected this ability to evolve or “spiral” the relationship upward toward a trusting partnership. Spiraling is a systematic pattern of behaviours that build upon each other and have been referred to as spiraling effect (Andersson & Pearson 1996, 1999) or polarizing effect (Moritz, Johnson & Schmittlein 1993). Those with more of a buyer/seller relationship were not building trust in this systematic way. In fact, Meritor’s trust was dropping. Other tell tale signs throughout their interview notes suggested that the relationship was spiraling downward towards a more confrontational situation, although the stated numbers still remained high (see Table 3). These signs included severe frustration build-up, increasing stress in the interactions, and inflexible stances emerging.

Differences between these types of relationships were systematically exposed in all phases of the interactions, from how companies approached contract negotiations to what coordination mechanisms were used, which business objectives were pursued, how conflicts were resolved, and how contractual details were interpreted. For instance, strategic partners systematically looked to build the relationship, while buyer/sellers looked to maximize their position with impacts on the relationship being inconsequential.

In all, strategic partnerships were most appropriate under the following conditions: uncertain environments where few contractual details could be written down due to uncertainty, ambitious company-wide business objectives being pursued and when relationship building stances, such as posturing, coordination, interpretation, forbearance, opportunism avoidance, reciprocity and trust, were present.

In all, buyer/sellers were well suited when there were more certain environments, details available for the contract, narrower business objectives (perhaps a focus on

cost) and the contract was the focus of the relationship (where interpretation, posturing and coordination all revolve around the contract).

Through the tale of First Fidelity Bancorporation and Republic Bank, the theoretical issues that emerged were more complex and interrelated than was suggested by the numbers. A combination of qualitative and quantitative data were required to differentiate between these two relationship types, and different trusting behaviours emerged from different approaches to contractual interpretation. Understanding these complex relationships and how they can be used requires closer attention to the richness of the situation. A discussion of how to achieve this richness is now provided through speculation around the three dimensions of the research model. Anecdotes from the companies are used to clarify points.

5.3 Discussion of Possible IS Outsourcing Arrangements

A company can successfully manage an outsourcing relationship in any situation, no matter how uncertain its environment, as long as it chooses the right combination of business objectives, contractual stances and relationship management. Figure 5 presents eight positions, which are speculations of these possibilities. In this section, the different positions are described and possibilities related to them are presented.

The ***untenuous position*** is in the top-right-back location, which represents uncertain environments and tight contractual definition and interpretation, and may be impossible to occupy. It is nonsensical to write a detailed contract for an uncertain situation and then interpret those details strictly. Whether it is possible or not, it certainly is a position that is not recommended.

Tight contracts are ideal in the bottom-right-back location where Buyer/seller arrangements fit in because of their detailed contractual definition and interpretation strictness. Here, conditions are not changing, business objectives are more likely to be narrowly set, and consequently specifications are likely easier to determine and maintain. Low asset specificity, where IS transaction activities are fairly common across companies, usually exist in these scenarios. Transaction cost theory (Aubert et al. 1996) would suggest this is an ideal combination for a transaction-oriented outsourcing arrangement. Contract management would determine success, since there is less room to maneuver on these other elements. A tightly negotiated, well-managed, cost-focused contract would be important. Since this is the hallmark of a buyer/seller arrangement, it is its ideal position.

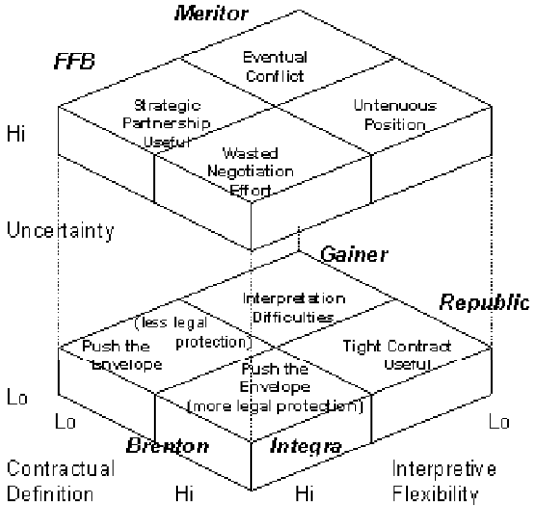


Figure 5: Possible IS Outsourcing Relationships

Eventual conflict is represented by the top-left-back position. Occupying this position is possible either for a short time or through excessive relationship management and contract re-negotiation processes. This position represents an uncertain environment with a strictly adhered to contract where fewer details were written down. Too many differences would surface here. If the details were absolutely correct in the original contract, then there is a chance that this contract would continue to be successful, as long as the conditions, which would change given the uncertain nature of its environment, move only in accordance with the prescribed details. This is a rare possibility. Meritor was in this position and warrants special mention because it was re-examining its fundamental business practices so as to survive in its marketplace. It had severe financial problems and many regulatory oversights that it was legislated to rectify. The outsourcing contract was in response to these pressures and management clearly wanted a buyer/seller relationship for moving the in-house costs to variable costs so as to cope with the current situation. At the end of the case interviews, Meritor's relationship was showing signs of stress and looked to be on a collision course with disaster. Strict interpretation of the contract was threatening the vendor's profitability. Meritor was becoming inflexible on recent conflicts and increasingly hard-nosed on interpretations. The vendor was forced to respond with similar actions, causing a downward spiraling effect on the relationship. Profitability, under these conditions, would be hard to maintain.

Interpretation difficulties exist in the bottom-left-back position. These interpretation differences would leave the company constrained. Gainer was in

this position. It had a fairly successful outsourcing relationship, with trust and satisfaction increasing dramatically, but saw its organizational boundaries change dramatically when it was acquired. Much effort was expended to reorient the relationship. Different interpretations of these contracts caused much turmoil in the process.

The ***ideal partnership arrangement*** is in the top-left-front position, as occupied by First Fidelity Bancorporation. Here, conditions are extremely uncertain on all business and technological fronts, and the partners are "agreeing to agree" throughout their relationship with few details written down or articulated, since those details would be impossible to define precisely in such a turbulent environment. This approach produced an upward spiraling effect to strengthen the relationship. Interestingly, this firm would be classified by Transaction Cost theorists as having high-asset specificity with its many unique assets that are specific to its situation. Many would not recommend outsourcing under these conditions (Aubert, et al. 1996; McFarlan and Nolan 1995). Yet this firm did so quite successfully, contrary to expectations. In the First Fidelity Bancorporation managers' eyes, relationship management mechanisms made it possible.

Firms wishing to ***push the envelope*** did so in more stable environments by interpreting their contracts loosely. Integra and Brenton represent these positions which are in the bottom-right-front and bottom-left-front corners respectively. These firms could sway either way but chose the strategic partnership route because they wanted to stretch the possibilities. They felt that strategic partnerships were a way to lead in their markets, anticipating change. They were there by choice, not necessity. The level of legal protection afforded the companies was the only distinguishing factor between the right and left positions. Those on the right felt the need for detailed contracts upon which the firm could fall if necessary, although management hoped that would never occur and managed the relationship to avoid that outcome.

Wasted negotiation effort is represented in the top-right-front corner. A firm here would negotiate a detailed contract and interpret it strictly but the uncertain conditions would likely change the important factors. Investing more in the relationship and writing down less would probably be a better use of time in such cases.

In sum, ideal combinations for outsourcing relationships depend upon the business and technical uncertainty, and the degree of contractual detail needed within organizations but are also influenced by business growth objectives, how contracts are interpreted and how relationships are managed.

When management wrestles with these situations and choices, it can determine its position within the proposed research model. Some are untenable, others require intensive effort, focus or luck, and yet others are ideally suited to achieve certain business objectives. Some companies find themselves in a position by choice and

others by necessity, but all must manage these forces to their advantage. Many successful combinations are possible.

6 Summary

Two types of outsourcing relationships were profiled here - the strategic partnership and the buyer/seller arrangement. Their behaviours differed significantly and the situations to which each was ideally suited depended primarily upon the business objectives and the degree of contract interpretation flexibility chosen by management. Relationship management actions, which include posturing, coordination mechanisms and conflict resolution, then reinforced or spiraled the relationship toward its eventual outcome. Table 6 summarizes these complex and interrelated issues providing guidelines to management. In essence, management must choose its path through these actions and behaviours.

Table 6: Research Findings Summary

Number	**Align Issues of:**
1	Business Objectives
2	Business Environment
3	Contractual Details
4	Interpretive Flexibility
5	Relationship Management (including posturing, coordination mechanisms and conflict resolution)
6	Relationship Characteristics (trust built from forbearance, reciprocity and opportunism avoidance)
7	Spiraling effect from influence of 1 through 6

Strategic partnerships are ideally suited for an unknown journey. That could be either in an uncertain environment (where few details are known so cannot be written down, and the ensuing path is nowhere in sight at the beginning), or in a more stable environment where management wants to push the envelope, shake up its environment and pursue more ambitious business-wide improvements and changes. Building trust through every action and behaviour requires reciprocal solutions, forgoing certain pursuits and never taking advantage of the partner. These principles should be espoused through every aspect of the relationship. Partners can achieve this and profit along the way. Contrary to what past literatures have suggested, this work found that a high-level of asset specificity or

unique IS activities is not always a deterrent for outsourcing IS activities, and if formed properly, a partnership can even contain strategic goals. Forming partnerships requires the behaviours and orientations discussed here.

Buyer/sellers are ideally suited to a pursuit of efficiency as the primary focus, where cost control is paramount. These firms usually require predictability in the performance, and focus on cost and the role of IS. They get it. This stance ensures that more definable measures and benchmarks are available to the company managers for assessing the outsourcing vendor's success. However, just to be clear, this work also suggests that companies can also be successful without these detailed measures of IS. Again, it may be noted that if a broader range of objectives were pursued, then a strategic partnership is likely the best way to go. Contractual arguments can lead to a downward spiraling effect when defending contractual positions.

We've seen through the demonstrated outsourcing behaviours that contract interpretation makes a difference in the choices and outcomes, with each new influence building upon the next, spiraling toward one ideal or the other. Buyer/sellers can be successful and so can strategic partnerships. However, hybrid arrangements often require more effort to sustain longer-term success. The spiraling effects of behaviours and actions can push a firm toward either of the ideals. Regardless, just using the term strategic partner does not assure a firm of achieving this stance in its outsourcing relationships.

References

Andersson, L.M., and Pearson, C.M. "Viloence, Aggression and Coercive Action," *Personnel Psychology*, (49:2), 1996, pp. 499-?

Andersson, L.M., and Pearson, C.M. "Tit for tat? The spiralling effect of incivility in the workplace". *Academy of Management Review*, (24:3), 1999, pp. 452-471.

Aubert, B. A., Rivard, S., and Patry, M. "A transaction cost approach to outsourcing behaviour: Some empirical evidence," *Information & Management*, (30), 1996, pp. 51-64.

Caldwell, B. "Outsourcing Special Council," *Informationweek*, October 31, 1994. pp. 40-48.

Earl, M.J. "The risks of outsourcing IT," *Sloan Management Review*, Spring 1996, pp. 26-32.

Eisenhardt, K.M. "Building Theories from Case Study Research," *Academy of Management Review*, (14:4), 1989, pp. 532-550.

Fitzgerald, D. and Willcocks, L. “Outsourcing Information Technology: Contracts and the Client/Vendor Relationship.” *Oxford Institute of Information Management*. 1994 pp. 1-20.

Frangini, M. “Outsourcing at Kodak: Data Centre Moves South,” *Computing Canada*, (17:8), April 11, 1991, pp. 1-2.

Gurbaxani, V. “The new world of information technology outsourcing,” *Communications of the ACM*. (39), 1996, pp. 45-46.

Lacity, M., and Hirschheim, R. “The information systems outsourcing bandwagon,” *Sloan Management Review*, (35), 1993, pp. 73-86.

Lacity, M., Willcocks, L., and Feeny, D. “IT outsourcing: Maximize flexibility and control,” *Harvard Business Review*, May-June, 1995, pp. 84-93.

Lacity, M., Willcocks, L., and Feeny, D. “The value of selective IT sourcing,” *Sloan Management Review*, Spring, 1996, pp. 13-25.

Judenberg, J. “Applications maintenance outsourcing. An alternative to total outsourcing,” *Information Systems Management,* Fall, 1994, pp. 34-38.

Kay, W. R. “Outsourcing. How to contract with third party vendors,” *ABA Bank Compliance*, (16:4), Spring, 1995, pp. 5-10.

Loh, L. and Venkatraman, N. “Determinants of information technology outsourcing: A cross-sectional analysis,” *Journal of Management Information Systems*, (9:1), 1992, pp. 7-24.

McFarlan, F.W. and Nolan, R.L. “How to manage an IT outsourcing alliance,” *Sloan Management Review*, Winter, 1995, pp. 9-23.

McLellan, K.L., Marcolin, B.L., and Beamish, P. “Financial and strategic motivations behind IS outsourcing,” *Journal of Information Technology*, (10), December, 1995, pp. 299-321.

Menagh, M. “Driving a hard bargain,” *Computerworld*, August 7, 1995, pp. 69,73, 76.

Morwitz, V.G., Johnson, E. and Schmittlein, D. “Does measuring intent change behaviour?”, *Journal of Consumer Research*, (20:1), 1993, pp. 46-61.

Nam, K., Rajagopalan, S., Rao, H.R., and Chaudhury, A. “A two level investigation of information systems outsourcing,” *Communications of the ACM*, (39:7), 1996, pp. 36-43.

Parkhe, A. “Messy research, methodological predispositions, and theory development in international joint ventures,” *Academy of Management Review*, (18:2), 1993, pp. 227-268.

Raysman, R. and Brown, P. “Outsourcing agreements,” *New York Law*, (Tuesday), November 9, 1993, pp. 3,6,7.

Ruber, P. “Drive a hard bargain with network outsourcers,” *Datamation*, November 15, 1995, pp. 61-64.

Williamson, O.E. "Transaction costs economics," *Handbook of Industrial Organization*. R. Shmalensee and R.D. Willig, (1), 1989, pp. 136-178.

Yates, J. "Contracts for outsourcing information technology," *Computer Law & Practice.* (10:5), 1994, pp. 142-146.

Yin, R.K. "Case Study Research: Design and Methods," *Sage Publications*, 1984, and revised edition 1989, Beverly Hills, CA.

Appendix 1: Case Study Rigour

Quality Issue	**Specific Techniques used in this study:**
Construct Validity	
Techniques should build construct validity through data triangulation, a chain of evidence, and key informants reviews.	During data collection, open-ended interviews were conducted with top management, officials and board members, executive meetings were attended, and archival records were reviewed. Explicit links were established among the questions asked, and then conclusions drawn. Composition data were reviewed by both partners.
Internal validity	
Techniques should build internal validity through pattern matching, explanation building and temporally sequencing events with established rationales behind the issues (the what and the why).	During data analysis, systematically matched patterns obtained in the initial case study with literal replications and with theoretical replications. Linked data to emergent theory, while ruling out alternative explanations and rival hypotheses. Used simple time series, complex time series, chronologies and an array events on a time axis. Causal events were determined (ruling out compelling rival causal sequences), thus ensuring that the logic behind the basic sequence of a cause and its effect could not temporally inverted.

External Validity	
Techniques should build external validity through sampling based on theoretical issues, replication logic and a comparison to the literature, all exposing theoretically useful categories	During research design, systematically matched patterns obtained in initial case study with literal replications and with theoretical replication. Replication across cases was provided by analytic (not Statistical) generalizations through induction. During data analysis, uncovered commonalities and conflicts, then pushed to generalize across cases.
Reliability	
Techniques should build reliability by establishing a formal record of the data and by using a consistent data collection protocol.	During data collection, formally assembled qualitative and quantitative evidentiary materials. Thorough and systematic documentation was used to enhance an external reviewer's confidence.
Procedures suggested by Yin (1984), Eisenhardt (1989) and Parkhe (1993a)	

Part IV:

Experiences and Outcome of IS Outsourcing

The Normative Value of Transaction Cost Economics: What Managers Have Learned About TCE Principles in the IT Context

Laura Poppo

Virginia Tech, Pamplin 2100 (0233), Blacksburg, VA 24061, 540-231-4553, lpoppo@vt.edu

Mary C. Lacity

University of Missouri-St.Louis, College of Business, 8001 Natural Bridge Road, St. Louis, MO 63121-4499, 314-516-6127, Mary.Lacity@umsl.edu

1 Introduction

Consider the following stories regarding the performance of outsourced of IT services (Lacity & Willcocks , 2001):

> A US Food company paid twice the original contract price due to excess fees triggered by undocumented requirements. In hindsight, participants believe the wrong activity was outsourced. They perhaps should have bought-in supplier expertise to work on an in-house project development team, rather than contract management and delivery of the system to a third party.
>
> A United Kingdom public sector body (PBS) signed a fixed-fee for service, ten-year, £1 billion contract for most of PSB1's product and services. In 1994, the IT Director referred to the supplier as a "strategic partner". By 1995, excess fees included £100,000 for unexpected software license transfer fees, an additional £5 million a year to cover inaccuracies in the original tender documents, and an additional £15 million a year for hardware maintenance. Furthermore, PSB could not meet some of the contractual terms, such as specifying requirements for 48 skill types 13 months in advance.

The stories suggests the outsourcing firm incurred huge levels of hidden or unanticipated costs in the outsourcing IT activities, had a poor understanding of the work-to-be-done, and chose an inadequate form of governance. If asked about the success of outsourcing, the customers acknowledge disappointment.

These stories are inconsistent with the optimal governance, and thus performance, of exchanges, as outlined by Transaction Cost Economics (TCE). Interestingly, in most empirical contexts, the basic propositions of TCE are widely supported leading Williamson (1999:1092) to claim it "is an empirical success story" and Joskow (1991: 81) to acknowledge "this empirical work is in much better shape than much of the empirical work in industrial organization generally." TCE affirms that as assets become increasingly specialized, firms vertically integrate to avoid the transaction costs associated with market governance (see Shelanski & Klein, 1995 for a review of the literature). For exchanges characterized by low or mixed levels of asset specificity, market exchanges, supported by classical and/or neo-classical contracts, efficiently coordinate exchange.

The IT context presents several challenges when crafting optimal market arrangements that are not found in many technologies (Lacity & Willcocks, 1996). First, information technology evolves rapidly, and depreciates faster, making lock-in arrangements potentially disastrous. Second IT economics changes rapidly and unpredictably. For example, while a 10% discount today may appeal to outsourcer companies, that same price may be 50% above market value next year. Third, high switching costs from one supplier to another-or even bringing the IT activity back in-house-creates power asymmetries in favor of suppliers. Finally, because of their relative inexperience in negotiating deals, managers who were outsourcing IT were at a significant disadvantage when negotiating contracts with suppliers. In this paper, we show how managers have learned to mediate hazards idiosyncratic to IT by better outsourcing choices, better contracts, and better relationship management.

Specifically, we examine whether TCE principles apply to the outsourcing of IT. We first review the TCE framework, and advance several theoretical challenges to this framework from strategists, namely that social relationship and supporting cooperative norms, can constitute an effective governance device. Next, we review two sets of studies that have examined the governance of IT (Poppo & Zenger, 1998; Poppo & Zenger, 2001, Poppo, Zhou, & Zenger, 2001; Lacity and Willcocks 1996, 2001). These two studies employ very different methodologies: Lacity and Willcocks focus on interviews and induction; where as Poppo and Zenger use surveys and econometric models. Yet, their findings are consistent and complementary. Major lessons based on the findings of the two research studies include:

1. TCE logic is not intuitive, and managers learned through their mistakes in the 1980's how to craft more effective contracts in the mid 1990's;
2. Managers realize higher performance when they apply the TCE principle to not outsource the most specialized activities;
3. Managers realized higher satisfaction when they apply the TCE principle to measure and benchmark outsourcing activities; and

4. Managers realize higher performance when they complement their use of customized contracts with supportive relational norms, or when the merely invest in such relational norms.

2 The Outsourcing Phenomenon from the Lenses of Economics and Strategy

2.1 Transaction Cost Economics

For organizational economics, the central question underlying the outsourcing of information technology and services, is how to choose, in a manner that maximizes performance, which service or activity to outsource. The outsourcing choice is predicated on the proposition that managers must match the IT activity, which differs in attributes, to governance forms, which differ in performance (Williamson, 1991b). The governance choice depends, therefore, on the comparative performance of the alternative forms, given the exchange attributes. Governance forms include: 1) coordinating the exchange of the service or product on a spot market in which price, quantity, and quality is readily observed, 2) using a more complex (hybrid) market arrangement in which contracts and social norms are used to govern the exchange, 3) employing ownership (vertical integration) to control the assets. Thus, according to *TCE not all IT* activities should be outsourced; some are better governed and yield higher performance when kept in-house.

TCE focuses on three exchange attributes that are likely to challenge market forms of governance: asset specificity, uncertainty, and measurement (Williamson, 1985, 1991a; Alchian & Demsetz, 1972). The attributes indicate situations in which opportunities exist for either one or both parties in a market exchange to be opportunistic: that is, to lie, cheat, or misrepresent information in such a way that one party benefits and the other party suffers loses. When opportunism arises, performance of the exchange suffers and the costs of managing the exchange (transaction costs) increase. The attributes, their challenges, and their optimal governance are detailed below.

Asset specificity, by definition, requires significant relationship-specific investments in physical and/or human assets that are non-redeployable to alternative uses or users. For example, an information service provider may customize an application to the clients' work setting. Similarly, the client may need to develop a unique understanding of the provider's procedures, approach, and language to effectively utilize their services. In outsourcing such exchanges, the continuity of an exchange becomes vital to its effectiveness. Severing the

relationship results in the forfeiture of the value of these specialized investments. Unexpected changes or unmet expectations may lead to threats to terminate the relationship, or alternatively, both contractual parties may seek to appropriate returns from these specialized investments. To safeguard against such hold-up behavior, managers adopt neo-classical contracts (i.e. relational contracts), which promote the longevity of relationship by specifying not only required actions and conditions of contractual breach, but also a framework for resolving unforeseen disputes and norms of trust, mutuality, and solidarity, which foster adaptations and project exchange into the future, despite the disputes that arise from unexpected events (Macneil, 1978; Williamson, 1991b).

Despite the positive governance features of relational contracts, TCE predicts that for the most extreme levels of specialized assets, vertical integration is the optimal governance choice. Ownership has demonstrative advantages over relational contracts in the ease and cost of highly consequential adaptations, which invariable arise during the course of exchange (Williamson, 1991b: 280). Firms have access to fiat, which can quickly resolve disputes. Moreover, information disclosure can be more easily accessed and more accurately assessed, and proposals for change are likely to require less documentation. Finally, incentives and informal organization are likely to support a more team-based approach to dispute resolution.

Difficulty in measuring the performance of exchange partners also challenges market exchanges. Markets succeed when they can effectively link rewards to productivity - that is they can measure productivity and pay for it accordingly (Alchian & Demsetz, 1972). When performance is difficult to measure, parties have incentives to limit their efforts toward fulfilling the agreement. Managers have two choices. They can realize lower performance because of their inability to measure performance, or expend resources to improve performance measurement by creating more complex contracts that specify delivered service levels or facilitate the monitoring of a supplier's behaviors as well as by developing social norms of trust, mutuality, and bilaterialism. For example, clauses may specify third party monitoring, disclosure of necessary documents to justify work done, and if possible, the use of benchmarks to gauge the performance of the work done. Social norms, if properly maintained, mitigate the negative effects of performance measurement, by effectively replacing self-interest with more cooperative behavior, which enhance information disclosure. Thus, as measurement becomes more difficult, we expect managers to develop more relational contracts, which enable them to accurately measure and reward productivity.

The agency literature is ambiguous as to whether vertical integration is superior to relational contracts for difficult performance measurement. When managers find it difficult to meter the activity and thus performance of their employees, they cannot implement high-powered incentives in which pay is a function of performance (Eisenhardt, 1988; Brown, 1990; Poppo & Zenger, 1998). Similar to more complex market arrangements, managers can develop rules and policies to

facilitate monitoring and information disclosure, and have access in informal structures or norms to support cooperation and unity of employees.

Uncertainty, the third hazard, challenges market exchange by requiring the parties to adapt to problems raised from unforeseeable changes. In general, markets marvel at autonomous adaptation, in which price serves as a sufficient statistic (Williamson, 1991b: 287), such as changes in demand and supply. For more complex forms of adaptation that require coordination among parties, simple market governance, however, is no longer adequate. In order to facilitate coordination, contracts become necessarily more customized by adding information disclosure and dispute-resolution procedures to facilitate the bargaining and negotiations that will invariably arise from technological or business changes. While contract customization is a necessary response to conditions of uncertainty arising from technological change, it is an inferior governance solution to vertical integration, which has access to fiat, better information disclosure, and incentives.

In situations in which transactions involve mixed attributes, such as uncertainty and asset specificity or difficult performance measurement, devising effective contracts becomes even more critical. Contracts must specify clauses not only to protect investments in specialized assets or to measure the performance of the party, but also to facilitate adjustments as adaptations become necessary. Absence such customization, market-based arrangements struggle with costly haggling and adaptation issues. Williamson (1985:80) further proposes that "unless an appropriate market-assisted governance structure can be devised, such transactions may 'flee' to one of the polar extremes as the degree of uncertainty increases." That is, firms may choose to procure a standard product or to vertically integrate if contracts can not sufficiently customized to safeguard the parties from opportunistic behavior. Thus, uncertainty may also act in conjunction with specialized assets and difficult performance measurement to increase the customization of contingent contracts, and in extreme cases, result in vertical integration.

2.2 Theoretical Counter-Attacks and Alternatives to TCE

Transaction cost economics assumes that formal controls and ownership are the most efficient mechanisms to offset costly adaptations that occur when specialized assets and uncertainty arise. Some strategists argue, however, that transaction cost economics overstates the desirability of either integration or explicit contractual safeguards in such exchange settings (Granovetter, 1985; Bradach and Eccles, 1989; Dyer & Singh, 1998; Gulati, 1995; Uzzi, 1997). They counter that when parties share an expectation of future exchange, and thus, value continuance of exchange, relational norms, most notably trust, but also mutuality and bilaterialism, offset self-interest and opportunism in market exchanges by promoting cooperation. Moreover, such social relationships reduce transaction

costs by facilitating negotiations and reducing the need to craft contracts. These theorists view relational norms as substitutes for complex, explicit contracts or vertical integration.

A more extreme position, taken by some, is that formal controls may even undermine a firm's capacity to develop relational norms. That is, the use of formal contracts or formal controls within the firm signal an initial distrust of the other party, and therefore undermines the creation of trust and the display of cooperation (Ghoshal and Moran, 1996). Macauley explains, for example, "Not only are contract and contract law not needed in many situations, their use may have, or may be thought to have, undesirable consequences. … Detailed negotiated contracts can get in the way of creating good exchange relationships between business units (1963: 64)." He argues that some firms discourage the use of an elaborate contract because it "indicates a lack of trust and blunts the demands of friendship, turning a cooperative venture into an antagonistic horsetrade" (p. 64). Thus, if trust is presence, formal contracts are at best an unnecessary expense and at worst counter-productive.

A second attack on the transaction cost view stems from a variant of the resource-base view of the firm, the knowledge-base view of the firm. Both the resource-base view and the knowledge view advance that competitive advantage stems from an ability of firms to exploit resources. Resources constitute assets that are rare, difficult to imitate, and non-substitutable, which managers acquire at a price less than the return that they produce (Barney, 1986 & 1991). The knowledge position applies this logic to the vertical integration decision. Connor (1991:140) explains: firms realize value from integrating assets that are highly specific to existing operations because "the in-house team is likely to produce technological knowledge, skill, or routines that fit better with the firm's current activities", when compared to the outsourced alternative. Thus, relatedness (that is, co-specialization) is the source of value creation. Efficiency gains are also realized from specific, related investments because of shared language, routines, and culture, resulting in more efficient communication and transfer of know-how (Demsetz, 1988; Kogut & Zander, 1992; Monteverde, 1995). The knowledge position, thus, offers an alternative motivation for vertical integration: rather than to avoid opportunism in market exchanges, firms invest in co-specialized assets to increase the productive value of such assets.

3 Research Approaches

This paper relies on two separate sources of empirical data. The first source of data is based on a survey of key informants from the *Directory of Top Computer Executives* (Poppo & Zenger, 1998; Poppo and Zenger, 2001; Poppo, Zhou, and Zenger, 2001). Key informants were top computer executives of US based

operations who held one of two positions: 1) the senior corporate information technology manager who provided overall guidance and planning for information services, or 2) the manager who had control over major data processing facilities in operating departments, divisions, or subsidiaries. The use of a single key informant in evaluating exchange performance is consistent with prior studies (Goodman, Fichman, Lerch, and Snyder, 1995; Mohr & Spekman, 1994) and should not threaten measurement validity (Anderson and Narus, 1990; Heide and John, 1990).

The directory, which has been in existence since 1972, included top computer executives of companies with an annual data processing budget of $250,000 or more. Also included in this directory were all Fortune 500 companies. By using this broad population of key informants, we sought to enhance the external validity of the study. Most previous studies of governance choice constrain their analysis to single firms or single industries.

We obtained 181 responses and of these 152 were usable. Each respondent provided data on 9 IS functions. Therefore, although the sample size varied by analysis, partly due to missing data, the core sample was 9 IT functions across 152 companies for a total sample of 1,368 information service exchanges. We tested for a response bias, and analyses indicated that no significant mean differences existed between early and late respondents on a sample of questionnaire items. Thus, there was no evidence of obvious response bias in the sample, other than the a slight under-representation of manufacturing companies.

The survey, requested information on nine commonly used information services: data entry; data center operations; network design; network operations (data); network operations (voice); end user support; training and education; applications development; and applications maintenance. For each information service we collected data on a number of theoretical constructs as well as control variables (see Table 1 for measurement of the theoretical constructs). Over 50% of the sample provided information services totally in-house and 70% of the sample outsourced 10% or less. Our pilot testing indicated that applications maintenance and applications development were categorically different from the other information services. Outsourcing, particularly partial outsourcing, was far more prevalent. IT managers were very likely to outsource some application-based projects while internally sourcing others. Hence, for these two information services, key informants provided separate information on the attributes for those applications they outsourced and those that they internally sourced.

Table 1: Measurement of Primary Theoretical Constructs

Theoretical Construct	**Measurement**
Performance	Managerial satisfaction with: 1) the overall cost of the service; 2) the quality of the output or service; and, 3) the vendor's responsiveness to problems or inquiries (cronbach alpha =.84).
Negotiation Costs	Level of agreement with: 1) negotiations of financial adjustments to the contract were typically difficult and lengthy, and 2) when unexpected changes arise, at least one party was dissatisfied with negotiated outcomes (cronbach alpha=.81)
Relational Norms	Level of agreement with: 1) the buyer has an extremely collaborative relationship with the vendor; 2) both parties share long and short-term goals and plans; and 3) the buyer can rely on the vendor to keep promises (cronbach alpha=.78).
Contractual Complexity	Level of agreement with: the formal contract is highly customized and required considerable legal work.
Asset Specificity	1) To what degree must individuals acquire company-specific or division-specific information to adequately perform the IS function?; 2) To what degree is your approach to this function (or set of applications) custom-tailored to the company?; and 3) How costly would it be to switch outsourcing vendors? (Consider the time required to locate, qualify, train, make investments, conduct testing, and develop a working relationship) (cronbach alpha=.83).
Measurement Difficulty	To what degree is it easy to measure the collective performance of those individuals who perform this function? (1=very difficult, 7=very easy). (reverse scored)
Technological Change	1) To what degree are the underlying skills associated with this IS function (or set of applications) rapidly changing?; and 2) To what degree is the optimal configuration of hardware and software required to perform this function (or set of applications) rapidly changing? (cronbach alpha = .84).

Note: Questionnaire items, unless stated otherwise, were measured using a 7-point scale in which "1" represented "low degree" and "7" represented "high degree".

The second source of data was based on 116 sourcing decisions, published in Lacity and Willcocks (2001). Lacity and Willcocks interviewed 271 people about 116 sourcing decisions made in 76 organizations. They wanted to get as many perspectives on IT sourcing decisions as possible, and therefore sought interviews with multiple stakeholders in each organization. The 271 participants included 64 IT managers, 56 supplier managers, 52 chief information officers, 45 senior business executives, and 24 consultants and IT experts. All interviews were tape recorded and transcribed in over 2,000 pages.

A variety of industries in a number of countries participated in the study. The cases represent public and private sectors, service and manufacturing sectors, and consumer and industrial products from over three continents (See www.umsl.edu/~lacity/cases.htm).

Unlike many IT outsourcing studies, Lacity and Willcocks collected data on outcomes and levels of success and failure . They first assessed expectations, then assessed whether expectations have been met, then compared the two to determine the extent of success.

When asking participants to describe sourcing expectations, they also asked participants to provide evidence of their expectations, such as archived documents. For example, if a participant cited cost savings as an expectation, they provided evidence such as a press clipping after the contract was signed indicating expected savings during the life of the contract. Not surprisingly, participants cited a variety of expectations (anticipated and hoped-for outcomes) and reasons (justifications or explanations) for their sourcing decisions. Four categories were used to capture 12 "expectations/reasons" cited by participants for sourcing: financial, business, focus strategy, and technical (See Lacity and Willcocks, 2001, p. 150). The four most commonly cited expectations/reasons were IT cost reduction, better service, ability to focus IT staff on core IT activities, and financial restructuring the IT cost structure.

Participants were also asked to what extent their expectations had been realized. Rather than solely base this on opinion, participants were asked to support their opinions with substantial evidence, including documents, budgets, press announcements, memos, reports, etc. The resulting indicator of success had four possible outcomes:

- YES, participants achieved most of their expectations
- NO, participants did not achieve most of their expectations
- MIXED results-participants achieved some major expectations but other major expectations were not achieved
- TOO EARLY TO TELL whether expectations were achieved

In this paper, we dropped the 14 decisions that do not have outcomes from the analyses as well as the 17 insourcing cases. Thus, findings are based on 85 outsourcing decisions with discernible outcomes.

4 The Optimal Governance of IT: Lessons Learned and Principles Applied by IT Managers

We had many discussions and interpretations of our perspective research studies. Initially, it appeared that our studies were contradictory: Lacity and Willcocks (1996, 2001) suggested that that TCE propositions was not largely supported in IT; while Poppo and Zenger (1998; 2001) suggested they were. We then realized that Lacity and Willcocks study spanned the 1980's as well as the 1990's, a time period that includes the initial emergence as well as some maturing use of IT outsourcing; where as Poppo and Zenger's data was in the early 1990s. This prompted a new analysis of the Lacity and Willcocks (2001) data. By dividing the data across two time periods, new and interesting findings concerning the applicability of TCE principles to IT outsourcing were found. These lessons, and our respective supporting data, are described in detail in this section.

4.1 Lesson: TCE Logic Is Not Intuitive, and Managers Learned through Their Mistakes in the 1980's How to Craft More Effective Contracts in the Mid 1990's

Finding: Specifically, contracts created since 1991 have higher relative frequency of success than contracts created in the 1980s.

Corollary: Contract created since 1991 have lower relative frequency of failure than pre-1991 contracts.

The following conclusions are based on data collected by Lacity and Willcocks (2001). The contract date was analyzed to determine whether customers were getting better at negotiating contracts. We classified decisions into two categories: "1984-1991" and "1992-1998". We chose 1991/1992 as the cut-off point because contracts studied span 15 years, thus the cut-off represents the midpoint. Using these two categories, we classified the 85 outsourcing contracts with discernible outcomes as follows:

- 29 contracts were signed between 1984 and 1991 (34%)
- 56 contracts were signed after 1994 and 1998 (66%).

It is evident that 73% of newer contracts were successful compared to 48% of older contracts as successful. Conversely, only 14% of new contracts failed compared to 41% of older contracts failing.

Table 2: Contract Date (n=85 Outsourcing Decisions with Discernible Outcomes)

Year Decision Was Made	YES, most expectations met	NO, most expectations not met	MIXED results	Total
1984-1991	14 (48.3%)	12 (41.4%)	3 (10.3%)	29
1992 to 1998	41 (73.2%)	8 (14.3%)	7 (12.5%)	56
TOTAL NUMBER OF DECISIONS	55 (64.7%)	20 (23.5%)	10 (11.8%)	85

We offer two explanations for the poor success rates of older contracts. First, customers had little experience with IT outsourcing in the 1980s. Prior to 1992, most organizations insourced the majority of their information technology, and thus lacked the skills to evaluate outsourcing, craft optimal contracts, or manage suppliers. Second, the outsourcing market was not mature-the number of suppliers were much fewer than today, and services were less differentiated. The major deals studied prior to 1992 were nearly all awarded to EDS or IBM. Clearly the absence of competition combined with little customer experience with IT outsourcing transactions, contributed to the failure rates.

In contrast, deals made after 1991 had a success rate of 73%. Next, we elaborate on the two major factors for improvement: customer learning and more supplier competition.

4.1.1 Customer Learning

First and foremost, significant customer learning about make-or-buy decisions, crafting contracts, and managing suppliers have served to significantly improve outsourcing transactions since 1991. The sources of customer learning include: the customer's own mounting experience with outsourcing (via incremental outsourcing) as well as the infusion of best practices from external consultants and legal firms.

Concerning incremental outsourcing, some of the Lacity and Willcocks (2001) participants adopted this outsourcing strategy precisely to develop an in-house knowledge base learnt from the initial outsourcing experience. With incremental outsourcing, organizations outsourced a small and discrete part of its IT activities, such as third-party maintenance or shared processing services. The experience gained from this first incremental approach was then fed back into further outsourcing. In two cases, a petrochemical company and an electric utility, organizations found themselves ultimately engaging in total outsourcing.

Another very important factor in customer learning is the wide spread-use of key IT outsourcing consultants and IT outsourcing legal firms. We are witnessing an institutional isomorphic effect where outside experts, such as Technology Partners

International (TPI) and Gartner Group, seed client organizations with similar standards and methods. In addition, all customers with outsourcing contracts over $1 billion belong to the ITTUG group, which provides many opportunities for information exchange. In this way, organizational learning is transferred across organizations, and proven practices are more quickly disseminated.

Taking a deeper look into TPI will serve to illustrate the effect these consulting firms on customer learning. Since 1989, Technology Partners International's mission has been to assist clients with the evaluation, negotiation and management of sourcing transactions. Denny McGuire, CEO and founder of the company, used to negotiate contracts for one of the major IT outsourcing suppliers. Thus, he knew the supplier's strategies, cost structures, practices, and contracts-and thus transferred this knowledge to customers who hired him. TPI now has over 100 professional consultants who average more than twenty years of experience in information technology and business processes across industries. TPI has the processes and experience to assist clients with total transactions value ranging from $50 million to over $4 billion. TPI consultants have assisted in over 300 client sourcing transactions valued at more than $175 billion. Considering that the entire US outsourcing market is $250 billion a year, we certainly understand the impact TPI has had on customer learning.

On the legal side, nearly every mega-deal involves the legal services of Shaw Pittman or Millbank Tweed. On the technology consulting and benchmarking side, Gartner Group and Compass are involved in nearly every mega-deal. The overall effect of these external constituents is the dissemination of best practices. In particular, mega-deal contracts are now templated, with all the customer costs, service levels, performance measures, mechanisms of change, and other clauses nearly identical. Although each organization participating in the research regards these practices as "competitive secrets", practices are nearly identical across mega-contracts. A typical mega-deal contract now contains 30,000 lines, over 600 service level agreements, and over 50 different pricing mechanisms.

Post-contract management practices are also becoming increasingly standardized, such external benchmarking of data centers, networks, desktops, and applications; color-coded problem resolution systems, joint supplier/customer teams to resolve disputes; and responsibility matrices to clearly define customer responsibilities and supplier responsibilities (for example at BAe, DuPont, Inland Revenue, Government of South Australia use these practices).

4.1.2 Increased Competition

The second major factor is the increased number of suppliers in the marketplace since 1991. Once dominated by a few big players (EDS and IBM), the IT outsourcing market had fragmented into many niche services. As competition in the outsourcing market increases, companies have more power to bargain for shorter contracts, more select services, and better financial packages. For example,

in the 1980s, a US chemicals company and a US Rubber Manufacturer, received only one supplier bid from EDS. In 1992, a UK public sector body received many responses, *"We put an advert in the press looking for interested parties, and had about 22 responses."* (Manager of IS) In 1993, a US Petroleum company reviewed a list of 115 potential suppliers. By 2000 we were noting in our advisory work many more players and ways organizations were contemplating using them, as we predicted in our 1995 Harvard Business Review article (Lacity, Willcocks and Feeny, 1995). However, suppliers capable of delivering a consistent service globally on even a specific aspect of IT were, even in 2000, still few and far between.

4.2 Lesson: Managers Realize Higher Performance When They Apply the TCE Principle to Not Outsource the Most Specialized Activities

As stated earlier, TCE argues that for the most extreme levels of specialized assets, vertical integration is the optimal choice. We view the entire information technology function as a *portfolio*-some of the IT portfolio is highly asset specific while some of the IT portfolio is non-specific (see for example, Feeny and Willcocks, 1998). This suggests that the optimal governance structure for IT is selective sourcing, where the most specialized aspects of IT is retained in house and the mixed and least specialized IT is outsourced. That is, total outsourcing (defined here as outsourcing more than 80% of the annual IT budget) would likely not be optimal for most firms.

Both Lacity and Willcocks (2001) and Poppo and Zenger (1998) find evidence that supports Conclusion #2.

Finding: Mangers that use selective outsource experience higher levels of met expectations that those that use total outsourcing.

First, the Lacity and Willcocks (2001) data shows that selective outsourcing in both time periods had a higher frequency of success than total outsourcing. Looking at the earlier contracts (1984 to 1991), selective outsourcing had a higher relative frequency of success (63%) compared to total outsourcing (20% successful.) In the later contracts (1992-1998), selective outsourcing had a higher relative frequency of success (87%) compared to total outsourcing (44% successful.)

With selective outsourcing, organizations can select the most capable and efficient source-a practice some participants referred to as "best-of-breed" sourcing. The most commonly outsourced functions were mainframe data centers, software development and support services, telecommunications/networks, and support of existing systems. In most cases, suppliers were judged to have an ability to deliver these IT products and services less expensively than internal IT managers.

Sometimes, the ability to focus in-house resources to higher-value work also justified selective outsourcing.

Table 3: The Performance Effects of Selective vs. Total Outsourcing Over Time (n=85 Outsourcing Decisions with Discernible Outcomes)

Year Decision Was Made	YES, most expectations met	NO, most expectations not met	MIXED results	Total
Selective Outsourcing	*12 (63%)*	*7 (37%)*	*0*	*19*
Total Outsourcing	*2 (20%)*	*5 (50%)*	*3 (30%)*	*10*
1984-1991 Totals	**14**	**12**	**3**	**29**
Selective Outsourcing	*33 (87%)*	*3 (8%)*	*2 (5%)*	*38*
Total Outsourcing	*8 (44%)*	*5 (28%)*	*5 (28%)*	*18*
1992 to 1998 Totals	**41**	**8**	**7**	**56**
TOTAL NUMBER OF DECISIONS	**55**	**20**	**10**	**85**

For total outsourcing, performance is much lower. In 10 of the 28 total outsourcing cases (36%) with discernible outcomes, however, expectations were not realized. Participants encountered one or more of the following problems:

- excess fees for services beyond the contract or excess fees for services participants assumed were in the contract (poor contracts or poor management of uncertainty)
- "hidden costs" such as software license transfer fees (poor contracts)
- fixed-prices that exceeded market prices two to three years into the contract (no mechanisms for change in the contract)
- inability to adapt the contract to even minor changes in business or technology without triggering additional costs (poor contracts)
- lack of innovation from the supplier (poor vendor selection or improper contractual motivation)
- deteriorating service in the face of patchy supplier staffing of the contract

As expected, total outsourcing remains problematic, most likely because too many knowledge specific activities are transferred to the supplier. Poor contracts are to be expected: that is, there is no optimal contract for governing specialized IT activities.

Finding: When outsourcing IT, managers experience increasingly lower performance as assets become increasingly specialized.

As noted above, many of the reasons cited by participants for the failure of total outsourcing are contractual in nature. While managers told Lacity and Willcocks that better contract design and incentives may improve performance, Poppo's and Zenger's (1998) results suggest that mangers may be too optimistic about the effective use of effective contracts. Regardless of the type of contract, specific assets damage the performance of market governance by creating hold-up hazards. Because exchange specific assets are of lesser value in alternative uses, partners in an exchange have incentives to appropriate returns from these specialized investments through post-contractual bargaining or threats of termination. Thus, increasing asset specificity leads to the diminishing effectiveness of market governance. Our results suggest that significant performance losses accrue as firms choose to coordinate firm-specific IT activities in the market. Markets simply lack effective mechanisms for resolving coordination problems and opportunism that arise as exchanges become increasingly specialized.

Finding: Surprisingly, managers do not experience increasingly better performance in-house as IT assets become increasingly specialized.

As stated earlier, customizing physical assets and developing firm-specific human assets enable firms to reduce production costs, innovate, and meet product specifications. Ideally, these investments should help provide strategic advantage. However, Poppo & Zenger (1998) find no evidence that such specialized assets generate the type of performance return envisioned by their managers. This finding does not suggest that markets are preferred – by integrating managers avoid the transaction costs associated with outsourcing specialized IT activities. Yet, this result does suggest that merely increasing specialization of the IT activity does not generate an incremental improvement in performance. Generating advantage from specialized investments is a very difficult task – sometimes it's a function of luck; sometimes it's a good idea; most of the time, it's a risky investment that turns out to be the wrong path because you paid too much to generate a return, or your competition can copy it or trump it with superior alternative. Poppo & Zenger's (1998) result is particularly disappointing for the knowledge-base view, and they suggest that at the time of their study, firms may have been disappointed with their IS/IT because of their inability to keep abreast of the latest developments, given the rapidly changing and evolving applications in the early 1990s.

Finding: Consistent with TCE, increased specialization of assets is met with increased contract customization.

We also explored when IT managers are more likely to invest in more customized contract design. Recall that TCE advances that managers craft increasingly complex contracts in response to exchange hazards. Poppo and Zenger (2001a) find that managers do not increasingly customize their contracts to response to the hazards of difficult performance measurement and technological change. Rather, they customize contracts to protect their investment in specialized assets. Because

specialized assets have no value in alternative uses, if an exchange relationship is prematurely terminated, managers are not likely to have recouped their investment. Through contractual complexity, managers specify penalties for early termination, and this formal record facilitates, if need be, the court "picking up the pieces" and resolving termination issues. This result confirms the non-triviality of specialized assets and its importance in the governance decision.

Taken together, these results suggest that neo-classical contracts have adaptive limits when it comes to technological change and the more hazardous situation of both technological change and difficult performance measurement. This result in broadly consistent with Williamson (1985:80) argument that managers will flee from hybrid forms of governance which are ill-suited to deal with the problems of adaptation and haggling, and suggests that optimal contracts may not exist.

4.3. Lesson: Managers Realize Higher Satisfaction When They Apply the TCE Principle to Measure and Benchmark the Performance of IT Activities

Finding: When IT managers could not easily measure the performance of an outsourced activity, they were less satisfied with its cost performance.

Finding: IT managers were less satisfied with the cost, quality, and responsiveness of internal activities when they could not easily measure its performance.

Consistent with the agency theory and property rights literature, our results (Poppo & Zenger, 2001a) confirm the role of measurement difficulty as a determinant of governance performance in both markets and within firms. Difficulty in measuring the internal performance of an activity leads to assessments of lower internal performance along all dimensions – cost, quality, and responsiveness. This finding is entirely consistent with the predictions of principal-agent models. Imprecise measurement constrains the incentive intensity of rewards and low powered rewards limit performance. While managers may employ centralized decision making and behavioral monitoring to mitigate measurement problems, these governance devices appear to fail as output measures become increasingly imprecise. In order to improve performance, managers need to apply benchmarking and more effective monitoring devices just like they do to evaluate outsourced IT.

Our results are less consistent in demonstrating that measurement difficulty damages the performance of markets. Consistent with predictions in the property rights literature, measurement difficulty appears to strongly damage cost performance. However, contrary to prediction, measurement difficulty has only insignificant negative effects on quality and responsiveness as performance measures. Reputations for quality and responsiveness are important for vendors to

maintain even when measurement difficulty creates opportunities for short term gains.

Alternatively, the IT managers satisfaction with quality and responsiveness may occur because of contractual specification. We have already noted that a typical mega-contract now can include over 600 service level agreements. Service level agreements essentially define the service, how the service will be measured, how the service will be reported, escalation procedures for a missed service level, and even penalties for non-performance. Ironically, none of the mega-deals studied in Lacity and Willcocks (2001) were able to manage 600 plus service levels, particularly on a global basis, but no participant regretted the detailed SLAs-they are there if they need them. Instead, customers tended to focus on a few key measures. But the point is that the service levels in the contract now are treated as a baseline measure. In long-term contracts, customers expect the suppliers to *improve* service level performance. The challenge became: how can the customer contractually obligate the supplier to improve performance? Enter external benchmarking.

Many mega-contracts now require that service levels and unit prices be periodically benchmarked, typically every three years. Benchmarking is the practice of comparing a customer's IT performance against a reference group of similar organizations. The idea is that customers contractually obligate suppliers to be in the top X% of service performance and the bottom X% of unit price. Thus, benchmarks become contractual obligations to reduce costs and improve service levels. But how do they work in practice?

Based on TPI and Garter's influence on contracts, benchmarks are organized into "towers", including telecommunications, desktops, midrange, and applications. A balanced scorecard approach is typically adopted, using a number of measures to determine an overall bill of health for each tower. In general, external benchmarking firms such as Gartner and Compass, competently measure the cost and service of technical platforms such as IBM mainframe data centers, UNIX midrange computing, or LAN performance. But Lacity and Willcocks (2001) found that both customers and suppliers agree that benchmarking is still immature in a number of areas, particularly desktop computing and applications. In addition, suppliers may contest results of the benchmark. For example, a few customers found that the suppliers' application productivity was low and costs were high, as assessed by a benchmarking firm using function point metrics. The customers wanted the suppliers to lower their prices and improve service. But the suppliers argued that the application productivity depends not only on the supplier's performance, but on the quality of the applications inherited from the customer. Over-customization and jury-rigged legacy systems required a significant amount of supplier support. Is it fair to compare the supplier's performance of these old systems against the best-of-breed productivity in a bench marker's database?

> "Our experience, being honest, is that I haven't been terribly happy with the benchmarking process. This is not happy for CSC nor BAe. It's just the process seems to be a little bit naive." - Contract Manager for British Aerospace

Despite the immaturity of benchmarking, it does provide evidence that managers are trying to better measure supplier performance and to motivate suppliers to improve performance while reducing unit costs over time.

4.4 Lesson: Managers Realize Higher Performance When They Complement Their Use of Customized Contracts with Supportive Relational Norms. They Also Realize Higher Performance When Investing in Just Relational Norms

Finding: The larger the investment in social relationships, the higher the managers' satisfaction of the IT vendors' cost, quality, and service goals and the lower the negotiation costs.

Corollary: Managers experience lower performance and greater negotiation costs from IT vendors that they have known for years and years

Both sociologists and strategists criticize TCE for its relative neglect of the role of social relations in economic exchange. Both Poppo and Zenger (2001a) and Poppo, Zhou, and Zenger (2001b) find strong support that social norms enhance exchange performance, and help managers realize more equitable outcomes and less difficult negotiations to unexpected changes. Thus, contrary to TCE relational norms appear to operate as a viable governance choice, and offers a wider range of performance improvements that would be specified by the TCE framework. Yet, it is important to note that our data also shows a dark side of social relations. Merely contracting with a known party is not sufficient to product performance improvements. In fact, our data (Poppo, Zhou, and Zenger, 2001) suggest, to the contrary, that managers experience lower performance from such vendors. Given the high degree of technological change, it is not surprising that a reliance on a vendor because of past use is not sufficient to produce expected performance levels. Managers must continually assess supplier capabilities and their internal IT demands, in order to select the best IT supplier, and therefore, achieve performance expectations.

Finding: Managers appear to complement their investment in contract customization with the development of social relations, and in doing so improve the performance of the outsourced activity.

TCE and legal scholars argue that social relationships are a necessary complement to contracts, while some strategists argue that it's a substitute for contracts. Both are best an unnecessary expense, and at worse counter-productive. Consistent with

the notion of complements, our results (Poppo and Zenger, 2001a) show that managers tend to employ greater levels of relational norms as their contracts become increasingly customized, and to employ greater contractual complexity as they develop greater levels of relational governance. We suggest that customized contracts narrow the domain around which parties can be opportunistic. Customized contracts specify contingencies, adaptive processes, and controls likely to mitigate opportunistic behavior and thereby support relational governance. However, customized contracts do not guarantee the intent of mutuality, bilaterialism, and continuance when conflict arises. Relational governance complements such adaptive limits of contracts by fostering continuance of the exchange and entrusting both parties with mutually agreeable outcomes.

Contractual complexity and relational governance not only function as complements, but also, as complements, improve managerial satisfaction with exchange performance, which is clearly inconsistent with a substitution perspective. Taking into account the positive relationship between relational governance and contract customization, the results of our models show that managerial satisfaction with the cost, quality, and service of the outsourced service improves as the exchange is increasingly governed through relational norms and through more complex contracts. Note, however, that our performance measure generally ignores the costs associated with increasing the complexity of contracts and developing relational norms, which is necessary to thoroughly test the substitution argument.

> "A good contract does not ensure a good relationship, but a bad contract does ensure a bad relationship." - Bob Ridout, Chief Information Officer, DuPont

The quotation underscores the finding that customers and suppliers must create social norms to complement their use of contracts. The Lacity and Willcocks (2001) nomenclature use the term "post contract management" to capture the social norms instituted on successful deals. Several practices that are becoming common on large deals include an intensive off-site, team building exercise between customer and supplier representatives just after the contract is signed. The purpose is to reorient both sides away from the adversarial positioning that occurs during contract negotiations towards a more cooperative positioning after the contract is signed. Another common practice is joint customer/supplier task forces to resolve conflicts. Here, lower level employees are evaluated on how well the team resolves conflicts, rather than how well they defended their perspective organizations. The operating principle of each team is to be fair, not to exploit any contract inefficiencies. If joint teams cannot resolve a problem, it is typically escalated up the chain of command, ultimately to the general contract managers.

More formally, Lacity and Willcocks (2001) expanded three post contract management capabilities (first identified by Feeny & Willcocks 1998) to help ensure outsourcing success.

4.4.1 Contract Facilitation

Both users and suppliers place high value on effective contract facilitators. Although contract facilitation is sometimes set up to manage excessive user demand and cost overruns with suppliers, in general it is a coordinating role. But a fundamental task would seem to be that of managing expectations on all sides. The role of contract facilitation in such situations is demonstrated by this manager commenting on the UK Inland Revenue Service deal with EDS:

> 'There is always some hot spot somewhere that's not working entirely the way either side is expecting. And usually it's a misunderstanding of what people can expect from the contract and relationship. So once you get in there, it's not always difficult to find some way to improve the relationship. It's just that you don't always know until there is a bit of a stand-off.'

4.4.2 Contractual Adjustments

As organizations exploit the burgeoning external market for IT services, contract monitoring and adjustment becomes a core IT capability. While the contract facilitator is working to ‘make things happen’ on a day-to-day basis, the contract monitor is ensuring that the business position is protected at all times. Effective contract monitoring involves holding suppliers to account against both existing service contracts and the developing performance standards of the services market. It enables the production of a 'report card' for each supplier that highlights their achievement against external benchmarks and the standards in the contract. Nor would it seem that the role is about merely monitoring a static contract. According to one contract manager:

> 'We've come to the conclusion that actually it has to be a much more dynamic, moving, changing thing rather than a set-in-stone thing. We've been jointly working (client and vendor) to realign the mechanisms so that they produce the results more in keeping with what we went after. But the important factor is that we anticipate to do the same thing in two to three years time, and then two to three years after that. Not because we got it wrong, but because of the changes in technologies and user requirements.'

4.4.3 Supplier Development

The single most threatening aspect of IT outsourcing is the substantial switching costs. To outsource successfully requires considerable organizational effort over an extended period of time. In one case, it took more than 50 person-years to arrive at a contract for a ten-year deal worth around $700 million. Sizable implementation requirements followed. To subsequently change suppliers may require equivalent effort. Hence it is in the company's interest to maximize the contribution of existing suppliers, and also, when outsourcing, to guard against

what we call 'mid-contract sag.' A supplier may be meeting the contract after two or more years, but none of the much talked- about added value of outsourcing materializes. As one IT Services Director commented in an aerospace company:

> 'Yes (the supplier) can achieve all the things that were proposed - but where is this famous 'added-value service'? We are not getting anything over and above what any old outsourcer could provide.'

In supplier development, organizations look beyond existing contractual arrangements to explore the long term potential for suppliers to create the 'win-win' situations in which the supplier increases its revenues by providing services that increase business benefits. A major retail multinational has many ways to achieve this, including an annual formal meeting:

> 'It's in both our interests to keep these things going and we formally, with our biggest suppliers, have a meeting once a year and these are done at very senior levels in both organizations. There are certain things we force on our suppliers, like understanding our business and growing the business together…and that works very well.'

While joint understanding of each other's business is important, and relational norms assure such cooperation, it is unwise to think that such partnership will create value-added service. Such specialization is generally beyond the scope of market arrangements, and requires vertical integration.

Finding: Managers decision to invest in relational norms appears to be largely a response to IT vendors they have done business with, and not a 'calculative' response of how to most effectively mitigate market hazards.

The mechanisms through which relational governance attenuates exchange hazards are both economic and sociological in nature. Economists emphasize the rational, calculative origins of relational governance, emphasizing particularly expectations of future exchanges that prompt cooperation in the present. Sociologists emphasize socially derived norms and social ties that have emerged from prior exchange (Uzzi, 1997:45). Trust is therefore considered a trait that becomes embedded in a particular exchange relation. In essence, once an exchange partner is granted 'trustworthy' status, they are expected to behave in a trustworthy fashion in the future. We (Poppo, Zhou, Zenger, 2001b) find no evidence the managers are using a calculative approach of when an investment in social relations is worthwhile. Market hazards, such as technological change, difficult performance measurement, and technological change, do not prompt greater levels of relational norms. Instead, managers appear to link their development of relational norms to IT vendors that have survived (in effect, those that they have done business with for years and years).

5 Conclusion

Our review, based on the results of two very different research approaches, shows that IT managers enjoy higher performance when they use the prescriptions offered by TCE to determine what to outsource and how to structure the governance of the outsourced activity. We find, in particular: 1) Managers should not outsource their most specialized, knowledge intensive IT, but will experience greater satisfaction if left in-house, 2) Managers realize higher satisfaction when they apply the TCE principle to measure and benchmark outsourcing activities, and 3) Managers realize higher performance when they complement their use of customized contracts with supportive relational norms.

Yet, our review also suggests two important caveats: 1) Managers do not easily intuit the results of efficient governance, but learn through their mistakes, and 2) Managers should develop supporting social norms and practices to govern their outsourced activity, a governance device that is largely ignored, and thus undervalued in TCE.

The fact that managers need to learn the framework as well as how to apply the framework suggests that any dramatic change in how business is done represents a potential short-term source of competitive advantage. That is, managers who learn quickly and without huge financial mistakes how to best govern may realize higher economic performance that those who learn slowly. This issue is especially germane to IT as this time because the rules of how to outsource are changing. One recent development is the "commodization" of IT outsourcing transaction process, including RFPs, bids, and contract negotiations through IT outsourcing exchanges. Currently, the Everest Group and the Outsourcing Institute have such exchanges. The Everest Group, for example, already has 400 suppliers in the exchange. ScotiaBank, for example, used the Everest Group exchange to find a supplier and negotiate a $23 million customer relationship management project. (It is interesting to note that the bank hired TPI to help with the RFP). The entire process took 2 months as opposed to the normal 6 month process for this size deal. EDS won a $150 million contract through the same exchange. The exchange is challenging some of EDS's established regional compensation mechanisms. For example-the EDS person credited with the $150 million sale made their entire year's quota by February! Thus, although IT has not become a commodity, the coordination processes are becoming increasingly commodized. Managers who realize how to make this process more efficient are likely to generate economic returns, a source of advantage, until it is replicated by others.

While empirical work validates the TCE framework for the make-or-buy decision, it remains an empirical question as to whether ‘ownership’ dominates the governance device of social norms. Thus, some of the most interesting questions, such as the relative efficiency of relational norms compared to ownership or the substitution of ‘partnerships’ for vertical integration remain an avenue for

empirical inquiry. The issue is particular germane to IT as technology continues to change, evolve, and reinvent itself. It's unlikely that firms who do not have a capability in IT can keep abreast of such changes as efficiently as an IT specialist. If a firm believes IT is germane to competitive advantage, then it may well be better of partnering with an IT firm than pursuing integration. Yet, practitioners need to keep in mind that optimal governance of a partnership, including the social norms, may need to learned, just as IT managers have learned the criticality of well-specified contracts.

References

Alchian, Armen & Harold Demsetz. 1972. Production, information costs, and economic organization. *American Economic Review*, 62: 777-95.

Barney, Jay. 1986. Strategic factor markets: Expectations, luck, and business strategy. Management Science, 32, 1231-1241.

Barney, Jay. 1991. Firm resources and sustained competitive advantage. *Journal of Management*, 17: 99-120.

Bradach, J. and R. Eccles. 1989. Price, authority, and trust: From ideal types to plural forms. *Annual Review of Sociology*, 15:97-118.

Brown, Charles. 1990. Firms' choice of method of pay, in Ronald G. Ehrenberg (ed.), *Do Compensation Policies Matter*, Cornell University: ILR Press, 165-182.

Conner, Kathleen. 1991. A historical comparison of resource-based theory and five schools of thought within industrial organization economics: Do we have a new theory of the firm? *Journal of Management*, 17, 121-154.

Demsetz, Harold. 1988. The theory of the firm revisited. *Journal of Law, Economics, and Organization,* 4(1):141-162.

Dyer, J. and H. Singh. 1998. The relational view: Cooperative strategy and sources of interorganizational competitive advantage. *Academy of Management Review*, 23: 660-679.

Eisenhardt, Kathleen M. 1988. Agency and Institutional Explanations of Compensation in Retail Sales. *Academy of Management Journal*, 31: 488-511.

Feeny, D. and Willcocks, L. (1998). Core IS Capabilities For Exploiting Information Technology. *Sloan Management Review*, 39, 3, 9-21.

Ghoshal, S. and P. Moran. 1996. Bad for practice: A critique of the transaction cost theory. *Academy of Management Review*, 21: 13-47.

Granovetter, M. 1985. Economic Action and Social Structure: The Problem of Embeddedness, *American Journal of Sociology*, 91(3), 481-510.

Gulati, R. 1995. Social structure and alliance formation patterns: A longitudinal analysis. *Administrative Science Quarterly*, 40, 619-652.

Joskow, P. 1988. Asset Specificity and the Structure of Vertical Relationships: Empirical Evidence. *Journal of Law, Economics, and Organization*, 4, 95-118.

Kogut, Bruce & Udo Zander. 1992. Knowledge of the firm, combinative capabilities, and the replication of technology. *Organization Science*, 3: 383-397.

Lacity, M., and Willcocks, L. (2001), *Global Information Technology Outsourcing: Search for Business Advantage,* Wiley, Chichester.

Lacity, M. and Willcocks, L. (1996). Interpreting Information Technology Sourcing Decisions From A Transaction Cost Perspective: Findings and Critique. *Accounting, Management and Information Technology,* 5, 3/4, 203-244.

Lacity, M., Willcocks, L. and Feeny, D. (1995). IT Outsourcing: Maximize Flexibility and Control. *Harvard Business Review,* May-June, 84-93.

Macaulay, S. 1963. Non-contractual relations in business: A preliminary study. *American Sociological Review*, 28, 55-69.

Macneil, I. R. 1978. Contracts: Adjustment of Long-term Economic Relations Under Classical, Neoclassical and Relational Contract Law. *Northwestern University Law Review*, 72:854-905

Poppo, Laura and Todd Zenger, 1998. Testing alternative theories of the firm: Transaction cost, knoweldge-based, and measurement explanations for make-or-buy decisions in information services. Strategic Management Journal, 19, 853-877.

Poppo, Laura and Todd Zenger, 2001a. Do Formal Contracts and Relational Governance Function as Substitutes or Complements?, working paper.

Poppo, Laura, Zheng Zhou, and Todd Zenger, 2001b. On the Road to Social Relations? Examining the Limits of Relational Norms, working paper.

Shelanski, Howard, A., & Peter Klein. 1995. Empirical Research in Transaction Cost Economics: A Review and Assessment. *Journal of Law, Economics, and Organization*, 11(2): 335-361.

Teece, David. 1988. Technological change and the nature of the firm. In G. Dosi, et al. (eds.) *Technical Change and Economic Theory,* London: Pinter Publishers, 256-281.

Uzzi, Brian. 1997. Social structure and competition in interfirm networks: The paradox of embeddedness. *Administrative Science Quarterly*, 42, 35-67.

Williamson, O. 1985. *The Economic Institutions of Capitalism*. New York: The Free Press.

Williamson, Oliver. 1991a. Strategizing, economizing, and economic organization. *Strategic Management Journal*, 12: 75-94.

Williamson, O. 1991b. Comparative economic organization: The analysis of discrete structural alternatives. *Administrative Science Quarterly*, 36: 269-296.

Williamson, O. 1999. Strategy research: Governance and competence perspectives, *Strategic Management Journal*, 20: 1087-1108.

Success of IS Outsourcing as a Predictor of IS Effectiveness: Does IT Governance Matter?

Markku Sääksjärvi

Helsinki School of Economics and Business Administration, Department of Management Technology, saaks@hkkk.fi

1 Introduction

1.1 Evolution of IS Outsourcing

During the 1990's, outsourcing of IS services has become one of the important topics in IS research. Since the first rather intensive debates on the relevant arguments in favor or against radical outsourcing contracts, researchers have tried to create theories and models to understand better why, when and which IT services a company should outsource. Also, senior IT executives have highlighted outsourcing as an important strategic management issue that organizations need to confront in their management of corporate systems.

According to Loh and Venkatraman (1992) IT outsourcing should be defined broadly: "IT outsourcing is the significant contribution of external vendors in the physical and/or human resources associated with the entire or specific component of the IT infrastructure in the user organization". Additionally, since long outsourcing contracts of IS services is no more a separate phenomenon in organizations, it has become an important strategic issue related to IT management.

Grover et al. (1996) have characterized the evolution of the nature of IS outsourcing in five typical features:

1. Larger companies outsourcing,
2. A greater range and depth of services being outsourced,
3. More functional outsourcing,
4. Management responsibility and risk moving to vendors, and
5. Changing nature of the relationship with the service vendor.

In their empirical study on success of IS outsourcing the above-mentioned authors observed that outsourcing success was highly related to the degree of structured services outsourced (like operations and telecommunications services) but not to the degree of asset specific services. Also, partnership was in an important relationship with outsourcing success. Grover et al. (1996) proposed that outsourcing success could be contingent on a myriad of factors, including technological substitutability, IS maturity, strategic orientation, and many others. They also stated that studies, which examine these variables can facilitate development of a theory of IS outsourcing.

During the 1990's a plethora of theoretic models were proposed in various outsourcing studies. Most of the proposed approaches followed the typical intersection approach to IS research (Davis 2000), with the primary interest to provide insight into organizational motivation and impacts of outsourcing and borrowing the theory or the conceptual model from other disciplines. Among these approaches were e.g. the classic theory of the firm, transaction cost economics (Gurbaxani and Whang 1991, Loh and Venkatraman 1992, Ang and Straub 1998), theories of marketing service and relations management (Klepper and Hartog 1992, Pinnington et al. 1997), strategic partnership (McFarlan and Nolan 1985, Wilcocks and Kern 1998), power in organizations (Lacity and Hirschheim 1993), decision theory (Teng et al. 1996), resource-dependent theories, game theory, and others. Many of these approaches could be classified as "new theory testing" approaches, which often modeled IS outsourcing as a separate phenomenon, not as an integrated part of strategic IT management.

During the last years serious attention was paid also on the more strategic aspects of IS outsourcing. One interesting strategic approach was to model and study the overall acquisition and service providing strategies, trying to find out the best configurations of the service palettes. Empirical results demonstrated considerable complexity among the optimal arrangements. Apparently, customer or vendor dominant strategies alone have not seemed to provide optimal results (Pinnington et al. 1997). Lacity and Willcocks (1998) found in their study that functional outsourcing was more successful than either total insourcing or total outsourcing.

One important and novel idea in outsourcing research was that companies should distinguish between the two main approaches to IS development: specifying and provisioning (Peppard 1999). Specifying the IT architecture is seen to belong to internal management whereas provisioning the IT infrastructure services may be suitable for outsourcing. In fact, growing importance of the corporate IT infrastructure (Broadbent et al. 1996, Weill and Broadbent 1997) has led to a new dichotomy in IT management: separation of the centrally managed corporate IT infrastructure from the business specific applications. Taking the IT infrastructure as a flexible platform that makes external supply of IT services easier (Sääksjärvi 1997, 2000) leads to a more incremental approach to systems architecture at large, separating the long-range platform investment from the short range business applications. Cross et al. (1997) pointed out that the corporate IT infrastructure

should be viewed as an enduring IT resource, while IS applications have a much shorter life span. Applications are redesigned or replaced to meet specific and changing business conditions. For these reasons, outsourcing of the IT infrastructure and of business specific IS applications are very different decisions, however both being often strategic.

The latest trend of IT outsourcing seems to evolve around the concept of Application Service Provider (ASP), especially the next generation of ASP services called the Software as a Service (SaaS) (Desai et al. 2003, Ekanayaka et al. 2003, Mizoras 2003, Walsh 2003). This SaaS concept integrates infrastructure, software innovations, application development, and additional services into a compact external online service. In the SaaS model, it is typical that the radical innovations turn into incremental innovations, and the focus will move from product based to process based (enabled) outsourcing, offering radically different licensing models (Sääksjärvi et al. 2005).

The above considerations make IS outsourcing even more tightly connected to the key issues of strategic IT management especially in large and complex organizations. IS outsourcing at the business level is not independent but may be limited by the corporate IT infrastructure, which is normally a strategic and centrally managed issue at the corporate level. Also, outsourcing deals with the important strategic questions such as acquiring new skills (Agarwall and Sambamurthy 2002), defining the business and IT scopes, and the distribution of IT decision power in organizations (Sambamurthy and Zmud 1999, Weill 2004).

Therefore, in this paper our aim is to analyze IS outsourcing in the strategic context of IT management, dealing with both organizational and IT infrastructures. For this purpose we will apply two well-known conceptual models. One is the strategic alignment model (Henderson and Venkatraman 1993), originated as an integrative fusion of earlier fit and alignment notions proposed in the strategy literature. The other model is the newer IT governance concept, dealing with the patterns of authority and decision rights for key IT activities in business firms (Sambamurthy and Zmud 1999). IT governance aims at getting better business value from IT investments through careful distribution of IT decision rights and governance mode.

1.2 Objectives and Outline of This Paper

In this paper we are interested in studying the success of IS outsourcing and its relation to the other two key predictors of IS effectiveness, namely IT governance and strategic integration. In chapter 2 we will review these models and discuss the role of IS outsourcing. In chapter 3 we present our research methodology, including the proposed framework, our hypotheses, measures that were used, and the collected data. The hypotheses are based on our assumption that IT outsourcing in (at least well-managed) large companies should be in a synergetic

interplay to contribute to IS effectiveness. In chapter 4 we present the results from testing our hypotheses, and in the last chapter 5, we present and discuss our conclusions.

2 The Theoretic Context of IS Outsourcing

2.1 Strategic Alignment Model

Henderson and Venkatraman (1993) proposed their strategic alignment framework to model the very problematic interplay of business and IT domains in companies. The key argument for this complex, integrative model was according to the authors the inability of companies to realize value from their IT investments due to the lack of alignment between business and IT. The framework itself was based on an extensive analysis of earlier strategy literature.

The strategic alignment framework separated between the strategic (external, planning) and the operational (internal, implemented) levels, and instead of the earlier very general "fit" concept they proposed two different key concepts as measures of alignment: integration and fit. According to the model, it was important to make sure that both the external (strategic) and internal (implemented) domains are fitted together both in the case of business and IT domains, meaning that the implementation of the business and IT strategies are done correctly. In addition to this, the business and IT domains should be integrated both at the strategic and at the operational levels. Only if these conditions, fit and integration, are met the business and the IT domains are aligned together. As Henderson and Venkatraman (1993) pointed out, the concept of strategic alignment was not a one-time event but a continuous process of adaptation and change, and they proposed four generic alignment perspectives (processes) to improve and manage the alignment of business and IT.

In principle, IS outsourcing can be seen as a key issue affecting and being affected by the external (strategic) and the internal (operative) integration. According to the original model, strategic integration requires the capability of the IT functionality to both shape and support the business strategy. The different sub-domains mentioned were scope, capabilities, and governance (distribution of decision rights) both for business and IT. Clearly, IT outsourcing in large companies will touch all three sub-domains. Strategic decisions on what IT capabilities, processes and systems a company should manage itself (and which decision rights are delegated at the business level) will require capable business and IT executives. Very probably, at the presence of high integration IT outsourcing decisions will be in better balance with the factual situation and therefore, the success of IT outsourcing would be better also contributing to IS effectiveness.

2.2 IT Governance

According to Sambamurthy and Zmud (1999) IT governance arrangements refer to the patterns of authority for the key IT activities in business firms, which include IT infrastructure, IT use, and project management. According to their empirical results, the prevalent three IT governance modes (centralized, decentralized, and the federal mode) are in fact not planned but impacted by a complex interplay of multiple organizational contingencies in the business environment around IT. Among these are the corporate governance in general, the economies of scope, and the absorptive capacity of line managers. Based on their results, Sambamurthy and Zmud proposed that synergetic contingencies would lead to either centralized or decentralized modes, and conflicting forces to the federal mode.

The above conclusion indicates that the federal governance mode may be unstable and more difficult to manage than the two other alternatives. We could assume that the IT governance mode (organizational structure) alone will therefore give no guarantees of IS effectiveness. Without sufficient capabilities and communication of line and IT executives centralization or decentralization may not make any difference.

Weill (2004) defined IT governance as "specifying the framework for decision rights and accountabilities to encourage desirable behaviour in the use of IT". Weill proposed that six different governance archetypes are found in practice: business and IT monarchies, feudal, federal, IT duopoly, and anarchy to cover the five decision areas defined. On the basis of empirical observations Weill concluded that poorer governance-performing companies typically used federal arrangements in their decision-making. Several even more complex arrangements were observed in the well-performing companies. These results coincide with the above-mentioned results of Sambamurthy and Zmud (1999) regarding the problematic nature of the federal governance mode.

2.3 Discussion

According to the strategic alignment model, IS outsourcing is tightly connected in the strategic choice regarding the set of strategic skills developed within or acquired outside of the company. To be successful, business and IT executives should share their view of the future role of IT as a business contributor, and they should possess the capability to make the right outsourcing decision. Strategic integration should therefore be a good measure explaining the (strategic organizational) IT effectiveness. As such, strategic integration (alignment) can be seen as a capability based IT governance concept. Real managerial skills, competencies and communication between business and IT executives should lead to increased IS effectiveness, not just allocation of decision rights.

The allocation of IT decision rights and IT governance mode highlight the factual specific organizational arrangements and formal allocation of IT decision rights. On the basis of the referred articles, we assume that both of these affect IS effectiveness and IT business value.

In the following section, we perform a comparative empirical analysis exploring the power of strategic integration, IT governance, and the success of IS outsourcing in predicting IS effectiveness, especially the strategic effectiveness.

3 Research Methodology

3.1 Framework and Hypotheses

The objective of this empirical study is to analyze the relative predicting power of the success of IS outsourcing on IS effectiveness at the business division level in large companies. Most importantly, the idea is also to compare this predicting power with that of the strategic integration and the IT governance, including analysis of the possible interplay between these factors. The object of interest in evaluating the impacts of IS outsourcing is at the business unit level. At that level, the evaluation of the impacts of IS outsourcing on organizational (and business) effectiveness can be evaluated in a reliable way. Senior line executives responsible of the business divisions normally are also responsible of their specific IT investments and therefore, they should be the most competent ones to evaluate the outcome of IS outsourcing on their business.

On the basis of the strategic alignment model both the high strategic and the operational integration are expected to make IS effective. Therefore, successful outsourcing should be in a synergetic relationship with these measures of integration to contribute to the overall IS effectiveness. Mature adaptation of IS outsourcing into the institutional mechanisms of IT management in large corporations should result in a synergetic and non-competitive relationship between the IS outsourcing success and the IT governance measures presented.

From the evolving IT governance theory we can assume that both the governance mode (centralized, federal, or decentralized) and the factual distribution of IT decision rights to line executives affect IS effectiveness.

On the basis of the above-mentioned considerations we generated the following research hypotheses in order to test our assumptions:

Hypothesis 1: *Success of IS outsourcing is positively related to IS effectiveness.*

Hypothesis 2: *Strategic integration is positively related to IS effectiveness.*

Hypothesis 3: *Line executives' IT decision power is positively related to IS effectiveness.*

Hypothesis 4: *Strategic integration and success of IS outsourcing are in a moderating (synergetic) relation regarding IS effectiveness.*

Hypothesis 5: *Line executives' IT decision power and success of IS outsourcing are in a moderating (synergetic) relation regarding the business value (strategic IS effectiveness).*

We created our research framework presenting the hypotheses in Figure 1. The framework consists of direct and moderating (synergetic) relations between the IS outsourcing success, strategic integration and IT decision power on IS effectiveness.

The rightmost box in the model describes the dependent variable, IS effectiveness. Instead of a one-dimensional approximation of effectiveness we modeled IS effectiveness as a combination of strategic and operative dimensions, based on a factored decomposition of our effectiveness instrument.

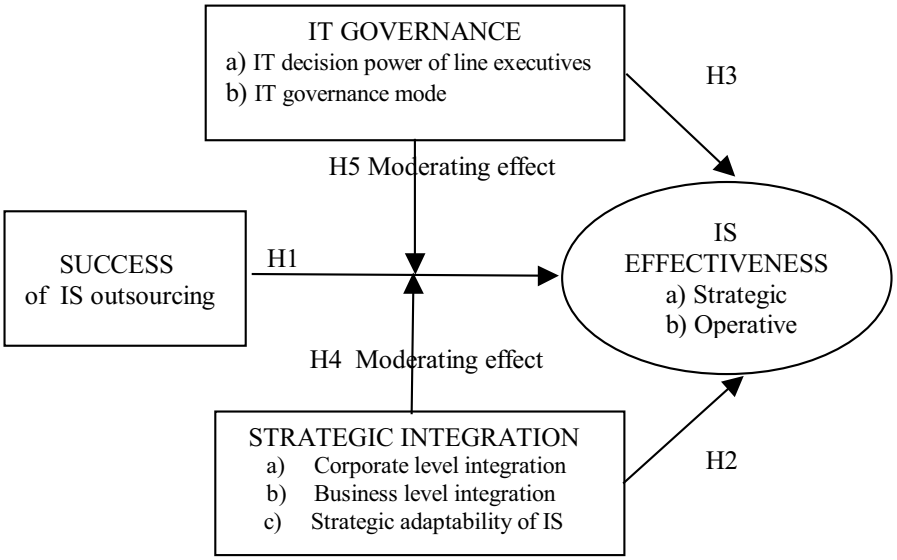


Figure 1: Research Framework

Two boxes in the middle of the picture describe the interacting variables, strategic integration and IT decision power of line executives. The left box is the measure of outsourcing. It was approximated on one hand by the profile of IS outsourcing according to the number services outsourced, and on the other hand by a measure

of the success of IS outsourcing. Our basic assumption was that the success of IS outsourcing should be an important contributor of IS effectiveness. Hypothesis H1 simply indicates that in order for IS outsourcing to be a real strategic issue in large companies, it should be positively related to IS effectiveness at the business level.

Hypothesis H2 requires that the basic arguments of the strategic alignment model will also work in the data set used for the analyses. We assume, that our integration measures are positively related to IS effectiveness.

In order to be supported, hypothesis H3 will require that only sufficient IT decision power of the line executives will lead to effective usage of IT, creating business value.

The assumption behind hypothesis H4 was that there is a moderating (synergetic) interaction between the integration measures and the outsourcing success. This is based on the idea that high communication intensity and capable executives responsible of IT will also help in getting IS outsourcing to work well. If managed well and in harmony, the corporate business and IT strategies should lay ground for well coordinated IS outsourcing. Therefore, successful IS outsourcing and high integration together should contribute in a synergetic (moderating) way to IS effectiveness (their product correlates with IS effectiveness better than any of these two measures alone).

The last hypothesis, H5, deals with the interplay between relevant allocations of the IT decision rights and successful IS outsourcing. We have assumed that regardless of what the factual IT governance mode is (organizational model), synergetic effects on IT business value are achieved only if the line executives have sufficient factual IT decision power and if the IS outsourcing is successful. This is based on the assumption that in all three IT governance modes (even in the centralized mode) sufficient IT decision power of the divisional executives is a precondition for getting business value at the divisional level. IT outsourcing may of course be technically successful without any strategic benefits. Hypothesis H5 assumes that success in IT outsourcing alone will not be sufficient for strategic IS effectiveness at the business level, instead also line executives' presence and decision rights are critical. Therefore, we propose that there is a synergetic relationship between these two factors regarding the strategic IS effectiveness.

3.2 Measurement of the Key Variables

Two different scales measured the degree of the outsourcing of IT. The respondents were asked to evaluate the extent of IS outsourcing in their business division by functions: ISD services, operations services, and support services. They were also asked to fill in their evaluation of the success of IS outsourcing. These original questions are shown in Table A. In addition, we had in our usage the CIO's estimates of the total cost of IT outsourcing and the percentage of the external (outsourced) IT costs from total IT costs at the company level.

IS effectiveness, the dependent variable of this research, was an aggregated construct of ten different effectiveness criteria found in the IS literature. The items covered effectiveness criteria from strategic to operational. These ten items formed two factors, called the strategic and the operative IS effectiveness. All the original questionnaire's statements, the statistics of the individual items, and the resulting factors are documented in Tables A, B and C.

The integration variables were measured by another 10-item instrument and decomposed into three factorial components (strategic and operative integration, and adaptability of IS). We modeled the degree of integration by statements mainly collected from Henderson and Venkatraman's (1993) paper. In the analyses we used Varimax-rotation that resulted in an interesting three-factor model (Table B). Two of the factors represented capability and communication based strategic integration measures, one (F1 INT-COR) at the corporate level, another (F3 (INT-BUS) at the operative business division level. These factors were based on the business executives' perceptions of their own IT capability and on the corporate IT executives' business capability. The last factor (F2) was IS application based, catching strategic characteristics (adaptability and responsiveness) of the important corporate IS. We named this factor as "Strategic adaptability of IS".

The last section of the survey instrument contained items for the IT governance measures. First, perceived sufficiency of the IT decision power of line executives was measured using four different decision areas: IT principles, IT infrastructure, business application use, and project management. These items loaded into one single factor. To be able to get a detailed view of the effects, we divided this factor into two artificial variables. One (DPCORP) measured the IT decision power at the corporate level and the other (DPBUSI) at the business division level.

In addition, our survey instrument included an overall measure indicating the degree of centralization of the IT decisions in the company. This was used only as a control variable to categorize the cases according to the three major governance modes mentioned earlier, namely the centralized, federal and decentralized modes.

3.3 Data Collection

We finalized our questionnaire including the measures described with a few important background variables of the corporate IT management arrangements. We pre-tested the questionnaire in a dozen of interviews with both CIOs and business executives from large companies to make sure that all questions were semantically precise and understandable. We mailed the final version to the business executives of the three largest business divisions of the 200 largest companies in Finland. The names and addresses of the executives were collected by phone calls to those companies, and we could therefore send the survey

instrument and a personal invitation to participate in the survey directly to the right persons in these companies.

4 Results

4.1 Responses

In one month we had responses from ca. 70 seventy senior business executives. Compared to the original set of 220 invitation letters the response rate was very satisfactory, ca. 32 percent. Altogether, we had data on 69 business divisions from 42 different companies. These companies represented well both the industrial and the size distributions of the 200 largest companies in Finland. The largest industries represented by the companies were manufacturing and retailing and we had several companies from energy, IT services, and building industries. The average revenue of the companies was about 600 million euros and the average number of employees was ca. 3800. From the overall IT costs of the company, on average 41 percent was used to various IT services that were outsourced.

4.2 IS Outsourcing in General

The most common services outsourced were Information Systems Development (ISD) and support services. Interestingly, this ISD outsourcing variable had no correlation with the IS outsourcing success. Two other outsourcing variables (operations and support services) correlated significantly with outsourcing success. The distribution of success of the IS outsourcing variable was almost normal and therefore, we could use it in the following statistical analyses despite the fact that it was only a single item measure.

4.3 Testing the Base Relation H1

In Table 1 we have presented the correlation coefficients between IS outsourcing and other key variables contributing to IS effectiveness. The success of outsourcing seemed to correlate significantly with IS effectiveness. This supported our hypothesis H1. At the business division level, successful IS outsourcing was an important predictor of IS effectiveness, especially operative IS effectiveness (EFF-OPE correlation coefficient 0.772**).

The problematic nature of IS outsourcing was demonstrated by the fact that the overall degree of outsourcing (quantity based overall measure) as well as the relative share of the total IT costs did not correlate with IS effectiveness. IS

development services turned out to be most problematic, since the overall degree of outsourcing of ISD services was negatively related to IS effectiveness.

Table 1: Correlation Between Success of IS Outsourcing and Other Variables (N=62)

	Success of IS outsourcing	**Strategic IS effectiveness (EFF-STR)**	**Operative IS effectiveness (EFF-OPE)**
Degree of outsourcing			
1) ISD	-0.001	-0.056	-0.243
2) Operations	0.378**	0.081	0.121
3) Support services	0.395**	0.247**	0.184
Overall	0.252**	0.085	0.055
Strategic Integration			
INT-COR Corporate level	0.613**	0.417**	0.538**
INT-BUS Business level	0.636**	0.647**	0.605**
INT-ADA Adaptability of IS	0.499**	0.688**	0.540**
IT Decision Power			
DP-BUS Business level	0.410**	0.359**	0.278**
DP-COR Corporate level	0.330**	0.418**	0.358**
Overall	0.399**	0.429**	0.354**

4.4 Testing the Base Relations H2 and H3

The significant correlations between the integration measures and IS effectiveness in Table 1 assured that the data supported the underlying logic of the strategic alignment model. Strategic integration seemed to make sense in explaining IS effectiveness. Hypothesis H2 could be accepted without hesitation.

As we can see from the bottom part of Table 1, also the IT decision power measures correlated significantly with IS effectiveness, although less than the integration measures. We could accept also our hypothesis H3.

We also compared the means of IS effectiveness and IT decision power measures in three subsets of our data, according to the three IT governance modes specified. The mean values of IT decision power, strategic integration, and IS effectiveness were significantly lower in the case of the centralized IT governance mode compared to both the federal and decentralized alternatives. It became also clear that line executives working in companies with a centralized IT had less IT decision rights than their colleagues in the other two modes.

4.5 Testing the Moderating Relationship of Integration and Outsourcing Success (H4)

Our assumption behind H4 was that outsourcing success should have a moderating interplay with the integration measures. According to Grover et al. (see also Baron and Kenny 1986) a variable is a moderator if it is not correlated with the predictor (independent) variable and the interaction between the independent variable and the moderator (their product) is significant in a regression explaining the dependent variable. On the other hand, a variable is a mediator if it is significantly correlated with the independent variable (that has an effect on the dependent variable in a regression), the mediator variable affects the independent variable in a regression where both variables are present, and its effect reduces the independent variable's effect on the dependent variable.

The above conditions were checked by comparing the predicting power of two interacting variables in the regression models, where each variable was present one at a time. In our case the integration variables correlated significantly with outsourcing success and therefore, only a mediating relationship could be tested. The outcome of our tests concerning the interaction is presented in Figure 4, which is divided into two different tables according to the dependent variable: operative IS effectiveness (Table 2A) and strategic IS effectiveness (Table 2B).

Table 2A: Results of Testing Interactions of Predictors of Operative IS Effectiveness

Hypothesis (interacting variable)	**Regression of Success of IS Outs**	**Regression Of interacting variables**	**Type of observed interaction**
H4 Integration **(INT-COR)**	58,9 %	27,9 % (2,0 %)	Competitive relationship. Success of outsourcing is a strong mediator **(REJECT H4)**
H4 Integration **(INT-BUS)**	58,9 %	35,6 % (3,2 %)	Competitive relationship. Success of outsourcing is a strong mediator **(REJECT H4)**
H4 Adaptability **(INT-ADA)**	58,9 %	28,0 % (3,7 %)	Competitive relationship. Success of outsourcing is a strong mediator **(REJECT H4)**

As we can see from these figures both the success of IS outsourcing and the integration measures were significant but competing (mediating) predictors of IS effectiveness. The predicting power (R^2) of outsourcing varied between 35 and 59 percent, for integration measures between 16 and 46 percent. Interestingly, the

role of outsourcing success was much stronger in the regression for operative IS effectiveness. This indicated that IS outsourcing at the business level serves primarily operational benefits in separation from the internal integration of the corporate IT management.

Table 2B: Results of Testing Interactions of Predictors of Strategic IS Effectiveness

Hypothesis (interacting variable)	**Regression of success of IS outs.**	**Regression of the interacting variable**	**Type of observed interaction (and Outcome)**
H4 Integration at corporate level **(INT-COR)**	35,2 %	16,1 % (0 %)	Competitive relationship. Success of outsourcing is dominating **REJECT H4**
H4 Integration at business level **(INT-BUS)**	35,2 % (5,9 %)	42,4 %	Competitive relationship. Integration at business level is a strong mediator **REJECT H4**
H4 Adaptability of IS **(INT-ADA)**	35,2 % (7,4 %)	46,0 %	Competitive relationship. Adaptability of IS is a strong mediator **REJECT H4**

4.5.1 Operative IS Effectiveness

As we can see from Table 2A, just contra our hypothesis, the success of IS outsourcing mediated all three integration measures. The competition (mediation) effect between outsourcing and integration variables was quite clear. Outsourcing seemed to dominate the regression indicating, that success of IS outsourcing was more important predictor than internal integration between the business and IT managers.

4.5.2 Strategic IS Effectiveness

In the case of strategic effectiveness (Table 2B) the success of IS outsourcing was not such a strong dominating predictor alone as in the case of operative effectiveness above. The business level integration and the strategic adaptability of IS applications seemed really to be more significant predictors of effectiveness than success of outsourcing alone. However, also now the tested interactions were not synergetic but competitive, giving evidence against our assumption. However,

it is important to notice that success of outsourcing makes clearly much weaker contribution on strategic IS effectiveness than the integration based predictors.

In the earlier literature it has been proposed that flexibility of the IT infrastructure could be seen as a competitor of alignment, reducing the need for complex strategic alignment processes (Duncan 1995). Our result indicates that adaptability and flexibility of the key information systems are really important parts of the strategic integration as such.

On the basis of the above results we had to reject our hypothesis H4. It seemed that IS outsourcing was a complementary (operational) action at the business level, not contributing to the IT business value as much as the integration variables, especially the strategic adaptability of IS. Against our hypothesis, the success of outsourcing had no synergetic interaction with these strong strategic integration measures.

4.6 Testing the Relationship Between IT Decision Power and Outsourcing Success (H5)

Because of the high correlation between the IT decision power variables and the success of outsourcing, we could test only the mediating (competitive) and not the moderating interplay between these factors.

As we could see already from the correlation matrix in Table 1, the IT decision power measures appeared to be a lot weaker predictors of IS effectiveness than the success of IS outsourcing. For the overall IT decision power measure the regression with IS effectiveness was between 11 to 17 percent, clearly more in the case of strategic effectiveness. Again, these IT decision power variables seemed to be competitive, not interacting predictors compared to the success of IS outsourcing variable. In addition, the observed type of the interaction was only weak mediation, not moderation with the outsourcing. Therefore, we had to reject our hypothesis H5.

4.6.1 Evidence from the IT Governance Mode

The above observations indicated that line executives' IT decision power was in general only a weak predictor of IS effectiveness compared to the success of outsourcing and strategic integration based factors. In order to find out possible reasons for this, we divided the data according to the three governance modes, centralized, federal, and decentralized, using the overall degree of IT centralization as the criteria. By performing a multivariate analysis to test the co-effects of all predictors under consideration, we noticed that the IT governance mode had a significant co-effect with the overall integration on the operative IS effectiveness.

The above result means that the governance modes (centralized, federal and decentralized) were not symmetric. By comparing the averages of the effectiveness values we noticed that both the strategic and the operative effectiveness were significantly lower in the federal governance model than in the other two modes. This observation supports Sambamurthy and Zmud's theory of conflicting contingencies that may make the federal governance mode difficult just because of the conflicting contingency forces behind that mode. Therefore, one important reason behind the missing synergy between the success of IS outsourcing and IT decision power may origin from the large variance caused by the federal governance mode.

5 Conclusions

According to the current literature on IS outsourcing, there is no coherent theory explaining the impacts of IS outsourcing on IS effectiveness. Therefore, we proposed that IT governance could be an interesting approach to analyze the business value related impact of outsourcing in large companies. From the literature, we selected two different approaches to IT governance measures for our purpose. According to the theory of strategic alignment, high integration and good capability of IT and business executives should lead to better business value from IT. According to the recent IT governance theory, arrangements to distribute the formal IT decision rights between IT and business bodies determine the overall impact of IT on the business success. Our general assumption was that in order to contribute to real business value IS outsourcing should be in a synergetic relation with strategic integration and IT decision rights of the line executives.

Our analyses showed that IS outsourcing in large companies is an important single predictor of IS effectiveness, especially the operative effectiveness. The success of IS outsourcing turned out to be a significant and dominant contributor and predictor of the operative IS effectiveness, although it had no synergy with the selected IT governance measures. In the case of strategic IS effectiveness (the business value measure) the dominance of outsourcing success was not so clear. However, also in this case the outsourcing was a competing predictor of IT governance.

Our analyses provided evidence of the validity of the underlying arguments behind the strategic alignment model. Our results indicated that integration at the business level was a more significant contributor of the strategic IS effectiveness than integration at the corporate level, at least in large companies. Also, the new strategic integration measure determined empirically, the adaptability of the business IS turned out to be a more significant predictor of the strategic IS effectiveness than the success of outsourcing.

On the basis of the only weak synergetic co-effects found it seems that IS outsourcing in large companies is a complementary issue compared to the institutional mechanisms aiming at strategic alignment and integration. Possible reasons for the only weak synergy observed between outsourcing and IT governance measures may be found in too radical delegation of the decision power to business executives or too weak co-ordination mechanisms at the corporate level. Corrective actions might be achieved through handling IS outsourcing as a strategic question at both the corporate and the business levels, through better balance between the factual distribution of IT decision rights and capabilities, and through creation of more specific policies and standards for IS outsourcing in general.

Our results encourage future studies in defining the relevant measures for strategic integration. Knowledge of the effective practical procedures to integrate and coordinate outsourcing configurations at the corporate and business strategy levels should be conceptually and empirically studied. We encourage to continue doing case study comparisons of the practical IT governance arrangements, taking into account and finding new mechanisms to manage the problematic federal IT governance mode.

References

Agarwal, R. and Sambamurthy, V. (2002). Principles and models for Organizing The IT Function, MIS Quarterly Executive, Vol. 1 No. 1, March 2002, pp. 1-16.

Ang, S. and Straub, D.W. (1998). Production and Transaction Economies and IS Outsourcing: A Study of the U.S. Banking Industry, MIS Quarterly, December 1998, 535-552.

Broadbent, M., Weill, P., O'Brien, T. and Neo, B.S. (1996). Firm Context and Patterns of IT Infrastructure Capability. In Proceedings of the 17'th ICIS, 1996, 174 – 194.

Broadbent, M., and Weill, P. (1997), Management by Maxim: How Business and IT Managers Can Create IT Infrastructures, Sloan Management Review, Spring 1997, 77-92.

Cross, J., Earl, M.J. and Sampler, J.L. (1997). Transformation of the IT Function at British Petroleum, MIS Quarterly, December 1997, 401-423.

Davis, G. (2000). Information Systems Conceptual Foundations: Looking Backword and Forward, Chapter 5 in: (Baskerville, R., Stage, J., and DeGross, J., ed:s) Organizational and Special Perspectives on Information Technology, Kluiver, 2000, 61-82.

Desai, B. and Currie, W. (2003). Application Service Providers: A model in Evolution, 5th International Conference on Electronic Commerce (ICEC), Pittsburgh, PA Sept 30. - Oct 3. 2003, pp. 174-180.

Duncan, N.B. (1995). Capturing Flexibility of Information Technology Infrastructure: A Study of Resource Characteristics and their Measure. Journal of Management Information Systems, Fall 1995, Vol. 12, No. 2, 37–58.

Ekanayaka, Y., Currie, W. and Seltsikas, P. (2003). Evaluating application service providers, Benchmarking, 10, pp. 343-354.

Grover,V., Cheon, M.J. and Teng, J.T.C. (1996). The Effect of Service Quality and Partnership in the Outsourcing of Information Systems Functions, Journal of Management Information Systems, Spring 1996, Vol. 12, No. 4, 89-116.

Gurbaxani, V. and Whang, S. (1991). The Impact of Information Systems on Organizations and Markets. Communications of the ACM, 34, 1(1991), 59-73.

Henderson, J.C. and Venkatraman, N. (1993). Strategic alignment: Leveraging information technology for transforming organizations. IBM Systems Journal, 1993, Vol. 32, No. 1, 4 – 16.

Klepper, R. and Hartog, C. (1992). Some Determinants of MIS Outsourcing Behaviour, in: Korewaar, P., Ooninex, J., and Ribbers, P. (ed:s), Handbook of Bestuurlijke Informatiekunde, The Netherlands: Samson, 1992.

Lacity, M. and Hirschheim, R. (1993). The Information Systems Outsourcing bandwagon, Sloan Management Review, 34, 4(1993), 73-86.

Lacity M.C. and Willcocks, L.P. (1998). An Empirical Investigation of Information Technology Sourcing Practices: Lessons from Experience, MIS Quarterly, September 1998, 363-408.

Loh, L. and Venkatraman, N. (1992). An Empirical Study of Information Technology Outsourcing: Benefits, Risks and Performance Implications, 277-288.

Mizoras, A. and Goepfert, J. (2003). 2003 AppSourcing Taxonomy and Research Guide, IDC – Industry Developments and Models, Feb. 2003, IDC No. 28473.

McFarlan, F.W. and Nolan, R.L. (1995). How to manage an IT Outsourcing Alliance, Sloan Management Review (Winter 1996), 9-23.

Peppard, J. (1999). Information management in the global enterprise: an organizational framework, European Journal of Information Systems, Vol. 8, 77-94.

Pinnington, A., and Woolcock, P. (1997). The role of vendor companies in IS/IT outsourcing, International Journal of Information Management, Vol 17, pp 199-210.

Sambamurthy, V. and Zmud, R.W. (1999). Arrangements for Information Technology Governance: A Theory of Multiple Contingenies, MIS Quarterly, Vol. 23, No. 2, pp. 261-290.

Sääksjärvi, M., Lassila, A., and Nordström, H. (2005). Evaluating the Software As a Service Business Model: From CPU Time-Sharing to Online Innovation Sharing, in: (Isaias, Kommers, and McPherson eds.): Proceedings of the IADIS International Conference on e-Society 2005, Malta, pp.177-186.

Sääksjärvi M. (2002). Success of Outsourcing and Strategic Alignment as Predictors of IS Effectiveness, in: Information Systems Outsourcing in the New Economy, R.Hirschheim, A.Heinzl and J.Dibbern (eds.), Springer Verlag, 2002, pp.311-326.

Sääksjärvi, M. (2000) The Roles of Corporate IT Infrastructure and Their Impact on IS Effectiveness, in: Proceedings of the 8th European Conference on Information Systems ECIS'2000, Hansen, Bichler and Mahler (eds.), pp. 421-428.

Sääksjärvi, M. (1998). Product Platform and IT Infrastructure in Strategic Management of IT, in: S.Urban and C.Nanopoulos (ed:s), Information and Management, Utilization of Technology- Structural and Cultural Impact, Gabler 1998, 63-79

Teng, J.T.C., Cheon, M.J. and Grover, V. (1996). Decisions to Outsource Information Systems Functions: Testing a Strategy-Theoretic Discrepancy Model, Decision Sciences, Vol. 26, No. 1, 75-103.

Walsh, K. R. (2003) Analyzing the Application ASP Concept: Technologies, Economies, and Strategies, Communications of the ACM, Aug. 2003, Vol. 46, No. 8.

Weill, P. (2004). Don't Just Lead, Govern: How Top-Performing Firms Govern IT, CISR Working Paper No. 341, 2004.

Weill, P and Broadbent, M. (1998). Leveraging the New Infrastructure, How Market Leaders Capitalize on Information Technology, Harvard Business School Press 1998.

Willcocks, L.P. and Kern, T. (1998). IT outsourcing as strategic partnering: the case of the UK Inland Revenue, European Journal of Information Systems, Vol. 7, 29-45.

Appendix

Table A: Original Survey Questions

A. Variables Describing Degree of Functional Outsourcing

Scale: 1 = Strongly disagree; 2 = Disagree; 3 = Somewhat disagree; 4 = Neutral, 5 = Somewhat agree; 6 = Agree; 7 = Strongly agree.

ISD-01 (ISD outsourcing): The business unit I am responsible for has outsourced (acquires outside of the company) a significant share of IS development services

OPE-02 (Operations outsourcing): The business unit I am responsible for has outsourced (acquires outside of the company) a significant share of Computer operations services

SUP-03 (Support services outsourcing): The business unit I am responsible for has outsourced (acquires outside of the company) a significant share of End-user support and training services

(SUCCES) Success of outsourcing: The business unit I am responsible for has succeeded well (according to our expectations) in outsourcing of IS services

B. Variables Measuring IS Effectiveness

EFF-01 The corporate IS function supports well the strategic objectives of our company

EFF-02 IS of my business division enable new and competitive business opportunities

EFF-03 IS of my business division produce relevant management information

EFF-04 IS of my business division have improved productivity

EFF-05 Transactional IS of my business division operate smoothly and safely enough

EFF-06 IS personnel of my business division has sufficient professional skills

EFF-07 Information technology (hardware) of my business division is relevant

EFF-08 IT costs of my business division are feasible compared to benefits

EFF-09 My business division and the corporate IS are working well together

EFF-10 IT management of my business division is effective enough

Table B Factorial Analysis of Integration

FACTOR				Factor loading	Eigenvalue	Item Correlation with Total Score
F1. Corporate level integration (INT-COR)					**4.715**	
	N	Mean	Std. Dev			
INT-02	68	4.500	1.377	0.602		0.670**
INT-03	68	4.794	1.492	0.905		0.854**
INT-05	68	5.029	1.293	0.575		0.754**
INT-08	68	4.588	1.427	0.806		0.828**
F2. Adaptability of IS (INT-ADA)					**1.485**	
INT- 01	68	5.179	1.507	0.801		0.786**
INT- 06	68	4.588	1.385	0.860		0.899**
INT-10	68	4.059	1.303	0.767		0.840**
F3. Business level integration (INT-BUS)					**1.082**	
INT-04	68	4.515	1.252	0.558		0.829**
INT-07	68	4.735	1.154	0.856		0.743**
INT-09	68	4.343	1.503	0.701		0.889**

** Correlation is significant at the 0.01 level

Table C Factorial Analysis of IS Effectiveness

FACTOR				Factor loading	Eigenvalue	Item Correlation with Total Score
F1. Operative IS Effectiveness (EFF-OPE)					**4.876**	
	N	Mean	Std. Dev			
EFF-05	68	5.000	1.593	0.704		0.794**
EFF-06	68	5.239	1.129	0.789		0.784**
EFF-08	68	4.866	1.476	0.733		0.715**
EFF-09	68	4.897	1.271	0.699		0.797**
EFF-10	68	4.761	1.394	0.759		0.835**
F2. Strategic IS Effectiveness (EFF-STR)					**1.244**	
EFF-01	68	4.794	1.333	0.651		0.793**
EFF-02	68	4.838	1.472	0.774		0.803**
EFF-04	68	5.382	1.234	0.825		0.811**

** Correlation is significant at the 0.01 level

Four Stories of Information Systems Insourcing

Rudy Hirschheim

E. J. Ourso College of Business, Louisiana State University, Baton Rouge, LA. 70803

Mary C. Lacity

School of Business Administration, University of Missouri-St Louis, St. Louis, MO 63121-4499

1 Introduction

Senior executives and IS managers are questioning whether information services can be delivered more efficiently, and in particular, at lower cost (Henderson, 1990; Jarvenpaa and Ives, 1991; Feeny *et al.* 1992; Applegate and Elam, 1992; Kambil *et al.* 1993; Rockart *et al.* 1996; Chan *et al*. 1997; Sambamurthy and Zmud, 1999; Enns and Huff, 2000). No doubt the Kodak outsourcing "success" story has help triggerr this growth of interest (Loh and Venkatraman, 1992). In 1989, Kodak turned over the bulk of its IS operations to three outsourcing "partners". This event signaled an important change had occurred in the "sourcing" of IS activity and led to numerous other Fortune 500 companies jumping on the outsourcing bandwagon (Lacity and Hirschheim, 1993a).

IS outsourcing is of interest today because of the dramatic change in the decision domain. Although outsourcing has been an option since the dawn of data processing, the IS services market during the 1950s through the mid 1980s primarily offerred single-function contracts comprising a small portion of the customer's IS budget. Thus, most Fortune 500 companies built large internal IS departments, using the IS services market only for select IS activities, such as payroll, contract programmers, management consultants, or development of a particular application.

Today, sourcing options are much more varied and involve larger portions of the IS budget. While some companies still follow the traditional model of exclusive use of internal IS functions, other companies have opted to sign long-term, multi-million, even multi-billion dollar outsourcing contracts with external providers. Example of such high profile deals include: Bank di Roma, Bank One, Boening, British Aerospace, British Petroleum, Canada Post, Commonweath Bank of

Australia, Continental Airlines, Dupont, Enron, General Dynamics, General Motors, Inland Revue, JP Morgan, KF Group, McDonnell Douglas, South Australian Government, Swiss Bank, Telstra, Westchester County and Xerox. In addition, a host of control mechanisms has evolved to govern these sourcing options; companies establish IS departments as separate companies, sign joint ventures with outsourcing vendors, contract-out entire IS functions for a fixed or variable monthly fee, engage strategic partners to share IS risks and rewards, and 'rent' applications from the new application service provider (ASP) market.

Reflecting practice, academic research in the area of IS outsourcing is also florishing (*cf*. Ang and Straub, 1998; Aubert *et al*. 1996; Chaudhury *et al*. 1995; Cheon *et al*. 1995; Currie, 1998; Elitzer and Wensley, 1997; Fowler and Jeffs, 1998; Grover *et al*. 1996; Hu *et al.* 1997; Klepper, 1995; Lacity and Willcocks, 1998; Lee and Kim, 1999; McLellan *et al*. 1995; Nam *et al*. 1996; Poppo and Zenger, 1998; Slaughter and Ang, 1996; Teng *et al*. 1995; Willcocks and Kern, 1998). A conclusion consistent across much of this research stream is that organizations *can* cut IS costs by outsourcing, and often do obtain these savings.

However, Lacity and Hirschheim (1993b) criticize the position that outsourcing should be the preferred vehicle for reducing IS costs. The authors suggest there is often little that an outside vendor can provide (regarding cost savings) that can not be provided internally. If this is accurate, practitioners should question the value of outsourcing, considering instead whether cost savings can be obtained through insourcing. This unexplored "insourcing" option provided the motivation behind our research: to investigate organizations that chose insourcing over outsourcing. We conducted fourteen insourcing case studies to research this issue. The experiences of case study participants are examined and analyzed. The resulting picture is a rich and varied one involving a number of key decision makers, alternative reasons for choosing insourcing, contrasting outcomes, and varying perceptions of its success or failure. But we also identified a number of common experiences. To explore these differences and similarities across the cases, we use a rhetorical vehicle - namely the concept of the *story*. The story device allows us to penetrate beneath the surface structure to describe what we found in terms of five story elements: conflict, plot, protagonist, antagonist, and motto. The patterns which were found form the basis of what we now term the *four stories of information systems insourcing.*

The paper proceeds as follows. First, we describe the two phased research project which looked at IS sourcing. Phase one focused on the outsourcing evaluation process. Phase two, looked at organizations who implemented insourcing choices. Second, we present four archetypes in the form of stories which describe the four basic approaches organizations appear to take in choosing and implementing insourcing. Third, we offer three themes or "morals' which emerge from an analysis of the four stories. These themes reflect the difficulty associated with ascertaining the "success" of insourcing. In particular, success is dependent upon

particular stakeholder perspectives. This is elaborated on in the Conclusions of the paper.

2 Sourcing Definitions

Although the term outsourcing is widely used in the literature, there is a need to clarify what we mean by its use. In doing so, we adopt the broader notion of "sourcing" which refers to: (1) who is it that provides the IS services; (2) what IS services are provided; and (3) where these services are provided. When one speaks of "sourcing", three variations are possible. *IS outsourcing* refers to the third party management of IS assets, people and/or activities required to meet pre-specified performance levels of defined services either on-site or remotely. We use the term *outsourcing* to refer to those organizations that decide to outsource at least 80 percent of their IS budgets to third party providers. *Insourcing*, on the other hand, refers to organizations that formally evaluate outsourcing but select their internal IS departments' bid over external vendor bids, thus keeping over 80% of the IS budget provided by the internal IS department[1]. *Selective sourcing* refers to organizations that opt to use third party vendors for certain IS functions which represents between 20-60% of the IS budget (typically around 40%) while still retaining a substantial internal IS department. (This is consistent with the studies done by Fitzgerald and Willcocks (1994) which show that selective sourcing usually takes up between 30 to 40% of the formal IS budget.)

3 Research Design

The purpose of the research was to develop an in-depth understanding of the organizational IS sourcing decision making process. This includes the nature of the evaluation process - what lies behind how an organization makes an IS sourcing decision; the reasons why the decision was made; who was involved in the process; and what the effects of the decision(s) were. In order to develop such an in-depth understanding, we felt it necessary to adopt a multiple case study approach. This approach was deemed appropriate given the fact that: (1) it was not possible to tightly control the research variables nor for the interactions between them; (2) events were often currently unfolding that shaped the overall outcome of

[1] Included in our definition of insourcing is the buying-in of vendor resources to meet a temporary resource need, such as the need for programmers in the latter stages of a new development project or the use of management consultants to facilitate a strategic planning process. In these cases, the customer retains responsibility for the delivery of IS services-vendor resources are brought in to supplement internally-managed teams.

the sourcing decision; (3) different stakeholders likely had different agendas which were played out during the course of the sourcing evaluation process; (4) historical antecedents needed to be taken into account to appreciate the decision context; and (5) key actors were available to be interviewed. Case studies also allowed us to explore different stakeholder perspectives on how their organizations made IS sourcing decisions as well as what they thought the resulting consequences were. The choice of the individual case studies was based on the notion of "theoretical sampling" (Glaser and Strauss, 1967; Applegate, 1994). This is where the researchers select a number of cases representing polar extremes that enable comparison across important aspects of the decision domain. The two domains we focused on were: (1) apparent financial outcome of the sourcing decision (cost savings achieved vs. no cost savings achieved); and (2) decision sponsor or champion (senior management or IS manager). While the reason for choosing the first domain is obvious, the second needs some elaboration. The primary sponsor of the decision was felt to be important because senior managers and IS managers have different agendas and perceptions of IS and IS's role within an organization. Specifically, senior managers seem to consider IS outsourcing as a way to reduce overall costs in the context of external pressures on profitability. IS is just one small piece of senior management's responsibility, and they appear to view IS as one homogenous, "commodity" function. In contrast, IS managers seem to focus on the IS sourcing decision in a less broader business context, but view IS as comprising vastly differentiated products and services.

3.1 Research Project

The research project commenced in January 1991 initially as an in-depth study on outsourcing evaluations. In the first phase of the project, which ended in December 1992, thirty-six senior executives, IS managers, and IS staff from fourteen companies were interviewed about the process and consequences of their outsourcing decisions (See Lacity and Hirschheim, 1993b). One lesson learned from the first phase was that outsourcing appeared to be a symptom of the IS managers' failure to demonstrate the value of IS within their respective organizations. Outsourcing was felt by senior management as the best way to overcome poor IS performance: it would lead to cost savings. Although vendors could (and did) reduce costs in a number of organizations studied, most of the policies that were used to drive down costs were simply that: strategies not technology advantages. Vendors were able to offer lower bids based on efficient management tactics rather than on economies of scale. This was inconsistent with the outsourcing literature which portrayed the vendor as possessing an intrinsic cost advantage, viz. economies of scale. Intrigued by these first cases, thirty additional participants were interviewed in 1993 and 1994 - one site was revisited and seven new case studies were conducted - to analyze companies who decided

to insource instead of outsource their IS. The second phase of the project focused on the following four research questions:

- Can an internal IS department replicate a vendor's strategy for reducing IS costs?
- If so, why has it not done so in the past?
- Does an IS department actually reduce costs after winning an insourcing bid?
- If so, how did IS achieve cost savings?

3.2 Data Collection

As implied above, the choice of the organizations asked to participate in the research project was not done randomly. The choice was typically made on the basis of pre-established contacts with targeted companies who had recently gone through an IS sourcing evaluation, and where this evaluation exercise was thought to be "interesting", i.e. where useful lessons could be learned. Thus, the case participants for the research were opportunistically selected. The fact that the cases were not randomly chosen was felt to be a strength of the research rather than a weakness. Pettigrew (1989), for example, suggests that cases should be treated as unique contexts; organizational decisions are assumed to be embedded in the history and social processes of the organization. Such a view stresses the importance of the temporal interconnections of the past, present, and future.

Pettigrew (1989) notes that multiple case studies are best characterized as "planned opportunism". For organizational researchers, he offers the following advice: (1) go for polar types; (2) go for high experience levels of the phenomena under study; and (3) increase the probabilities of negotiating access.

The first point - *go for polar types* - allows researchers to determine if processes are similar (or different) over a variety of situations. For this reason, companies that decided to maintain an internal IS department, as well as companies that decided to outsource were targeted for participation. Of the 21 case studies, 14 involved an insourcing choice to an outsourcing evaluation. Some of these insoucring decisions occurred after the firm had initially outsourced. Additionally, we chose *financial outcomes* and *sourcing champion or sponsor* as the polar types by which to target specific insourcing cases. Of the fourteen insourcing cases, eight achieved significant cost savings while six achieved no cost savings. Seven of the cases had senior management championing the sourcing decision; three were championed by the IS manager; and in four cases, there were two decsions: one sponsored by senior management, the other by IS.

The second point - *experience levels* - reflects the desire to undertake research in those companies who have considerable knowledge of the phenomena under

study. We chose companies who had valuable knowledge of and experience with evaluating outsourcing and insourcing, and were willing to share their experiences. The organizations studied had made their IS sourcing decisions at least one year prior to their participation in our study, with most having 4 to 5 years experience, and some in excess of 10 years.

His last point - *pick companies where access is likely* - is particularly applicable to research that requires interviews with senior management. Since senior executives often receive research requests each month, pre-established contacts were used to gain access. We generally used word-of-mouth and personal contact to find appropriate cases, and then used all means at our disposal to convince them to participate in our study. We also assured them of anonymity. This was particularly necessary in gaining access to those cases which could be considered 'failures', i.e. when the benefits hoped for were not achieved. In all, 21 organizations were asked to participate in the study, and 21 agreed.

Pettigrew (1989) notes: "The other critical practical consideration which stands alongside the choice of sites is how many sites? Again, there is no absolute answer to this question" (p. 276). In this research, we chose 21. The number reflects the amount of cases studies we could comfortably perform over a four year period.

The twenty-one companies represent a wide variety of industries, but in this paper we focus on only the 14 insourcing examples. Using *Fortune* magazine's taxonomy, participants are employed in the following industries: chemicals, commercial bank, diversified services, food products, petroleum refining, retail, and telecommunications (See Table 1). In order to facilitate the discussion, the companies will be referred to by pseudonyms based on their industry type: CHEM1, CHEM2, FOOD1, etc. The majority of the companies are characterized as large (in the *Fortune 500*). Of the fourteen companies, thirteen come from the USA, and one is based in Germany. Taken as a whole, the companies represent a variety of industries, venues, and sizes, although biased toward the US and large in size.

In addition to gaining access to the research sites, there was a need to obtain multiple stakeholder perceptions. We therefore interviewed people who approached the issue from the viewpoint of senior management, and people from an IS management perspective. While end users were not specifically interviewed, their perspectives were brought out during interviews with the other two stakeholder groups. There was a high level of consistency between these two groups.

Table 1: Case Study Profiles

COMPANY PSEUDONYM AND INDUSTRY	PARTICIPANTS	SOURCING DECISION(S) SCOPE	DECISION SPONSOR	DE-CISION YEAR	EVALUATION PROCESS	SIZE of COMPANY: ANNUAL REVENUES / ANNUAL IS BUDGET at TIME of DECISION	SIZE of IS: DATA CENTER MIPS at TIME of DE-CISION	SIZE: # IS HEAD COUNT	EXPECTED COST SAVINGS	COST SAVINGS ACHIEVED
1. CHEM1 Chemicals	1. Manager of IS 2. Manager of DP 3. Network Services Supervisor	Entire IS function insourced	IS Manager	1991	3 external bids	$5 billion/ $17 million	28 MIPS	60	No cost savings estimated	No cost savings achieved
2. DIVERSE1 Waste Management	4. Director of Advanced Technology	(a) Entire IS function insourced (b) Applications Development outsourced	(a) IS Manager (b) Senior Manager	(a) 1991 (b)1992	(a) no formal bid process (b) two external bids	$3 billion/ $30 million	135 MIPS	184	(a) No cost savings estimated (b) 20%	(a) No cost savings achieved (b) No, costs rose
3. PETRO1 Petroleum Refining	5. VP of IS 6. Director, Systems Coordination 7. Director, Tech Support 8. Director, World Wide Telecommunications	Entire IS function insourced	Senior Manager	1988	no formal bid process, approached by vendor	$35 billion/ $240 million	> 300 MIPS	1800	No cost savings estimated	No cost savings achieved
4. PETRO2 Petroleum Refining	9. Corporate Manager, Planning 10. Division Manager 11. Corporate Manager, Technology Development 12. Manager of Software Strategies 13. Manager of Corporate Computing	Entire IS function insourced	Senior Manager	1991	internal bid and 2 external bids	$10 billion/ $32 million	200	134	43%	Yes, achieved within 5 years
5. PETRO3 Petroleum Refining	14. Assistant Treasurer 15. Director of IS 16. Manager of Technical Support	Entire IS function insourced	IS Manager	1990	2 external bids	$3 billion/ $6 million	17	25	No cost savings estimated	No cost savings achieved

Table 1: Case Study Profiles (continued)

6. DIVERSE2 Natural Gas, and other services	17. Manager of IS 18. VP, Operations 19. Vendor Account Manager 20. VP of Computer Utility 21. Outsourcing Consultant	(a) Entire IS function insourced (b) Entire IS function outsourced	(a) IS manager (b) Senior Manager	(a)1988 (b)1988	(a) no formal bid process (b) 1 informal external bid	$6 billion/ $100 million	135	530	(a) 0% (b) 20%	(a)none (b)No, customer threatened to sue vendor
7. CHEM2 Chemicals	22. Manager of DP	(a) Entire IS function outsourced (b) Entire IS function insourced	(a) Senior Manager (b) IS manager	(a)1984 (b)1988	(a) 1 external bid (b) no formal bid process	$.7 billion/ $4 million	28	40	(a & b) Savings anticipated but not quantified	(a) No, terminated contract due to excess fees and poor service (b) savings achieved
8. RUBBER Rubber and Plastics	23. VP of IS	(a) Entire IS function outsourced (b) Entire IS function insourced	(a) Senior Manager (b) IS manager	(a)1987 (b)1991	(a) No formal bid process, 1 informal external bid (b) no formal bid process	$6 billion/ $240 million	>150	1,000	(a & b) Savings anticipated but not quantified	(a) No, costs rose to 4% of sales (b) Yes, costs fell to 1% of sales
9. RETAIL1 Apparel Manufacturer & Retailer	24. VP of IS 25. Director of IS Administration	Entire IS function insourced	IS Manager	1988	No formal bid process	$2 billion/ $27 million	56	125	54%	Yes, achieved within 4 years
10. UNIVERSITY	26. CIO 27. Interfaculty Council Member	Entire IS function insourced	Senior manager, then CIO	1992	Compare 1 external bid with 1 internal bid	$250 million budget/ $7 million IS	106	110	20%	Yes, achieved within 1 year
11. FOOD Food Manufacturer	28. Data Center Director	Entire IS function insourced	Senior Manager	1988	Compare 1 external bid with internal bid.	$7 billion/ $18 million	180	80	45%	Yes, achieved within 3 years

Table 1: Case Study Profiles (continued)

12. TCOM Telecommunications	29. Manager of IS 30. Internal Lawyer 31. Previous Manager of IS 32. Data Center Manager 33. Facilities Management Director 34. Chair, RFP Team 35. Chair, Internal Bid Team	Entire IS function insourced	Senior Manager	1991	Compare 2 external bids with internal bid	$.5 billion/ $7 million	32	39	46%	Yes, achieved within 2 years
13. ENERGY Energy Company	36. Director of IS Planning 37. CIO	Entire IS function insourced	Senior Manager	1989	Compare 3 external bids with internal bid	$6 billion $60 million	150	180	25%	Yes, achieved within 2 years
14. INTL-BANK International Bank	38. Executive VP 39. VP, EDP Control 40. Director, Applications Development 41. Director, Technology Development	Entire IS function insourced	Senior Manager	1989	Never really considered outsourcing	DM557 billion in assets	2,000	1800	20% cost savings through adoption of best practices	Yes

With regard to the insourcing cases, 41 participants at 14 companies were interviewed. Interviews were conducted using a non-directive technique that allowed subjects the freedom to focus on specific issues but permitted them the opportunity to expand on areas of personal interest. Subjects were encouraged to illustrate their story of the IS sourcing decision through 'critical incidents', i.e. episodes which were crucial in their view to shaping the decision and its ultimate outcome. (The resistance of a particular individual to supply required service levels, for example, might be a typical critical incident. And the way the resistance was resolved would almost certainly affect the sourcing outcome.) The IS sourcing decision is viewed as a series of episodes or encounters between information systems personnel, business unit managers, senior management, outsourcing consultants, and outsourcing vendors. The commitments made and the behaviors experienced through these encounters both shape and constrain the IS sourcing decision making process, and its outcome. More specifically, the interview protocol involved a flexible time format where most interviews spanned from thirty minutes to five hours with an average lasting one and one half hours. All interviews were conducted in person at the company site. Regardless of the length, interviews followed the same *modus operandi* which proceeded from an unstructured to a structured format. During the unstructured portion, participants were asked to tell their insourcing or outsourcing story. Additionally, during this unstructured portion, senior executives were asked to characterize their perceptions of IS while IS managers were asked to characterize their perceptions of how their senior executives, business unit managers, and users view IS. They were then asked how these perceptions were formulated. The unstructured format allowed the participants free reign to convey his or her interpretations. After participants completed their stories, they were asked to provide specific evidence to support their viewpoint. The evidence consisted of anecdotes as well as documentation such as benchmarking reports, IS budgets, and outsourcing bids. Participants were also asked specific questions about their company and IS department. Pertaining to their company, participants described the organizational structure, the major products and services produced, competition in their industry, financial situation, corporate goals, business successes and failures. Pertaining to IS, participants described the number of MIPs, headcount, budget, chargeback system, user satisfaction, challenges, goals, and reputation.

After they completed their stories, participants were asked semi-structured questions designed to solicit information on specific insourcing/outsourcing issues that may have been absent from their previous recollections. In addition, all participants were assured of anonymity and could elect to receive a copy of their individual case and a summary of the findings.

An organization's 'insourcing or outsourcing story' was 'cross-checked' by interviewing multiple individuals at each organization (where possible). In cases where there were differences in opinion between participants at the same organization, follow-up telephone calls were conducted with participants to clarify

their positions. However, these differences in perception were of interest in themselves. There was no attempt to find the "right" or "true" perception. Historical, contextual data in the form of memos, minutes of meetings, requests for proposals, outsourcing bids, insourcing bids, bid evaluation criteria, benchmarking reports, organizational charts, corporate annual reports, etc., were sought and obtained wherever possible. This provided further cross-checking.

3.3 Data Interpretation

The semi-structured interviews were tape recorded and transcribed into a 687 page single-spaced document. The transcribed text was analyzed using interpretive analysis, which borrows from the hermeneutic tradition. The particular form of interpretive analysis used was that of “intentional analysis” (Sanders, 1982). It prescribes four steps for helping researchers make sense of text data. In step one, *descriptions*, the researcher describes the "facts" of the phenomenon. "Facts" are socially shared realities agreed upon by all participants - such as outsourcing bids, timing of the decision, financial position of the firm, and bid analysis criteria. In step two, *intentions*, the researcher determines the way participants ascribe meaning to their reality by the way they perceive cause and effect. For example, one participant claimed benchmarking (cause) enables him to demonstrate improvement to senior management (effect): "You better be able to keep score and show how you are getting better every year." In step three, the researcher identifies *themes* - or invariants - that emerge from the text. These patterns may be used to develop common interpretations for a whole class of phenomena. For example, one theme that consistently arose among the cases was that senior management set IS strategy as cost efficiency while users set IS strategy as service excellence. In step four, the researcher abstracts the *essences* from the text. Essences are wholly subjective gestalts of the lessons learned from studying the phenomenon. The abstraction of essences requires creativity, intuition, and reflection. Here, the unit of analysis transcends the actual study to make insightful comments for academics and practitioners. The researcher no longer asks, "What do the participants think about the phenomenon, but rather, what do I think? What lessons have I learned about the phenomenon?"

3.4 Research Validity

The research methodology is a qualitative, interpretive one. The gathering, analysis and interpretation of the data in this research borrows much from the hermeneutic tradition which treats the world as a script. The interpretation was the researchers' attempt at "making sense" of what is ostensibly an alien script: the world of the individual interviewed. The hermeneutic task for us was to make sense in our language of the meanings expressed by the interviewees in their language by applying the precepts of a scientific theory from outside the

interviewees' horizons of meanings. This two-way connection between ordinary and scientific language is known as the "double hermeneutic" (Bleicher, 1982). The first hermeneutic has to do with the fact that all observational statements are "theory impregnated" (even in the natural sciences). The second hermeneutic arises because theories in the social sciences involve a "pre-interpreted" world of lay persons' meanings (in their ordinary language). There is a direct and on-going relationship between the language of social science and ordinary language. The former shapes the latter, while concomitantly, the latter shapes the former (Giddens, 1976). (It should be noted that the methodological justification for using interpretive methods rests on accepting the notion that research in the human sciences (Polkinghorne, 1983) has to wrestle with the double hermeneutic that is largely ignored in the positivist conception of the scientific method.)

Because of the interpretive nature of our work, no claims are made that our analysis of the text data will lead to the production of "theory" in the conventional sense. Instead, what is hoped for is a more interpretive knowledge that produces a better understanding of the IS sourcing process, evaluation and outcomes. The validity of our analysis rests on the self-validation of those insights which are communicated clearly and completely to the reader. If what is communicated adds meaning to the reader, then knowledge has been gained. This implies our results must be believable, they must be intelligible, and they need to add insight[2]. According to Astley (1985, p 498):

> "Discovering truth is really a matter of creatively incorporating events into theories to make sense of them. Administrative science is essentially an interpretative exercise, a sense-making activity in which truth is defined by the rules of intelligibility embodied in theoretical schemata."

Daft may have articulated this best when he wrote:

> "Ultimate proof of an idea or theory is its acceptability to common sense. An important test of validity is liking an idea, feeling right about it, being able to use it to throw light on a previously hidden aspect of organization. Objective proof seldom will exist somewhere outside one's self that will demonstrate correctiveness or

[2] According to Hirschheim and Klein (2000) an objective evaluation of any research would embrace three aspects: intelligibility, novelty and believability. *Intelligibility* relates to the question how well the research approach and results are comprehensible, i.e. how closely others can follow them with similar qualifications. *Novelty* relates to: (i) the amount of new insight added; (ii) the significance of the research reported in terms of the implications it has for seeing important matters in a new light and/or provide a new way of thinking about the phenomenon under study; and (iii) the coherence of the research, i.e. can the author provide an overall picture such that its components link up to each other without major holes in the picture that is being painted? *Believability* relates to how well the research arguments make sense in light of our total knowledge.

> validity. No statistical test will do this for us; no amount of replication will make acceptable an idea that does not square with experience" (Daft, 1983, p. 543).

In the discussion of our results, we have used actual quotes from the participants to highlight the salient details of their experiences. We are keenly aware that presenting verbatim extracts of subjects' comments is obviously selective, but it does allow the reader to examine the subjects' perceptions of the phenomena directly. We selected a variety of extracts from multiple actors from the individual cases. Selective extracts, in the form of verbatim fragments from the interviews, are provided as empirical examples describing sourcing decision making behaviors and outcomes. These extracts were specifically chosen as they were felt to vividly portray critical aspects of the insourcing decision making process and/or its outcome.

4 Four Stories of Insourcing

The issues associated with the choice of an IS sourcing strategy are often murky, hidden behind euphemisms, perceived differently by different stakeholder groups, and generally not easily analyzed. In trying to explain what we found in our research about these issues we sought a simplifying vehicle to help develop and articulate our ideas. Such a vehicle was found in the notion of 'stories'. Each story is an interpretation of a partially overlapping pool of attitudes, perceptions, and behaviors about IS sourcing. These pools are organized around specific core assumptions and beliefs which apparently are neither commonly recognized nor systematically confronted with one another. The story technique is used to condense and simplify the exposition of a complex subject matter. The story technique has been used in a variety of contexts to describe issues with positive results (*cf.* Novak, 1975; Westerlund and Sjostrand, 1979; and Mitroff, 1983). It was thus chosen as the vehicle for developing and explaining the alternative ways organizations approach IS insourcing.

In the following, we describe four alternative approaches organizations embrace when insourcing. These are described in terms of 'stories'. It should be noted that these approaches, depicted through the stories, are not as clear cut nor as animated as they seem. There is overlap and their differences are overstated for the purpose of effect. They are, in fact, archetypes: highly simplified but powerful conceptions of an ideal or character type (Mitroff, 1983; Morgan, 1986). These ideal types do not exist as 'real' entities, rather it is their properties which are exhibited (to a greater or lesser degree) in existing entities which give the archetype meaning. The archetypes reflected in the stories play an important role in conveying the essential differences which exist in alternative conceptions of, and approaches to, information systems insourcing.

It must be mentioned that we do not use the story mechanism as an analytical tool (i.e. a way to analyze the data), but rather as a rhetorical device to convey the themes or essences extracted from our analysis of the textual data collected in the case studies. These essences, or themes, were clustered among four distinctive patterns found across the fourteen cases. They were not *a priori* constructs but emergent themes surfacing through our interpretation of the data.

Table 2 depicts the four insourcing archetypes or stories as we discuss them. They are characterized by two decision domains - financial outcomes and the primary champion of the insourcing decision. In the former, significant IS cost savings were either achieved or not achieved. In the latter, either senior management or IS management drove the insourcing decision making process. The mapping of these two decision domains yields four quadrants, i.e. the four stories.

We discuss each story in terms of five features: *conflict* - what factors led to the need to consider the IS sourcing evaluation; *plot* - how the story unfolded; *protagonists* - who were the leaders in favor of the decision process; *antagonists* - who were largely against the decision process; and *motto* - what was the primary message carried by the protagonists.

Table 2: Insourcing Archetypes

Sponsor / ***Financial Outcomes***	**Senior Managers Sponsor Insourcing Decision**	**IS Managers Sponsor Insourcing Decision**
Significant Reduction in IS Costs	**STORY I** *Senior managers enable IS managers to reduce costs, typically by creating an RFP and inviting both internal and external bids.* PETRO2 UNIVERSITY FOOD TCOM ENERGY RETAIL1	**STORY II** *IS managers terminate failing outsourcing contracts. These outsourcing experiences were so disastrous that no formal evaluation process was needed to confirm the termination decision.* CHEM2 RUBBER
No Change in IS Costs	**STORY IV** *Senior managers confirm the value of IS without a formal bid process because their support and faith in IS is traditionally strong.* INTL-BANK PETRO1	**STORY III** *IS managers defend insourcing. Even apparently "rigorous" evaluations were perceived as biased against outsourcing.* CHEM1 DIVERSE1 PETRO3 DIVERSE2

4.1 Story I – Senior Executives Enable Internal IS Managers To Cut Costs

Conflict	*Organization against nature: external pressures to reduce costs*
Plot	*Senior executives select insourcing over outsourcing after a formal evaluation process*
Protagonist	*Senior management*
Antagonist	*Users and IS managers*
Motto	*Just give IS managers a level playing field and they can compete*

Narrative: This story begins when external pressures threaten the organization, causing senior management to search for ways to reduce costs. Increased competition from global sources, pressure from stockholders for higher rates of return, and the world-wide recession all lead management to consider various options for cost-cutting. IS is no exception. Under such scrutiny, senior executives question the value of rising IS expenditures and mandate that IS managers cut costs. Historically, IS costs have continued to rise while other functions costs have often stayed the same or declined. IS managers claim that their costs increase simply because their workload rises as more and more organizational functions and tasks are computerized, shifting costs from various business units to the IS department. Additionally, IS managers note that the costs are high because users resist proposed cost reduction tactics such as data center consolidation, chargeback routines, standardized hardware/software platforms, and reduced support levels. Senior management despairs at the inability of IS to reduce costs, and formally invite outsourcing vendors to submit bids. Often, these vendors have already approached senior management with the message that they have certain inherent advantages which allow them to supply services at a price less than that possible by the internal IS organization. IS managers rally, requesting they be allowed to compete with vendor bids. They argue that senior management's outsourcing threat serves to empower IS managers because they can convince users that IS costs will be cut - either by them or by an external vendor. Because IS is allowed to prepare a competing bid to the outsourcers' bids, rather than simply allowing the outsourcers to compete against the status quo, IS is empowered to implement cost saving measures. By replicating a vendor's cost reduction tactics, internal IS managers prepare internal bids that are the equivalent to, or better than, the vendor bids. As the internal bid is judged superior to the outside bids, senior management awards the bid to the IS department. The internal IS managers then proceed to implement their cost reduction strategies and succeed in meeting their bid proposals, resulting in cost savings of 20% to 54%. Six of our

cases - PETRO2, UNIVERSITY, FOOD, TCOM, ENERGY, and RETAIL1 - portray versions of this story.

PETRO2. PETRO2 - a Fortune 100 conglomerate of petroleum, natural gas, and chemicals companies - ran into severe financial difficulties in the late 1980s. Senior management responded by cutting costs through the sale of assets, reduced headcount, and budget cuts. In this climate, senior management began to scrutinize the rising costs of IS - where was the value from these IS expenditures? The corporate manager of IS planning explains:

> "All they (senior management) see is this amount of money that they have to write a check for every year. Year after year after year. Where is the benefit? MIS says, 'Well, we process data faster than we did last year.' They say, 'So what?' MIS says, 'Well, we can close the ledger faster.' And they say, 'So what? Where have you increased revenue? All you do is increase costs, year after year after year and I am sick of it. All I get are these esoteric benefits and a bunch of baloney on how much technology has advanced. Show me where you put one more dollar on the income statement.'" -Corporate Manager of IS Planning, PETRO2

Internal IS managers repeatedly tried to reduce costs by consolidating their three data centers, but business unit managers refused, perceiving that the new consolidated center would not effectively cater to their needs. For example, one of the business unit leaders declared:

> "If it cost $5 million more dollars to have this in my business unit and be able to control it and make it responsive to my needs it's worth $5 million dollars to me."-Division Manager, PETRO2

Only after senior management initiated an outsourcing evaluation did IS managers convince senior managers and users that they could match a vendor's offer:

> "The IS management said that there is no reason we should be excluded from the party. You cannot assume, it's not fair to say that we'll just do what we've been doing. We ought to have the same freedom to make decisions that outsourcers are making. So IS management in each of the divisions caucused. We put together a team."-Corporate Manager of Technology, PETRO2

This team prepared an internal bid based on severe cost reductions, including data center consolidation. This bid beat two external bids. The internal IS department was awarded the bid and subsequently consolidated the data centers, installed automation in the tape libraries, re-organized the work flows, standardized software, and instituted a new chargeback system that curtailed excessive user demands. These tactics reduced headcount by 51 percent resulting in a 43 percent cost reduction, thus deeming the insourcing project a financial success. The corporate manager of technology development attributes the success to senior management's empowerment of the IS staff:

> "This is critical: this is the first time someone handed an MIS guy a stick. In the past, if a company came in and said, 'I want this new piece of software, I need it.' Bingo, we went out and bought it. That doesn't happen anymore. In fact the opposite happens. They couldn't just go buy something for their special needs, we wouldn't pay for it. "-Corporate Manager of Technology Development, PETRO2

UNIVERSITY. UNIVERSITY is a large state university with over 54,000 students. The majority of the funding for UNIVERSITY comes from the state government based on student headcounts. When student enrollments dropped 15% in 1992, the Board of Curators sought to reduce the UNIVERSITY's high overhead and administrative costs, including the costs of IS - a function they perceived as a mere utility:

> "The Board could care less about IS. They treated it like they treated the heat or electricity."-current CIO, UNIVERSITY

At the time, three IS managers ran three data centers on the main campus: one for administration, one for the hospital, and one for the central campus. Because of a lack of power, no one IS manager could implement cost saving strategies, such as data center consolidation. The Board of Curators decided to outsource the three data centers to a vendor. They created a new CIO position to oversee the outsourcing transition. This CIO - a former VP of Sales for an outsourcing vendor - convinced the Board of Curators that he could match vendor bids by replicating their cost reduction strategies. Through departmental reorganizations, bundling hardware maintenance contracts, and tougher negotiations with software vendors, he reduced IS costs by 20%. An imminent physical consolidation of the data centers will reduce costs even further. In addition to the cost savings, the CIO has also helped bolster the view of IS by arguing that IS can be used to attract more students, increase research productivity, and reduce administrative costs through automation. As evidenced by recent reports to and from the Board, the curators are beginning to change their perceptions about the strategic potential of IS:

> "The University recognizes computer and information technology are strategic assets that are vital to the University's future. The University will develop computing and information technologies so within five years the University is recognized as a national leader in using computing to maximize higher education's instructional, research, and service missions."-Report of the University President's Advisory Committee, 1993

FOOD. FOOD, once a family-run business, has grown to a Fortune 500 manufacturer of human and animal food through a series of acquisitions and mergers. New senior managers now run the business, and have replaced the "family" culture with a hard-lined cost conscious style:

> "We sold some businesses in the early 1980s and we acquired two companies from the east coast. Prior to that, everyone talked of the FOOD family. It was a family-oriented business, very traditional, kind of big brotherly. Everybody liked

> everybody because you've been around forever. You've grown up together. When the companies came from the east coast, they didn't want to be here...It was a totally different environment."-Data Center Director, FOOD

The new senior executives perceived that IS expenditures were excessive. The internal IS managers previously tried but failed to reduce costs by getting the business units to agree on a standard set of software. Despite IS's efforts, each business unit insisted on their own operating systems, utilities, report generators, statistical packages, spreadsheet packages, etc. The cost allocation system exacerbated the problem by spreading software costs across the entire company. Thus, if a business unit leader requested a software package, he or she knew that the cost would be spread over *all* the business units, regardless of use. Although the users were happy with the service, senior management fretted over the cost and decided to outsource its large corporate data center. The data center director explains that incompatible goals triggered the outsourcing decision:

> "Over the years we had done a lot of things in the name of service excellence. And alot of extra costs had been incurred trying to be excellent. Excellence is redundancy, extra software, all of those, if you were in a company who valued IS like an airline reservation, those would have been excellence...So the real tragedy was the IS definition of excellence had nothing to do with [senior management's] definition of excellence. Had low cost, reliable service been my predecessor's definition of excellence, all this might not have happened.""-Data Center Director, FOOD

After receiving two external vendor bids, senior management agreed to allow the internal IS department to submit a bid that eliminated redundant software. Through that measure, along with proposals to eliminate redundant employees and services, the IS department submitted the low cost bid. Within three years, the internal IS department cut costs by forty-five percent, deeming this insourcing project a financial success.

TCOM. TCOM, a diversified telecommunications company, has enjoyed strong financial growth in revenues and profits for the past four years. In 1992, the regulatory commission eased restrictions, allowing TCOM management more latitude in merging functions across its business units. This motivated senior management to consolidate, and thus reduce, their overhead. When IS in the largest divisions came under scrutiny, senior management noted that IS costs were excessively high compared with other divisions:

> "As a line item in the budget, IS expenses were going up. We were constantly being challenged. We had a new business unit president who came in from the deregulated side of our business who really challenged us and pushed for an environment to really look at the cost of IS."-Data Center Manager, TCOM

The internal IS department was not cost competitive due to a strong labor union which promoted archaic and inefficient work practices, for example, by specifying

narrow job descriptions resulting in excessive manpower. Although IS management had tried on numerous occasions to negotiate better terms, the labor union resisted. Only after senior management initiated an outsourcing evaluation did the union acquiesce and agree to allow the internal IS department to include revised union rules in their internal bid. In effect, the union either had to succumb or risk losing everything. One of the union representatives expressed the following view: *"When you are in a frying pan you get creative".* The insourcing project wound up resulting in IS reducing headcount by forty-six percent. Since the insourcing decision, TCOM created a new role of CIO and recruited a high-profile outsider to fill the position. Since that time, senior management has offered more support of IS:

> "So the corporation is changing and I'm coming back to believe that IS is now viewed by senior management as still an expense from a standpoint that they'd like to get the expense down to a smaller percentage of revenue. But I think it's viewed as an asset, as a way to get where we want to go. That's different from two and a half years ago."-IS Staff Member, TCOM

ENERGY. ENERGY is one of the largest energy companies in the United States. Coupled with increased competition, ENERGY had found itself - during the latter part of the 1980s - in a period of severe financial constraints brought about by government regulations, high interest rates, and large debt. This financially weak position led management to consider ways to trim budgets in all areas of the business. IS was no exception. Outsourcing seemed to offer the potential for reducing IS costs and management initiated an evaluation. Part of the reason IS was targeted for consideration was that it was not favorable viewed by senior management. Because of its centralized structure, management perceived it as burdensome and bureaucratic. As the Director of IS Planning notes:

> "We've had some real tough decisions to make because quite honestly the IS organization didn't enjoy outstanding credibility in the company."-Director of IS Planning, ENERGY

Another reason why ENERGY's management had a negative view of IS was the way the operating companies were charged for IS services. They allocated costs based on the decision of an IS advisory board, but the allocation scheme was never clear to the operating units. Operating units were charged for services, but the rationale for the charging scheme was not articulated - users did not understand what IS activities were being measured and charged for. Such IS allocation schemes are prone to cause problems. The Director of IS Planning states:

> "The engineering folks burned lots of cycles, didn't store much on disks, maybe kept some things on tape. Didn't necessarily print a whole lot, at least not proportioned to the cycles they burned. They ... got one consolidated number and were getting hit with disproportionate bills. The customer folks were getting a free ride in a lot of cases, although they didn't think so."-Director of IS Planning, ENERGY

In allocation chargeback schemes such as this, user departments increasingly question what they are being charged for, and fight to have their portion of the allocation bill reduced. When the budgets of the operating companies were reduced, *"they'd come knocking on IS's door and say 'give me everything I asked for, in fact I'd like more but at a lower cost'."*- Director of IS Planning. Because IS costs were simply allocated and the user departments had no understanding of what they were paying for, there was little appreciation for IS. IS was simply viewed as an overhead, and as such, everyone wanted the costs to be reduced. The business units rallying cry was: *"[let's] ...get rid of that overhead."*

Outsourcing was thought to be a vehicle to do just that. In 1989, ENERGY initiated an outsourcing evaluation. Two external and one internal bids were received, the internal bid eventually won. The evaluation allowed IS to put together a proposal to reduce costs which it could not have implemented before. One policy they introduced was a meaningful chargeback scheme. This has significantly curtailed "frivolous" user requests. Additionally, IS has adopted standard hardware and software platforms. User departments are restricted as to what hardware and software they can buy. According to the Director of IS Planning:

> "...he [the CIO] is very seriously talking about owning the software on the desktop and telling people what they can run and what they can't run ... he's talking and nobody's greatly exercising; I'm sure a lot of people aren't very happy, but nobody's voicing any concern."-Director of IS Planning, ENERGY

While the actual cost savings were difficult to assess, management perceives that insourcing was the correct decision. With a reduced staff level, IS support for the business is higher now than ever before and the IS activities continue to grow at a significant rate. Specifically, IS headcount has been reduced by 25%, while the workload has increased by 25-30%.

RETAIL1. Unlike the previous five cases, RETAIL1's insourcing decision was initiated by the VP of MIS, rather than a senior level manager. But the circumstances surrounding the case still exemplify the major processes associated with this story.

In 1988, RETAIL1 - a shoe apparel manufacturer/retailer - was facing severe financial difficulties for several reasons. First, when Ronald Reagan let import quotas on foreign shoes expire, RETAIL1 could no longer compete with the cheap foreign labor. Second, cost-conscious consumers were decreasing their patronage to RETAIL1's retail stores located in covered malls in favor of factory outlets and discount stores. Senior management was calling for downsizing and cost cutting. The VP of MIS knew that he had to cut IS costs, but users were resisting his cost-cutting proposals. For example, users resisted the VP of MIS's proposal to consolidate the two corporate data centers, which were both located on the headquarters campus. When an outsourcing vendor began calling senior executives, the VP of MIS moved forward with his insourcing proposal:

> "My boss asked me to - he handed me this great big thing from one of the outsourcers - and wanted me to fill it out. It would take three months and no one on my staff would have been able to do it. It sat on my desk for a month or two. We did the insourcing project thing."-VP of MIS, RETAIL1

With the help of a benchmarking service, he identified cost-cuts that included data center consolidation, automation of consoles and tape libraries, and replacing printed reports with on-line report review. The insourcing project reduced costs by 54%, and is considered a financial success:

> "Within the three years, we became one of the most efficient MVS shops in the country for our size."-Director of MIS, RETAIL1.

4.2 Story II – IS Managers Terminate Failing Outsourcing Contracts

Conflict	*A poorly conceived, negotiated, and managed long-term outsourcing contract results in rising IS costs and declining service levels.*
Plot	*IS managers convince senior management that early termination of the outsourcing contract and a return to insourcing is the only solution*
Protagonist	*IS managers*
Antagonist	*Outsourcing Vendors*
Motto	*Once bitten, twice shy*

Narrative: This second story, like the first story, results in a financial insourcing success. But the route to success is very different compared to the previous story. In this story, senior managers previously outsourced over 80% of the IS budget to outside vendors and engaged in long-term contracts (typically 7 years). A few years into the contract, severe problems occurred. First, senior management found themselves paying excess fees for services they thought were covered in their outsourcing contracts. Second, they wound up receiving a level of IS service which was worse than before the contract (certainly less than they expected). Third, they had their best business talented IS personnel moved by the vendor to attract other accounts in the same industry (typically their competitors). Much of this disappointment can be traced back to an inadequate assessment and understanding of outsourcing by company management which resulted in poorly negotiated contracts. Because the outsourcing arrangements led to rising IS costs and declining service levels, senior IS managers assembled a case to terminate the outsourcing contract and rebuild the internal IS organization. Senior executives and users supported the IS managers' proposals. An internal IS organization is

populated, often with many of the same personnel who transitioned to the vendor originally. After an initial investment, IS costs drop and service levels improve as a result of insourcing. Here, the improvements come about not so much from the adoption of new and more efficient cost reduction practices, but rather the severing of a flawed customer-supplier relationship.

One might sensibly ask how companies could get themselves into such a predicament. The answer: very easily. Particularly in the 1980s, client organizations had virtually no experience with outsourcing or with negotiating outsourcing contracts. In such an environment, the outsourcing vendor had all the experience, and hence, the upper hand in contract negotiation. This led to one-sided arrangements. After the first few years, which are generally more favorable to the client, the true costs/problems become apparent, and the company wishes to terminate the contract. This proves difficult, expensive or both, especially given the penalty clauses in the contract associated with the premature termination of the contract. After this experience, almost any insourcing arrangement looks good. Two of our cases - CHEM2 and RUBBER - exemplify this story.

CHEM2b. Senior executives at CHEM2 decided to outsource the entire IS department in 1984 after a leveraged buyout left the company debt-ridden (Decision CHEM2a - see Table 1). After analyzing three vendor bids, senior executives signed a seven-year, fixed price contract with the only vendor they perceived as capable of handling their information needs. The contract stipulated that the vendor would provide the same level of service that CHEM2 received from the internal IS department in 1984. During the first month into the contract, the vendor charged CHEM2 for many services senior executives assumed were covered in the contract. Excess charges were not the only problem. The manager of data processing noted that the vendor's goal was to maximize profits, therefore, the vendor failed to introduce new technology (without a stiff excess fee), the vendor reduced staff and over-worked remaining employees, and the vendor siphoned the best talent to woo other customers:

> "I think you find with outsourcing that any innovation in technology comes from your own people, requirements from users on your staff. But basically the [outsourcing vendors] just crank it. And so we were operating old software...You pay for them to learn your business, then they move those people to court other companies in your industry. They transfer skills to get new business, now the learning curve is yours to pay for again."- Manager of DP

The manager of DP accumulated the evidence of rising IS costs and decreased service levels to convince senior management and users to terminate the contract. Senior management bought into the proposal, even though the vendor tried to keep the contract:

> "I opened up negotiations early, to re-negotiate the contract to get me out...It's like when you were a little kid. Two weeks before Christmas, you suddenly cleaned up your act and behaved a whole lot better...But I think they [senior management] had

> an awful lot of feedback from the users that they didn't like the systems. In other words, they were not supported in the manner that they needed to be supported to run the business. Also the issues of quality came up, customer service, no new technology."-Manager of DP, CHEM2

The manager of DP put together a plan to rebuild the internal IS department, which included purchasing an AS400 machine, buying packaged software, and hiring back 40 analyst programmers from the outsourcing vendor. After an initial investment, the IS manager conveyed that users are happier with the service and that his current IS budget is less than the fixed price contract, indicating a successful financial outcome.

RUBBERb. Senior executives at RUBBER decided to outsource the entire IS department because they perceived that their staff lacked the technical skills to migrate to a new IS platform. Reasoning that outsourcing vendors are experts, senior executives outsourced their entire IS department in 1987 (decision RUBBERa - see Table 1). But the migration failed because RUBBER's staff merely transferred to the vendor, resulting in no infusion of technical expertise. The senior IS manager at RUBBER attributes the failure as follows:

> "[The vendor] took over all the people as they usually do. So what happened in that environment is that the unqualified IS people that we had became our unqualified [vendor] people"-VP of IS, RUBBER

RUBBER incurred excess fees beyond the fixed-price contract to procure additional technical talent from the vendor. When IS costs actually rose to 4% of sales, the senior IS manager assembled a case to terminate the contract early and to bring the IS services back in-house. He presented a plan based on migrating the systems off the vendor's data center to a subsidiary's data center. Both the users and senior managers accepted his plan. Within two years, IS costs for RUBBER returned to 1% of sales, indicating a successful financial outcome.

4.3 Story III – IS Managers Defend Insourcing

Conflict	*IS managers feel threatened: by outsourcing vendors wooing senior management, by excessive user demands, or by other forces.*
Plot	*IS managers initiate cursory outsourcing investigations in hopes of eliminating this option from senior management's consideration.*
Protagonist	*IS managers*
Antagonists	*Senior managers and users*
Motto	*The best defense is a good offense*

Narrative: This is the first story in which insourcing results in a financial failure in that no cost savings - or service improvements - occurred. In this story, IS managers feel threatened by external forces, such as outsourcing vendors wooing senior management, or by internal forces, such as user complaints of poor service and senior management's complaints of high IS costs. They perceive a need to defend their turf by demonstrating that IS is performing well in terms of cost efficiency. The problem, however, is how to develop meaningful measures of IS efficiency. Often IS managers hire benchmarking consultants to assess the efficiency of their data centers. These consultants measure data processing costs per MIP, normalize the measures, and compare them with similar-sized IS departments. These efficiency audits are presented as unbiased because they are conducted by outside experts and because the organization is compared with other companies. But IS managers can tamper with a benchmarking effort by comparing their performance with average performers (instead of best of breed), by benchmarking only well-performing IS activities, or by selecting the population of users to respond to satisfaction questionnaires. Like these efficiency audits, outsourcing evaluations are meant to demonstrate IS efficiency by comparing internal IS costs with vendor bids. Hard numbers give the illusion of objectivity and therefore add credibility to their efficiency claims. But like benchmarks, outsourcing evaluations can be sabotaged. First, IS managers can select vendors to respond to a request-for-proposal with whom they know cannot compete due to size, inexperience in the industry, inexperience with the technology, etc. Second, IS managers can selectively pick functions that they feel the vendor cannot underbid. In other words, they can select one of their best-managed functions as a "candidate" for outsourcing while eliminating poorly-managed functions from the scope of the evaluation. But unlike benchmarking services which can cost up to $50,000, outsourcing evaluations are relatively inexpensive because outsourcing vendors usually submit bids free of charge. The only expense incurred is the opportunity costs of the managers' time. Through the outsourcing evaluation, IS managers hope to confirm to senior management the legitimacy of continued sourcing through the internal IS department. However, such thinly disguised political behavior can often backfire on the IS manager. If senior management sees through these cursory and/or biased evaluations, they are likely to take corrective action in the form of either eventually outsourcing anyway or firing the IS manager. Four of our cases exemplify this story: CHEM3, DIVERSE1, PETRO3, and DIVERSE2.

CHEM1. The IS manager and data center manager at CHEM1 initiated an outsourcing investigation in 1990. At the time, the IS manager was worried when he learned that users were by-passing the IS department to purchase PC-based solutions:

> "People that we had serviced and supported in the past weren't necessarily coming back to us for return business."-Manager of IS, CHEM1

In addition, the IS manager and the data center manager were worried that their impending request for a new CPU would be denied by senior management:

> "Recognize that in their minds [senior management's] computers are not strategic. So making investments in large computers or computer systems are not what they are comfortable doing."-Manager of IS

> "At the same time I was kind of building a base I guess to upgrade to a CPU with a five-year lease on it. That was my thought process at the time. While it was an outsourcing study, it was also designed to enhance my personal credibility when it came time to ask for bucks."-Data Center Manager

They solicited five bids from outsourcing vendors, three of which responded. Although one bid showed a seven percent savings, they decided not to pursue the outsourcing option:

> "I would call this a first cut evaluation. If these numbers had been 50% savings, that would have been cause to assign some people to make sure these numbers are accurate."-Data center manager, CHEM1

The IS manager presented the results to senior management in the first quarter of 1991. The immediate consequence was that the data center manager received the funding for a new CPU. However, there were no other changes implemented in terms of reduced costs or service improvements. Four months after our interviews, the IS manager was fired and replaced with a business manager from an accounting function. The new IS manager is charged with implementing more cost controls, indicating that senior management still questioned the value derived from IS expenditures.

DIVERSE1a. The Vice President of IS initiated an outsourcing investigation in 1991 after learning that an outsourcing vendor was wooing senior management. The VP of IS assigned his Director of Advanced Technology to write a report on the current trend in outsourcing and its potential implications for DIVERSE1:

> "A lot of the industry is nervous. Industry observers for the last couple of years have been saying, 'If you don't look at outsourcing, somebody will do it for you.'" - Director of Advanced Technology

The report, which was presented to senior management, stressed the "facts" of outsourcing neglected in the trade press. These "facts" include: outsourcing is used primarily to refinance failing companies; most shops have economies of scale similar to outsourcing vendors; switching costs are extremely high once a company decides to outsource. After the report was received, the Director of IS assumed that they had successfully confirmed insourcing as the preferred sourcing option:

> "We were comfortable that a third party coming in with an outsourcing pitch would have a tough sell."

In effect, the outsourcing evaluation resulted in no changes in terms of IS costs or service. Although the IS managers perceived that their evaluation confirmed the legitimacy of continued internal sourcing, senior management signed a five-year outsourcing contract for the entire applications development department. This deal was negotiated less than one year after the report was written, indicating a general failure of the IS managers' insourcing efforts.

PETRO3. The Director of Information Services initiated an outsourcing investigation after users consistently complained to senior management about the lack of service in the applications area. The Director of IS explained that user demands far exceeded his current resources, leading to a large applications backlog. He explains:

> "I said, 'I cannot get any support from you in how to allocate these resources. And we cannot be the traffic cop in this whole process because it is not right.' I said, 'I'm trying to satisfy everybody and it's not working."-VP of IS

His investigation consisted of inviting several vendor bids - not for applications, but for the data center, a function he knew was performing well. After the bids were analyzed, the VP of IS drafted a letter to the chairman of the board explaining that continued insourcing cost less than outsourcing. The Director of IS explains the outcome:

> "I had their attention now. And so some of the people who were bashing us backed off. Their group executives now tell their users, 'Back off, they are doing the best that they can.'...So did it help? Since then, I've been to two officer meetings, so I guess it did."-VP of IS

Although a political victory, there was no change in IS costs:

> "As a result of having done this study, there is no difference now than if we had not done the study...It really came down to an exercise. We did not try to make outsourcing work. What we were really trying to do was to come up with the justification for why we shouldn't outsource."-Manager of Technical Support

DIVERSE2a. Early in 1988, a series of mergers and acquisitions prompted the corporate IS staff to consolidate the IS budgets. The VP of one of the operating divisions stated, *"And when top management saw those dollars it was extremely stressful."* Senior management told the CIO to cut the budget, which was virtually impossible given the growth in IS demand as a consequence of the mergers and acquisitions. The VP of the corporate utility notes, *"That was one of the hardest things for senior management to understand, that you can't shut the budget and control this."* The conflict between two incompatible goals - growth and cost containment - prompted the IS staff to initiate an outsourcing investigation. The investigation comprised one informal discussion with an outsourcing vendor and a report to senior management that concluded:

> "[The vendor] makes sense in a very stable environment where resource requirements and growth can be realistically predicted and the company can provide [the vendor] with a complete and detailed forecast of services. Deviations are costly and if they do not fit [the vendor's] operating standards, [they are] extremely costly to obtain".

The IS managers' insourcing confirmation was dismissed by senior management. The outsourcing vendor cited in the previous quotation called the CEO and offered to cut IS costs by 20% if he signed a 10 year contract. The outsourcing contract was indeed signed which indicates a general failure of the insourcing efforts.

4.4 Story IV – Senior Executives Confirm The Value of IS

Conflict	*External forces threaten the organization*
Plot	*Senior management, who recognizes the value of IS, confirms the continued decision to insource*
Protagonists	*Senior managers and IS managers*
Antagonist	*Outsourcing vendors*
Motto	*"We will not hand over the keys to the kingdom"*

Narrative: This is the first "story" in which the insourcing decisions did not result in significant reduction in IS costs, but the insourcing decisions were still considered a success because companies re-validated and further legitimated internal sourcing. In this story, senior management perceives IS as a critical enabler of business strategy and are unwilling to relinquish its control to a third party. Senior management's favorable impressions of IS may be attributable to strong IS leadership. CIOs in these companies operate IS as a profit center with published price lists. Users are encouraged to market test to determine if they can procure IS resources less expensively - few users opt to sacrifice the occasional lower market prices in return for having to integrate, support, and maintain externally procured systems on their own. In addition, CIOs sell part of their IS services to external customers - not only does this practice serve to generate revenue - it sends a message to senior executives and users that they can compete on price and service in the marketplace, and provides a better 'customer focused' IS department. CIOs attend Board-level meetings on strategy formulation and offer advice on how IS can enable strategic initiatives. CIOs provide executive level training on IS abilities, which are mandatory courses for all new general managers. CIOs treat the IS department as a portfolio of activities: core IS competencies are decentralized with a focus on service excellence while non-core IS activities are centralized with a focus on cost efficiency. As a result of these CIOs' leadership, they have full support from senior management. Two of our cases reflect this story: PETRO1 and INTL-BANK.

PETRO1. In the mid 1980s, PETRO1, one of the world's largest petroleum companies, suffered severe financial difficulties which forced senior management to find ways to cut costs. An outsourcing vendor, cognizant of the situation, called the CEO and offered to purchase his IS assets (worth between $250 and $400 million), hire his IS staff, and reduce his current IS costs while still maintaining service levels. The CEO called his direct subordinate, the VP of IS, and told him to draft a letter to the vendor, declining the offer. The VP of IS conveys this conversation with the CEO:

> "He says, 'I'm not interested in letting other people,' - that's the CEO talking - 'have access to our data. I don't have to go outside for use of our data, so prepare a letter back to the chairman of [the outsourcing vendor] and say we appreciate your offer but at this time we consider our information technology as part of the strategic work that we have.'"

When the VP of IS was asked how the CEO could readily dismiss the vendor's offer without further analysis, he explained how he had spent thirty years educating and demonstrating to senior managers the value of IS. For example, he convinced the CEO to "invite" all new general managers to attend a week-long executive computer class which focused on IS-enabled business achievement. He abandoned the general allocation chargeback system in favor of unit pricing and compared these prices with vendor offerings to demonstrate his cost-efficiency:

> "If you start billing your customers as a controlled expense is it not anticipated that users will say, 'Hey could I get this done cheaper elsewhere?' Wouldn't it be nice to be able to answer that question before it was asked?"

His IS department even became an outsourcing vendor by providing IS services to external customers. Although external customers represent only 10% of the IS budget, the VP of IS explains that this creates a marketing mentality among his staff to be both cost-efficient and service-oriented. The VP of IS also participated on two top executive committees: The Corporate Research Committee and the Operating Committee. These committees set corporate strategy and allocate large amounts of resources. His high-profile contributed to the quick dismissal of the vendor's outsourcing proposal:

> "So I think the concept of your IS person being part of the management of the company - not just a technician sitting on the sidelines - is something that keeps you from outsourcing."

INTL-BANK. INTL-BANK is one of the world's biggest retail banks, servicing seven million customers worldwide with branches in Asia, Europe, and North America. The President of Operations at INTL-BANK, is actually the most senior IS person in the company. This was our only example of a senior IS person holding a senior executive position which reported directly to the Board. The President of Operations previously worked for one of the largest hardware and software vendors before taking this position. Due to his background, he was very

familiar with cost reduction tactics. One of his first strategies was to consolidate 72 data centers down to 2 mega-centers. Because he was the President of this company, he possessed the power necessary to overcome user resistance. He basically told them they were welcome to go elsewhere if they preferred to; few did. He standardized the operating environment to reduce costs, shortened the system development life cycle, and to ensure integration:

> "This is our standard operating environment. We move from a heterogeneous to a homogeneous environment where we are using only four different systems."

In the area of applications development, he decentralized to core centers of competencies on the premise that applications are most efficiently designed where the business knowledge resides. Investment banking applications are developed in New York and London, insurance applications in Bonn, and trading applications in Singapore. Coding is done through an Indian subsidiary. Like the VP of IS from PETRO1, he encouraged his IS staff to attract external customers to instill a spirit of competition. For example, he has a staff of 52 people developing specialized PC software to compete on the market:

> "I have forced them to go to the market. They have a goal that only 80% of their revenue is INTL-BANK. I want to push that even more. If they are successful, they have permission to grow to 200 people"

Although these measures were implemented some time ago, there has been no pressure by senior management to cut costs further by, for example, outsourcing. Instead, through these measures, the President has been able to demonstrate the value of IS. As evidence of his success, consider the chairman's letter to shareholders in the 1993 annual report:

> "All Group members adhere to uniform technical standards, thereby facilitating the swift and economical distribution of information. To improve cost efficiency, we substantially reduced the number of computing centers. Consequently, transaction costs fell significantly. To ensure permanent availability of our computing centers, we have implemented a state-of-the-art emergency backup concept. To modernize our end-user environment, local area networks employing the client/server technology have been installed. This in turn serves as the basis for new application areas and the unification of systems management for end user equipment."

In this case, senior management are comfortable with their insourcing arrangement perceiving that IS is strategic to the business with no interest in outsourcing it. The value of IS is confirmed.

The major elements of the four stories are summarized in Table 3.

Table 3: The Four Stories: A Comparison

STORY ELEMENT	**STORY I**	**STORY II**	**STORY III**	**STORY IV**
CONFLICT	External pressures force senior executives to find ways to reduce internal costs.	A poorly conceived, negotiated, and managed long-term outsourcing contract results in rising IS costs and declining service levels.	IS managers feel threatened--by outsourcing vendors wooing senior management, by excessive user demands, or by other forces.	External pressures force senior executives to find ways to reduce internal costs
PLOT	Senior executives select insourcing over outsourcing after a formal evaluation process. Senior management's need to cut costs conflict with users' desire for service excellence; IS managers caught in the middle.	IS managers convince senior management that early termination of the outsourcing contract and a return to insourcing is the only solution. IS Managers' need to ensure good service and keep contract costs down conflicts with vendor managers' need to maximize their own profits.	IS managers initiate cursory outsourcing investigations in hopes of eliminating this option from senior management's consideration. IS managers' need to justify IS performance is threatened by users' needs for better service and senior management's needs for lower costs.	Senior Management, who recognizes the value of IS, confirms the continued decision to insource. Senior managers and IS managers align against external threats.
PROTAGONIST	Senior management	IS Managers	IS managers	Outsourcing vendors
ANTAGONISTS	Users and IS managers	Outsourcing vendors	Senior managers and users	Senior managers and IS managers
MOTTO	"Just give IS managers a level playing field and they can compete"	"Once bitten, twice shy"	"The best defense is a good offense"	"We will not hand over the keys to the kingdom"

5 Morals of the Stories

In the previous section, we described four insourcing stories characterized by two major decision domains: financial outcome and sourcing decision sponsor. While each story has its own plot and narrative, three particular themes emerged from our analysis of the four stories. Continuing with our metaphor of 'stories', we shall call these themes the "morals" of the stories. They are:

Moral 1. IS can indeed replicate outsourcing vendor strategies leading to reduced IS costs.

Moral 2. Senior management's and other stakeholder's perceptions of insourcing success are not solely related to financial outcomes.

Moral 3. Senior management's perceptions of insourcing success depends upon IS management's ability to convince them they are cost-competitive relative to the market.

Moral 1: IS can indeed replicate outsourcing vendor strategies leading to reduced IS costs

In three of our stories - Story I, Story II, and Story IV - we have been able to document eleven cost reduction tactics[3] for lowering IS costs: automation, better chargeback systems, data center consolidation, departmental reorganization, employee empowerment, hardware negotiations, just-in-time sourcing, more efficient resource usage, service elimination, software negotiations, and software standardization. These strategies lead to overall cost savings and hence might be appropriate for those IS activities deemed as commodities. However, most of these practices, while effective at reducing costs, generally serve to lower service levels. In Table 4, we have outlined the effects of cost reduction tactics on the IS cost drivers and service levels.

[3] Some might call these 'best practices'.

Table 4: Effects of Cost Reduction Tactics Used by Participants

Tactic	Effects on IS Cost Drivers	Effect on User's Service Levels
Automation	Replaces personnel with automated equipment such as automated console operations, robotics in tape libraries, network management software, and problem management software.	Little impact on users
Chargeback	Reduces user demand by changing from general allocation chargeback systems to unit pricing. Now, every user request triggers a cost, and thus directs user management's attention to evaluate requests for value.	Users now have to justify every request and follow procedures which slows response to requests. Users complain that the costs of their time, not to mention lost user productivity due to waiting longer for IS to respond, are not captured in the cost figures.
Data Center Consolidation	Reduces personnel, hardware, software, and facility costs	Users initially argue that they need local data centers, but they do not notice a change in service after the transition period.
Departmental Reorganization	Replaces specialists with generalists to allow for headcount reduction	Users argue that the "generalists" are actually "specialists" who were assigned additional workload without enough training, causing service to suffer.
Employee Empowerment	Reduces headcount, such as quality assurance personnel and middle managers, and makes employees responsible for the quality of their work.	Users argue that quality in work suffers, for example, reports may not be right, and have to be reworked.
Hardware Negotiations	Reduces hardware costs by buying used equipment, by negotiating better maintenance contracts, or by bundling hardware requests across the organization to receive volume discounts	Little impact on users, unless PC h ardware maintenance is bundled. In this case, users need to submit formal requests for hardware maintenance which causes service delays.
Just in Time Resources	Reduces IS resource costs by postponing upgrades and additional resources until the last possib 1e minute. A change in mindset occurs from purchasing "just-in-case" to "just-in-time".	Users argue that response time suffers because IS is postponing an upgrade, or that they have to wait for tapes to be mounted rather than storing data on disk.
More Efficient Resource Usage	Reduces resource costs by punishing users for excessive printing, creating standardized forms, migrating user data sets from expensive online storage to tape.	Users argue that the cost of learning printing technology or the cost of their time to request hard copies as opposed to automatically receiving them are not included in the total costs.
Service Elimination	Reduces costs by eliminating IS services which aren't perceived as value for money or are no longer needed because of other tactics.	Users always perceive a loss when a service is eliminated.
Software Negotiations	Reduces software costs by bundling software requests to receive volume discounts or by becoming test sites in exchange for reduced license fees.	Users may be a ffected if a bundled software RFP replaces software they used previously with a new package. The cost of their learning curve, converting documents, and installing software are not captured in any of the cost figures.
Software Standardization	Reduces soft ware costs by eliminating multiple packages which provide the same function.	Users argue that they have to now learn standard packages for e-mail, word processing, spreadsheets etc. The cost of their learning curve, converting documents, and installing sof tware are not captured in any of the cost figures.

In Table 5, we have mapped all 14 cases to these eleven cost reduction tactics. The six cases in Story I and Story II adopted these tactics a*fter* the sourcing evaluation, resulting in significant cost savings. In Story III, none of these tactics were adopted, resulting in no cost savings. In Story IV, INTL-BANK and PETRO1 had implemented these cost reduction tactics *prior* to the sourcing decision. Thus, costs had previously been minimized, given the desired service levels.

Table 5: Cost Reduction Tactics Used by Case Participants

CASE:	PETRO 2	UNIVER -SITY	FOOD	TCOM	ENER GY	RE-TAIL 1	CHEM2	RUBBE R	CHEM 1	DI-VERSE 1	PETR O3	DI-VERSE 2	INTL-BANK	PETR O1
STORY LINE:	I	I	I	I	I	I	II	II	III	III	III	III	IV	IV
Automation	X		X	X	X	X							X	X
Better Chargeback System	X		X										X	X
Data Center Consolidation	X	X				X		X					X	
Departmental Reorganization		X	X	X			X	X						
Employee Empowerment	X		X	X	X									
Hardware Negotiations with Vendors	X	X		X*	X		X	X					X	X
Just in Time Resources	X		X											
More Efficient Resource Usage	X		X	X*		X								
Service Elimination			X											
Software Negotiations	X	X		X*			X	X					X	X
Software Standardization	X		X		X		X	X					X	
TOTAL COST SAVINGS AFTER SOURCING EVALUATION	**43%**	**20%**	**45%**	**46%**	**25%**	**54%**	**IS costs dropped but no specific % was given**	**IS budget dropped from 4% to 1% of sales**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**

X

Cost reduction tactic implemented *after* sourcing evaluation, which lead to savings

X

Cost reduction tactic implemented *before* sourcing evaluation, thus costs were already low at time of evaluation

* Tactic was unsuccessful.

Moral 2: Perceptions of insourcing success are not solely related to financial outcomes

Prior to our data collection, our conception of insourcing "success" and "failure" was equivalent to financial outcomes of the process, i.e., insourcing "successes" are companies that achieved dramatic cost savings of at least 20%, while insourcing "failures" are companies that achieved little or no cost savings. In our research design, we selected "successes" and "failures" to ascertain: After outsourcing evaluations re-confirmed insourcing as the preferred sourcing strategy - why did some companies achieve dramatic savings (and thus success) while others merely continued as-is (and thus failed)?

After our interpretive analysis, which led to the four stories, we re-conceptualized our notions of "success" and "failure" along stakeholder lines. In the majority of

cases, our original conception of cost-savings as the primary criterion for success only captured the perceptions of senior executives, whom we concluded perceived IS as a cost to minimize. We have already seen evidence of this in a number of quotes in the context of the individual cases. Other illustrative quotes from our participants capture senior management's perception of IS as a cost to be minimized.

> "They are always telling us our processing for payroll is too damn expensive. Then when you say, 'Well have you looked outside?' 'Oh yes, we beat the heck out of them.' So our costs are too high but they can't get it any cheaper."- Director of IS Administration at RETAIL1
>
> "The Board could care less about IS. They treated it like they treated the heat or electricity." -CIO of UNIVERSITY
>
> "There was a feeling that this was a rat hole to pour money down."-Data Center Manager at FOOD describing his senior management's perceptions of IS
>
> "One of the questions I asked was, 'How do you view IS, Mr. President, particularly in the operational center, as an asset to your corporation? Of potential value?' For the most part, business people don't see it that way. They see it as cost."-IS Manager at TCOM describing the President's view of IS:
>
> "As a line item in the budget, IS expenses were going up. We were constantly being challenged. We had a new business unit president who came in from the deregulated side of our business who really challenged us and pushed for an environment to really look at the cost of IS."-Data Center Manager at TCOM, confirming the President's view of IS.
>
> "People say you should keep applications. I ask them, 'Why would you want to do that? That's the biggest headache. Anybody can run a machine, it's the applications that are a headache."- Controller of MINE, on why he signed a 10 year outsourcing contract
>
> "I think I got the feeling that there was an intolerance by our management about having a big computer operation. It was viewed as a big boat anchor even though it was a vital service. And they kept asking questions if there were other ways to do this..." Director of IS, PETRO4

But even this assumption, that senior management's perceptions of insourcing success are based on subsequent cost savings, was violated in the cases of PETRO1 and INTL-BANK. In these cases, senior management perceived the continued insourcing of IS as successful, even though it did not lead to cost savings. We believe that this is due to moral 3 - that IS managers had successfully demonstrated in the past that IS was already cost-competitive. We will return to this moral shortly.

When considering other stakeholders, such as users from the various business units, perceptions of insourcing success were almost inversely related to cost-

savings. Unlike the majority of senior executives who focus on cost, users primary criterion for success is service excellence. Based on our interpretation of the cases, we note that costs are directly proportional to service levels - the better the service, the higher the costs. *Thus, cost efficiency and service excellence represent conflicting agendas for IS performance*. The result: in most instances, cost reductions led to perceived service degradation. Consider the following examples.

(1.) Users at PETRO4, RETAIL1, and UNIVERSITY perceived that local data centers were an aspect of service excellence, but multiple data centers were considerably more costly to operate than one consolidated center. Recall, for example, the declaration of one business unit leader at PETRO4,

> "If it cost $5 million more dollars to have this in my business unit and be able to control it and make it responsive to my needs it's worth $5 million dollars to me."

(2.) Users at PETRO4, FOOD, and ENERGY perceived customized software as an aspect of service excellence, but idiosyncratic software was significantly more expensive than standardized package solutions. At FOOD, for example, users in each business unit demanded custom-tailored software - even when standard packages were more cost efficient. Different business units chose different packages for word processing, electronic mail, fourth generation languages, and spreadsheets. From the business unit perspective, it made more business sense to use packages with which users were familiar rather than incur the inconvenience and expense of learning a standard package. As the data center manager explains, users were generally pleased with IS:

> "These people never complained about service or price. They were big users, in many ways, they were a perfect customer. They had only a couple things a week they cared about. And we had it hardwired, execute those two things routinely with no trouble. The rest of the week, they didn't care what we did to them. They were the perfect customer."

(3.) Users at FOOD perceived that 100% availability was an aspect of service excellence, but the extra capacity and software needed to deliver this service drove up costs. Recall the words of the Manager of DP:

> "Over the years we had done a lot of things in the name of service excellence. And alot of extra costs had been incurred trying to be excellent. Excellence is redundancy, extra software, all of those, if you were in a company who valued IS like an airline reservation, those would have been excellence...So the real tragedy was the IS definition of excellence had nothing to do with [senior management's] definition of excellence. Had low cost, reliable service been my predecessor's definition of excellence, all this might not have happened."

In virtually every cost-cutting practice, users perceived, according to our participants, a reduction in service. And because service degradation accompanies severe cost cuts due to the cost/service trade-off, users were most displeased with the insourcing outcomes in the majority of cases.

IS managers' perceptions of insourcing *success* and *failure* are even more complex than users because they are caught in the middle of the cost/service trade-off. Because senior executives were demanding cost cuts while users were demanding service excellence, IS managers were expected to perform the near-impossible: provide a Rolls Royce service at a Chevrolet price. Thus, most IS managers in the study were hoping that the insourcing decision would provide support in making cost/service trade-offs. The IS manager at PETRO3 exemplifies the position of many IS managers that the insourcing evaluation would help him gain support in making cost/service trade-offs. Recall his words:

> "I said, 'I cannot get any support from you in how to allocate these resources. And we cannot be the traffic cop in this whole process because it is not right.' I said, 'I'm trying to satisfy everybody and it's not working."

Similarly, recall the views of the VP of the Corporate Utility at DIVERSE2a who hoped that the insourcing decision would get senior management to recognize the relationship between the growth in demand for IS services and overall IS costs. He stated:

> *"*And when top management saw those dollars it was extremely stressful.*"*

Thus, we now assume a stakeholder interpretation of success and failure. We have categorized these stakeholders into three main groups: senior management, business unit managers and users, and IS managers. Each stakeholder group sets a different *expectation* for IS performance, and as such holds different *perceptions* of IS performance and the effects of insourcing. For senior management, success is interpreted to be cost savings. For business unit managers and users, success translates into improved service levels. For IS managers, success is related to the reputation of IS in the business, in particular the recognition it receives from senior management. IS managers try hard to have their functions positively perceived by senior management, and this leads to the third moral.

Moral 3: Senior management's perceptions of insourcing success depends upon IS management's ability to convince them they are cost-competitive relative to the market

In stories 1, 2 and 4, senior management perceived insourcing as a "success" in that they were pleased with the decision outcomes, even when there was no apparent change in costs, as in Story 4. We believe that senior management's perceptions of success are relative to the market. Senior management perceived that insourcing was a success because they perceived their internal IS departments could cost-compete with the external market. There are several IS management practices associated with convincing senior management that insourcing is the most efficient alternative (See Table 6).

Table 6: Practices that Successfully Demonstrate Insourcing Efficiency

Practices That Successfully Demonstrate Insourcing Efficiency	**Evident In The Following Cases**
An internal bid beats an external vendor bid	PETRO2, UNIVERSITY, FOOD, TCOM, ENERGY, RETAIL1
Internal IS department attracts external customers	INTL-BANK, PETRO1
Internal IS managers implement a unit-price chargeback system	INTL-BANK, PETRO1, FOOD, PETRO4
Failed outsourcing deal	CHEM2, RUBBER

(1.) An internal bid beats an external vendor bid

Senior managers are most likely to believe in the cost-competitiveness of the internal IS department if it successfully competes with external vendor bids for the company's IS business. In such an environment, an outsourcing evaluation, where the internal IS department is allowed to bid, offers the chance for IS to adopt cost savings strategies (such as data center consolidation, software standardization, chargeback, etc.) and reduce IS costs. IS is mandated (through the outsourcing evaluation) to reduce costs on its own. Cases such as PETRO2, UNIVERSITY, FOOD, TCOM, ENERGY and RETAIL1 provide examples where the internal IS organization competed and won against outsider vendor bids. It should be noted that in all these cases, the insourcing evaluation decision was driven by senior management. It is more likely that senior management will believe in the cost-competitiveness of their internal IS organizations if, and only if, they initiate the evaluation. If IS management initiates the evaluation, there is a greater chance that senior management might perceive the evaluation as "rigged" and discount it, as in the case of DIVERSE1, CHEM3, PETRO3 and DIVERSE2.

(2.) An internal IS department attracts external customers

If the IS department is allowed to solicit business from outside the organization and is successful, senior management is again likely to see IS as cost-competitive. The cases of PETRO1 and INTL-BANK are illustrative. The VP of IS of PETRO1 noted that approximately 15% of IS's income came from services provided from outside the company. He felt this was important for more than simply to convince senior management of his functions' cost-competitiveness. It instilled a "service mentality" in the IS staff - either they satisfied these outside customers or they would look elsewhere for IS services next time. This had a knock-on effect in the way internal users were handled. They too were treated as customers who had real choices when it came to choosing their IS service provider. Similarly, the President of Operations at INTL-BANK has forced his staff to compete in the

market. His goal is to have 20% of IS's revenue coming from outside the company.

(3.) Internal IS managers implement a unit-price chargeback system

We believe that senior management's perceptions of IS success relative to market is influenced by the IS chargeback system. Prior to the insourcing decision, IS was accounted for as an overhead in all of our cases except INTL-BANK and PETRO1, which only served to highlight the costs, and not the value of IS. For example, the VP of IS at PETRO1 noted back in 1985 that his CEO kept asking him why IS budgets were rising when budgets in all the other functional units were falling. The VP of IS responded that marketing costs dropped 10% in large part because IS implemented a new credit card system and that transportation costs dropped because IS automated 16 truck refueling systems. By implementing a unit-price chargeback system, users of the services come to understand the real costs of each service activity. Moreover, they then have the ability to modify their behavior to raise or lower their billed costs by increasing/decreasing the level of services they request. The cases of FOOD and PETRO2 provide good examples of this.

(4.) A failed outsourcing deal provides renewed faith in the cost efficiency of the internal IS department

Like IS managers, vendors have a strong understanding of their cost-service curves and its subsequent effect on unit costs. Participants perceived that the outsourcing vendors at CHEM2 and RUBBER reduced their IS costs - and thus their service - in order to gain more profit on their fixed fee contract. For example, the Manager of DP at CHEM2 claims that the vendor's cost cuts in applications support significantly reduced the service. Although the vendor met their contractual obligation of providing 1,000 hours of enhancements per month, the Manager of DP claims it was achieved by reducing headcount and overworking the remaining staff:

> "Well, in order to meet their 1,000 hour deal, let's say they had an opportunity for some other people, like one guy was a chemical engineer. They want to take a shot at some new business with a chemical plant in Ohio, so they send him out there for six months. He was in my base, I was paying for the 1,000 hours. Now they charge $10,000 a month for this guy at the other site. You know what they do with the remaining people that were here? They pick up the slack so that I get my 1,000 hours so contractually I couldn't do anything about it. The programmers, so they have to pick up more hours, they are tired, sick, they make mistakes."

The same phenomenon was found at RUBBER. In such cases, it was relatively easy for the IS managers to convince senior management that outsourcing was not the answer and that insourcing made more sense. The failure of outsourcing convinced senior management that internal IS was indeed cost-competitive.

But insourcing does not guarantee that senior management will perceive IS as cost-competitive nor lead to their positive recognition of IS. For example, IS managers at CHEM1, DIVERSE1, and DIVERSE2 hoped that the insourcing projects would raise the status of IS in the eyes of senior management, but remain disappointed on this front as evidenced by the subsequent firing and outsourcing. Even though the outsourcing evaluation showed insourcing to be the most cost-effective arrangement, IS management failed to change senior management's negative perception of the internal IS department. They failed in their attempt to have senior management perceive IS as cost-competitive relative to the market. Why? Apparently because they initiated the outsourcing evaluation rather than senior management. In such cases, senior management seems to believe the evaluation is biased, irrespective of whether it is or is not. (See Lacity and Hirschheim, 1993b for examples of cases where IS management did in fact bias the outsourcing evaluation in their favor.) Given that perceptions are everything, perception *management* (some might choose to call this 'manipulation') is critical.

6 Conclusions

In summary, we believe that outsourcing evaluations often result from the frustrations caused by different stakeholder expectations and perceptions of IS performance. This belief is based on an analysis of what IS managers can *realistically* achieve verses what senior executives and users *expect* them to achieve. Different stakeholder perspectives set unrealistic performance expectations for IS managers, leading to frustration, loss of faith in internal IS management, and hopes that outsourcing vendors will provide the solutions While outsourcing can lead to a reduction in IS costs (Lacity and Hirschheim, 1993b), this reduction comes at a price: reduced service. Moreover, since it is known that most of the cost savings come from the implementation of key cost reduction strategies such as data center consolidation, unit-cost chargeback systems, standardized software, etc. rather than economies of scale, internal IS departments should be able to reduce costs on their own. And indeed they did.

However, while IS managers can theoretically implement cost reduction strategies, internal politics often prevent them from doing so (Lacity and Hirschheim, 1995). This is why senior executives need to allow IS managers the ability to submit internal bids in competition with external vendors. The outsourcing threat may overcome political obstacles and allow IS managers the freedom and power to propose and implement drastic cost cuts. If senior executives merely compare external bids with current costs, they may allow the vendor's to "pick the low lying fruit." That is, vendors may make drastic cost cuts but absorb most of the savings themselves, merely passing some benefit to customers in the form of modest price cuts.

But even if insourcing is chosen over outsourcing, and the expected cost savings are realized, there is no guarantee it will be perceived as "successful" due to the very different expectations held by the various stakeholders. Returning to our four stories of insourcing, if success is defined in terms of cost reductions, then stories 1 and 2 reflect examples of successes while stories 3 and 4 reflect failure. But as we noted above, such a description of success and failure is too simplistic because it is related to who is doing the evaluating. From the perspective of senior management, stories 1, 2 and 4 are generally thought to be successful, while story 3 is not. Story 1 is successful because cost savings were obtained. Story 2 is successful not simply because cost savings were obtained, but it is successful based on the previous negative experience with the outsourcing vendors. Remember these evaluations were initiated by IS managers and might have become instances of story 3 if there did not already exist a bitter taste in the mouth of senior management to the provision of IS services from outside. The failure of outsourcing provided the needed credibility for IS management. Story 4 was successful even though no apparent cost savings were achieved. Senior management believed that internal IS was already as cost-effective as it could be as is evidenced by their dismissal of the outsourcing alternative, thereby confirming the value of IS. Story 3 was a failure in that no cost savings were achieved. Senior management eventually turned to outsourcing some pieces of IS and/or firing IS management.

From the perspective of business unit managers and the users, story 1 reflected failure in that it led to reduced service levels. Although IS costs went down, the users saw this is as a direct consequence of the reduction in the provision and quality of services provided to them. They were generally unhappy in this story. Story 2, on the other hand, was perceived as a success. The internal IS department brought a sense of sensibility and ownership of IS back to the organization which was missing during outsourcing. Users could ask and receive assistance without hassles because IS was again part of the "corporate team". Story 4 was generally thought to be a success as IS's value to the organization was recognized and its mandate was to provide a high level of service to its clients, particularly as the clients (customers) were given the option to obtain services from outside. Story 3 gave rise to more mixed reactions from the users. The uneasy existence of internal IS in this story posed problems for the user community. Because no cost savings were generated by IS, there was always a feeling that IS would be outsourced, and that uncertain future made it difficult for a strong relationship between IS and the business units to be formed and sustained.

From the perspective of IS management, stories 2 and 4 were clear successes as senior management and the users displayed a positive disposition toward IS. Story 1 was ambiguous. While senior management may have been pleased with the cost savings achieved, IS managers knew this was at the expense of the users. They felt "caught in the middle" between two opposing forces. Although there was some recognition of the success from senior management, IS managers wondered if this

would be short lived. How long before they asked for further cuts? And what about the users? Could they successfully undertake the tasks they needed to perform with the reduced level of service? Story 3 was even more ambiguous and would likely lead to failure in the longer term since no cost savings were achieved and there was a sense that senior management may not have been completely happy with the insourcing arrangement. Indeed, IS managers' concerns were well founded in that some were eventually fired, while others found themselves being partially outsourced some time later.

In conclusion, insourcing can be seen as yet another symptom of the problem of valuing IS. Of the four stories, only in story 4 does senior management appear to appreciate the strategic value of IS. In the other stories, it is perceived as a cost burden - albeit a necessary one, but a burden to be minimized. Compare this to the IS community's generally held view about itself. We'd like to believe that story 4 is 'correct' and the norm. However, our analysis paints a much more sobering picture. The challenge for the IS community, if we really believe in the efficacy of story 4, is to figure out how to cultivate senior management; learn how to manage or shape senior management's perception of IS. For the IS research community, the challenge is determining what mechanisms are appropriate for shaping these perceptions. In our research, we noted four practices that successfully demonstrate insourcing efficiency (i.e. showing cost-competitiveness), but surely there are others waiting to be documented. We believe that further research should focus on defining these practices.

References

Ang, S. and Straub, D.W. "Production and Transaction Economies and IS Outsourcing: A Study of the U.S. Banking Industry," *Management Information Systems Quarterly* (December 1998), 1998, pp. 535-552.

Applegate, L., "Managing in an Information Age: Transforming the Organization for the 1990s" *Transforming Organizations With Information Technology*, Proceedings of the IFIP Conference on Information Technology and New Emergent Forms of Organizations. Ann Arbor Michigan, USA 11-13, August 1994.

Applegate, L. and Elam, J., "New Information Systems Leaders: A Changing Role in a Changing World," *MIS Quarterly*, Vol. 16, 4, December 1992, pp. 469-490.

Astley, W., "Administrative Science as Socially Constructed Truth," *Administrative Science Quarterly,* (30: 4), December 1985, pp. 497-513.

Aubert, B.A., Rivard, S. and Patry, M. "A Transaction Cost Approach to Outsourcing Behavior: Some Empirical Evidence," *Information & Management* (30:2), 1996, pp. 51-64.

Bleicher, J., *The Hermeneutic Imagination*, London: Routledge & Kegan Paul, 1982.

Chan, Y., Huff, S. Barclay, D. and Copeland, D., "Business Strategic Orientation, Information Systems Strategic Orientation, and Strategic Alignment," *Information Systems Research*, 8, 2 (1997), pp. 125-150.

Chaudhury, A., Nam, K. and Rao, H.R. "Management of Information Systems Outsourcing: A Bidding Perspective," *Journal of Management Information Systems* (12:2), 1995, pp. 131-159.

Cheon, M.J., Grover, V. and Teng, J.T.C. "Theoretical Perspectives on the Outsourcing of Information Systems," *Journal of Information Technology* (10), 1995, pp. 209-210.

Currie, W.L. "Using Multiple Suppliers to Mitigate the Risk of IT Outsourcing at ICI and Wessex Water," *Journal of Information Technology* (13), 1998, pp. 169-180

Daft, R., "Learning the Craft of Organizational Research," *Academy of Management Review*. Vol 8 No 4, 1983, pp. 539-546.

Elitzer, R. and Wensley, A. "Game Theory as a Tool for Understanding Information Services Outsourcing," *Journal of Information Technology* (12), 1997, pp. 45-60

Enns, H. and Huff, S., "Chief Information Officer Influence: An Exploratory Study," in *ECIS 2000: A Cyberspace Odyssey*; *Proceedings of the 8th European Conference on Information Systems*, Hansen, R., Bichler, M, and Mahrer, H. (eds.), Vienna, Austria, (July 3-5, 2000), pp. 660-666.

Feeny, D., Edwards, B., and Simpson, K., "Understanding the CEO/CIO Relationship," *MIS Quarterly*, Vol. 16, 4, December, 1992, pp. 435-448.

Fitzgerald, G. and Willcocks, L. "Contracts and Partnerships in the Outsourcing of IT," *Proceedings of the International Conference on Information Systems*, Vancouver, Canada, 1994, pp. 91-98.

Fowler, A. and Jeffs, B. "Examining Information Systems Outsourcing: A Case Study from the United Kingdom," *Journal of Information Technology* (13), 1998, pp. 111-126

Giddens, A., *New Rules of Sociological Method*, Hutchinson: London, 1976.

Glaser, B., and Strauss, A., *The Discovery of Grounded Theory: Strategies for Qualitative Research*, Aldine, Chicago, 1967.

Grover, V., Cheon, M.J. and Teng, J.T.C. "The Effect of Service Quality and Partnership on the Outsourcing of Information Systems Functions," *Journal of Management Information Systems* (12:4), 1996, pp. 89-116

Henderson, J., "Plugging into Strategic Partnerships: The Critical IS Connection," *Sloan Management Review*, Spring 1990, pp. 7-18.

Hirschheim, R. and Klein, H.K., "Information Systems Research at the Crossroads: External vs. Internal Views", in *Organizational and Social Perspectives on Information Technology*, R. Baskerville, J. Stage and J. DeGross (eds.), Kluwer Publishers, Boston, 2000, pp. 233-254.

Hu, Q., Saunders, C. and Gebelt, M. "Research Report: Diffusion of Information Systems Outsourcing: A Reevaluation of Influence Sources," *Information Systems Research* (8:3), 1997, pp. 288-301

Jarvenpaa, S., and Ives, B., “Information Technology and Corporate Strategy: A View From the Top,” *Information Systems Research*, Vol. 1, 4, 1991, pp. 351-376.

Kambil, A., Henderson, J., and Mohsenzadeh, H., “The Strategic Management of Information Technology Investments: An Options Perspective,” in R. Banker, R. Kauffman and M., Mahmood (eds.), *Strategic Information Technology Management: Perspectives on Organizational Growth and Competitive Advantage*, Idea Group, Harrisburg, PA, 1993.

Klepper, R. "The Management of Partnering Development in I/S Outsourcing," *Journal of Information Technology* (10), 1995, pp. 249-258

Lacity, M., and Hirschheim, R., "The Information Systems Outsourcing Bandwagon: Look Before You Leap," *Sloan Management Review*, Vol. 35, 1, Fall, 1993a, pp. 72-86.

Lacity, M., and Hirschheim, R., *Information Systems Outsourcing: Myths, Metaphors and Realities*, Wiley, Chichester, 1993b.

Lacity, M. and Hirschheim, R., *Beyond the Information Systems Outsourcing Bandwagon: The Insourcing Response*, Wiley, Chichester, 1995.

Lacity, M.C. and Willcocks, L.P. "An empirical investigation of information technology sourcing practices: Lessons from experience," *MIS Quarterly* (22:3), 1998, pp. 363-408

Lee, J.-N. and Kim, Y.-G. "Effect of Partnership Quality on IS Outsourcing Success: Conceptual Framework and Empirical Validation," *Journal of Management Information Systems* (15:4), 1999, pp. 29-61

Loh, L., and Venkatraman, N., "Diffusion of Information Technology Outsourcing: Influence Sources and the Kodak Effect," *Information Systems Research*, 1992, pp. 334-358.

McLellan, K., Marcolin, B.L. and Beamish, P.W. "Financial and Strategic Motivations Behind IS Outsourcing," *Journal of Information Technology* (10), 1995, pp. 299-321

Mitroff, I., *Stakeholders of the Organizational Mind*, Jossey-Bass, San Francisco, 1983.

Morgan, G., *Images of Organization*, Sage Publishers, Beverly Hills, 1986.

Novak, M., “Story and Experience,” in J. Wiggens (ed.), *Religion as Story*, Harper and Row, New York, 1975.

Nam, K., Rajagopalan, S., Rao, H.R. and Chaudhury, A. "A Two-Level Investigation of Information Systems Outsourcing," *Communications of the ACM* (39:7), 1996, pp. 36-44.

Pettigrew, A., “Longitudinal Field Research on Change Theory and Practice,” Paper presented at the National Science Foundation Conference on Longitudinal Research Methods in Organizations, Austin, 1989.

Polkinghorne, D., *Methodology for the Human Sciences: Systems of Inquiry*, State University of New York Press: Albany, 1983.

Poppo, L. and Zenger, T. "Testing Alternative Theories of the Firm: Transaction Cost, Knowledge-Based, and Measurement Explanations for Make-or-Buy Decisions in Information Services," *Strategic Management Journal* (19), 1998, pp. 853-877.

Rockart, J., Earl, M. and Ross, J., “Eight Imperatives for the New IT Organization”, *Sloan Management Review*, (Fall 1996), pp. 43-55.

Sambamurthy, V. and Zmud, R., “Factors Influencing Information Technology Management Architectures in Organizations: A Theory of Multiple Contingencies,” *MIS Quarterly*, 23,2 (June 1999).

Sanders, P., "Phenomenology: A New Way of Viewing Organizational Research," *Academy of Management Review*. Vol 7 No 3, 1982, pp. 353-360.

Slaughter, S. and Ang, S. "Employment Outsourcing in Information Systems," *Communications of the ACM* (39:7), 1996, pp. 47-54.

Teng, J.T.C., Cheon, M.J. and Grover, V. "Decisions to Outsource Information Systems Functions: Testing a Strategy-Theoretic Discrepancy Model," *Decision Sciences* (26:1), 1995, pp. 75-103.

Westerlund, G., and Sjostrand, S., *Organizational Myths*, Harper and Row, New York, 1979.

Willcocks, L.P. and Kern, T. "IT Outsourcing as Strategic Partnering: The Case of the UK Inland Revenue," *European Journal of Information Systems* (7:1), 1998, pp. 29-45.

Capabilities for Information Systems Outsourcing Success: Insights from the Resource-based View of the Firm

Tim Goles

College of Business, University of Texas at San Antonio, San Antonio, Texas 78249-0630

1 Introduction

Outsourcing has become a generally accepted means of fulfilling an organization's IS needs. Defined as "the handing over to a third party management of IT/IS assets, resources, and/or activities for required results" (Willcocks and Lacity, 1998, p. 3), the objectives of outsourcing have evolved from an emphasis on reducing expenses and increasing efficiency to a focus on more strategic issues (DiRomualdo and Gurbaxani 1998; Lacity and Willcocks 2001). A framework often used to examine strategic issues is the *resource-based view of the firm*, which argues that the competitiveness of a firm is a function of how it acquires and deploys its resources (Barney, 1991; Grant, 1991; Wernerfelt, 1984).

There is general agreement that a compelling reason firms outsource is to fill gaps in their set of IS resources. In other words, the outsourcing decision is driven by a desire to gain access to new or superior IT-related capabilities. There is a substantial stream of research that explores and confirms this point of view (Cheon et al. 1995; Grover et al. 1994; Roy and Aubert 2002; Teng et al. 1995). However, not as much attention has been paid to a pair of follow-up questions: what are those capabilities, and how do they lead to a successful outsourcing arrangement? These questions provide the motivation for this paper.

2 Previous Research

Research directed towards identifying IT resources and capabilities that could enhance a firm's competitive position began to appear in the mid-1990's (see

Wade and Hulland, 2004 for a review)[1]. For example, Rockart et al. (1996) set forth eight imperatives, or essential skills that are necessary in order to perform core IT activities. To compete successfully, a firm must master each one. Although Rockart et al. did not provide a framework for organizing the imperatives, a review of the paper suggests that they may be categorized according to their principal orientation: *IT oriented* (deliver and implement new systems, build and manage infrastructure, reskill the IT organization, build a high-performance IT organization, redesign and manage the federal IT organization); *business oriented* (achieve two-way strategic alignment between IT and the business, develop effective relationships with business managers); and *relationship oriented* (manage vendor partnerships).

Ross et al. (1996) drew on the resource-based view of the firm to identify human, technology, and relationship assets that generate competitive advantage. The assets are comprised of factors that shape the firm's capabilities. As with Rockart et al. (1996), the factors can be grouped in accordance with their primary focus: IT (technical skills, well-defined technology architecture, infrastructure standards); business (business understanding, problem solving orientation); and relationship (establish responsibility for functions and activities, establish priorities).

Also utilizing the resource-based view of the firm, Mata et al. (1995) examined potential sources of competitive advantage stemming from IT. They concluded that IT oriented skills (i.e., technical skills, or the ability to build and operate IT applications) could be a source of temporary competitive advantage. They went on to state that an IT organization's business oriented skills (ability to understand business needs, work with business managers, coordinate activities, and anticipate future IT needs of the business) are likely to be a source of sustainable competitive advantage.

Feeny and Willcocks (1998) proposed nine core capabilities necessary to exploit IT for competitive advantage. Once again the capabilities can be categorized by orientation: IT (architecture planning, making technology work); business (integrate IT and business, understand interdependencies between IT and business, get the business engaged in IT issues); and relationship (manage sourcing strategy, contract facilitation, contract monitoring, uncover potential for added value). The capabilities were juxtaposed over three challenges to exploiting IT. The resulting framework illustrates the overlapping and interdependent nature of resources and capabilities.

[1] The terms assets, skills, knowledge, resources, competencies, and capabilities have been inconsistently defined and used in previous studies (Bharadwaj, 2000; Wade and Hulland, 2004). However, they all are viewed as factors that contribute to a firm's competitive advantage. For that reason, they are considered synonymous for this review of prior research. The relevant terms will be defined later in this paper.

Bharadwaj (2000) used the resource-based view of the firm as a basis to link the performance of firms to IT resources and skills. These were classified as tangible resources (IT infrastructure), human resources (technical and managerial skills), and intangible IT-enabled resources (customer orientation, knowledge assets, and synergy). As conceptualized by Bharadwaj, each set of these resources consists of a collection of skills and assets that interact to form organizational capabilities that can in turn be categorized according to technical, business, or relationship orientation.

These key studies provide insight into essential resources and skills an IT organization must possess in order to realize the full potential of IT as a weapon for competitive advantage. Table 1 consolidates and summarizes the resources necessary for competitive advantage, and relates them to the IT, business, and relationship capabilities required of an outsourcing vendor.

Paralleling the emergence in the IS strategic management literature of articles that focused on the capabilities necessary for a successful IS function was research that focused on the strategic management implications of outsourcing; that is, how does outsourcing support the firm's efforts to achieve its strategic objectives (see Dibbern et al., 2004, for a comprehensive review of the outsourcing literature). Underlying many of these studies is the concept that outsourcing plays a key role in acquiring and allocating IS resources and capabilities necessary to maintain or enhance the firm's competitive posture. From this perspective, outsourcing is regarded as an action taken in response to perceived deficiencies in the IS function within the firm; the internal IS function is deemed to be inadequate in comparison to the market, based on an evaluation of resources and capabilities (Dibbern et al. 2001). This notion appears in early case studies of the decision by individual organizations to outsource, in which the decision was driven in part by a desire for increased access to higher quality IS resources (Cross, 1995; Huber, 1993). These descriptive papers provide insight into business managers' motivation for outsourcing, but are not theoretically grounded.

Other, more academically oriented studies specifically draw on the resource-based view of the firm as a theoretical lens through which to view outsourcing. Initially, this perspective was used to examine the decision of firms to outsource. These studies link the outsourcing decision to a desire by firms to fill perceived gaps in their IS resources and capabilities. The results support the premise that firms outsource at least in part to resolve disparities between desired and actual levels of IS capabilities (Cheon et al. 1995; Grover et al., 1994).

Table 1: A Categorization of Resources and Capabilities[2]

Capa-bilities	Resources	References
IT		
	Deliver and implement new systems	Rockart et al., 1996
	Build and manage infrastructure	
	Reskill the IT organization	
	Build high performance	
	Technical skills	Ross et al., 1996
	Well-defined technology architecture	
	Infrastructure standards	
	Architecture planning	Feeny and Willcocks, 1998
	Making technology work	
	Ability to coordinate IT activities	Mata et al., 1995
	Develop applications rapidly	Bharadwaj, 2000
	Share information across functions and locations	
	Implement common processes	
	Exploit opportunities for synergy	
	Technical IT skills	
	Manage IT functions	
	Knowledge assets	
Business		
	Align IT and business strategy	Rockart et al., 1996
	Business understanding	Ross et al., 1996
	Problem solving orientation	Ross et al., 1996

[2] Adapted from Wade and Hulland (2004).

Table 1: A Categorization of Resources and Capabilities (continued)

Capa-bilities	Resources	References
Business (continued)		
	Integrate IT and business	Feeny and Willcocks, 1998
	Understand interdependencies between IT and business processes	
	Get the business engaged in IT issues	
	Ability to understand business needs	Mata et al., 1995
	Ability to anticipate future IT needs of the business	
	Project management skills	Bharadwaj, 2000
	IT/business synergy	
Relationship Management		
	Manage vendor partnerships	Rockart et al., 1996
	Develop effective relationships with line management	
	'Federalize' management of the IT function	
	Define ownership of and responsibility for specific functions and activities	Ross et al., 1996
	Establish priorities	
	Manage the sourcing strategy	Feeny and Willcocks, 1998
	Contract facilitation	
	Contract monitoring	
	Identify potential for added value from the vendor	
	Ability of IT and business managers to work together	Mata et al., 1995
	Coordinate and interact with users	Bharadwaj, 2000
	Customer orientation	

The resource-based view of the firm has also been used in studies that focus on the role of outsourcing in acquiring or managing IS resources that have *strategic* value. Findings uphold the general argument of the resource-based view; that is, the presence or absence of certain strategic resources and capabilities influences the outsourcing decision (Duncan, 1998; Roy and Aubert, 2002; Teng et al., 1995). This has led to calls for future models to examine the connection between an outsourcing vendor's resources and the customer's satisfaction with the vendor (Duncan, 1998). In order to better understand this connection, a closer examination of resource-based theory will be helpful.

3 Theoretical Framework

Strategic decisions such as IS sourcing are driven by a firm's desire to attain a competitive advantage in the marketplace, or at least to avoid a competitive disadvantage. The resource-based approach seeks to identify sources of a competitive position grounded in the resources and capabilities a firm possesses or has access to (Day, 1994). The firm is not restricted to internal sources, but may turn to external sources to acquire complementary resources and capabilities (Grant, 1991). This is particularly noteworthy when the firm and its environment are exposed to rapid and unpredictable change. In these circumstances firms must be able to quickly acquire, dispose of, and integrate resources to maintain or improve their competitive posture. When the environment is turbulent and uncertain, firms prefer to acquire desired capabilities by means of intermediate forms of governance with other organizations, in lieu of developing the capabilities internally (Barney, 1991). The ensuing capabilities arise from "resource-based interaction among autonomous but interdependent firms" (Lorenzoni and Lipparini, 1999, p. 319), an apt description of an outsourcing arrangement. Hence the resource-based view of the firm suggests that outsourcing is an appropriate strategy for filling the firm's inventory of IS-related capabilities.

The resource-based view of the firm conceptualizes the firm as a bundle of resources that are acquired and expended in order to attain the firm's objectives. Generally speaking, resources are inputs or production factors owned or controlled by the firm that enable it to perform a particular task (Amit and Schoemaker 1993; Penrose 1959; Wernerfelt 1984).

Resources serve as the basic building blocks of the firm. Capabilities are the mortar that binds the resources together in organizational routines and processes (Day, 1994). Capabilities develop over time through interactions between resources, and function as multipliers to increase the effectiveness and productivity of the firm (Amit and Schoemaker 1993; Makadok 2001). Thus capabilities represent a firm's ability to deploy and coordinate resources, often in

combination with other resources, to achieve a desired outcome (Amit and Schoemaker 1993; Grant 1991).[3]

Employing a resource-based strategy entails inventorying the firm's existing set of resources and capabilities, and evaluating it in light of anticipated needs. If the firm concludes that new or complimentary capabilities are required, it may prefer to acquire them from an external source rather than expend the resources to develop them in-house (Grant 1991). The relevance of this theoretical perspective to outsourcing is readily apparent. As part of the outsourcing decision-making process, firms go through an evaluation procedure that includes assessing their internal IS resources and capabilities, weighing them against current and anticipated needs, and against resources and capabilities available in the outsourcing marketplace (Lacity and Hirschheim 1993). If a firm finds its IS capabilities wanting, it enters into arrangements with external vendors to resolve the situation (Grover et al., 1994). Even if there are no overt gaps or weaknesses, retaining resources that have a low strategic value may necessitate the use of other resources or capabilities that might be used to better advantage elsewhere. In this case the resource-based view suggests that the firm engage external vendors to supply the low strategic value resources, while focusing its efforts on internal resources and capabilities that provide high strategic value (i.e., focus on core competencies) (Roy and Aubert, 2002).

4 Model Development

As previously discussed, three categories of capabilities necessary for successfully exploiting information technology in order to enhance a firm's competitiveness have emerged from prior research; technical, business, and relationship management (see Table 1). In an outsourcing context, these can be grouped into sets of vendor capabilities and customer capabilities.

In brief, the model presented in Figure 1 posits that the overall capabilities of the vendor and the customer are reflected in both the strength of the relationship between the parties to the outsourcing agreement, and the quality of the outsourcing arrangement. The strength of the relationship goes on to help shape the quality of the outsourcing arrangement. Quality, in turn, determines the success of the outsourcing arrangement, as indicated by customer satisfaction. These arguments are further developed in the following sections.

---

[3] Some researchers differentiate between capabilities and competencies (Ravichandran and Lertwongsatien, 2005). Others view them as synonymous (Day, 1994; Wade and Hulland, 2004). In this paper no distinction is made between the terms, based on the argument that capabilities subsume competencies (Prahalad and Hamel, 1990).

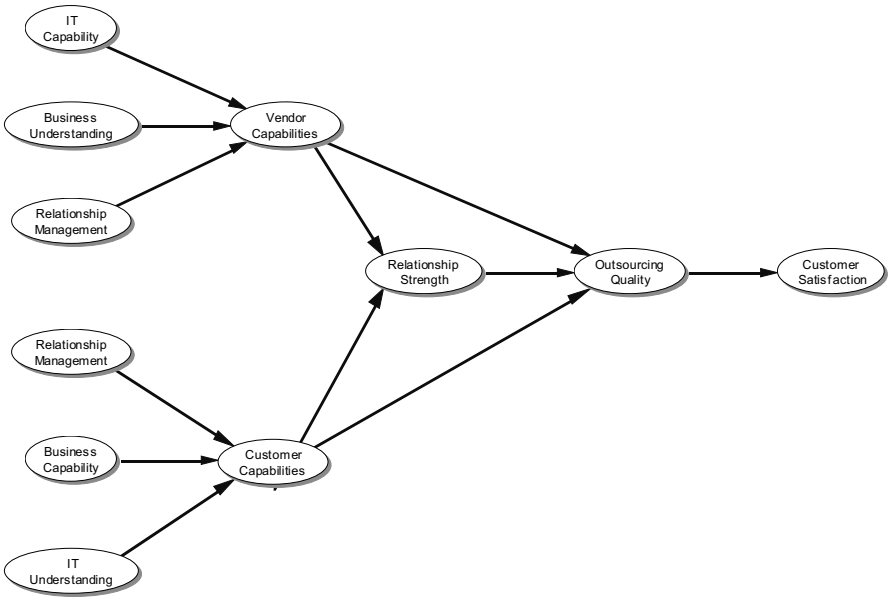


Figure 1: Theoretical Model

4.1 Vendor Capabilities

What are the vendor capabilities necessary for a successful outsourcing arrangement? Drawing on the factors identified in Table 1, the vendor must possess the capability to manage and execute the functions necessary for receiving, storing, manipulating, and disseminating data (*technical capability*). The vendor must also have the capability to comprehend the linkages and interdependencies between IT and the business functions it supports (*business understanding capability*). Finally, the vendor must have the capability to work with the customer on two levels: (1) jointly anticipating, planning, organizing, and overseeing the IT activities necessary to support the customer's needs, and (2) interacting with the customer on governance matters that affect the relationship between the firms (*relationship management capability*).

4.1.1 Technical Capability

Technical capability refers to the vendor's expertise in mobilizing and deploying IT oriented resources to deliver information systems and perform IT functions in an efficient and cost-effective manner (Ross et al., 1996). This includes both "hands-on" technical skills (e.g., network and infrastructure support, programming, systems analysis and design, and the ability to master new technologies) and technology management skills (the ability to effectively manage

information systems and technologies to help meet the customer's business objectives) (Bharadwaj, 2000; Lee et al., 1995). The resource-based view of the firm suggests that companies outsource to acquire these technical capabilities primarily because outsourcing vendors are expected to be more proficient than their customers in the acquisition, development, implementation, and management of technology (DiRomauldo and Gurbaxani, 1998; Swinarski et al., 2002). An IS vendor must possess a certain amount of technical capability to have any hope of satisfying its customer (Nam et al., 1996). Put another way, "…the technical competency of service providers is an indispensable factor for success of client-vendor relationships" (Kishore et al., 2003, p. 92).

4.1.2 Business Understanding Capability

As the advent of ubiquitous computing blurs the line between technology and business, technological resources by themselves are necessary, but not sufficient, to ensure achievement of business objectives. The vendor must also have the capability to thoroughly understand the customer's business domain. This includes both general business knowledge, as well as specific knowledge of the firm's business functions (Lee et al. 1995; Rockart 1996; Ross et al. 1996). The vendor's *business understanding capability*, defined as the extent to which the vendor understands the wants, needs, constraints, and behaviors of the customer, is now a vital aspect of the outsourcing arrangement (Kern 1997). This enables IT professionals employed by the vendor to act as business problem solvers by aligning technical capability with business strategies and objectives (Bassellier and Benbasat, 2004).

4.1.3 Relationship Management Capability

There is general acknowledgment in the outsourcing literature that the relationship between the vendor and the customer plays an essential role in determining the success of an outsourcing arrangement (Dibbern et al., 2004). Thus the vendor's *relationship management capability* is critical. This manifests itself in two general areas: (1) managing the processes that regulate the detailed exchanges of information, services, products, and compensation between the parties, and (2) on a higher level, managing the attributes that shape various aspects of the relationship between the parties (Kern, 1997; Lacity et al., 1996). Hence the vendor's ability to plan, organize, coordinate, and execute activities associated with the relationship is a crucial component of its overall capabilities.

4.2 Customer Capabilities

In an interorganizational relationship such as outsourcing, competitive advantage is maintained or enhanced by combining complementary capabilities from the two participating firms. The complementary capabilities are derived from different

resource bases (i.e., the vendor and the customer) and ideally will have a synergistic effect on overall performance (Dyer and Singh, 1998; Wade and Hulland, 2004). For example, it is the customer's business capability, coupled with the vendor's IT capability, that together shapes the capacity of the two firms to jointly develop and deploy IS solutions to business needs (Clark et al., 1997; Rockart et al., 1996). Thus in addition to vendor capabilities, the resource-based perspective on IS outsourcing must take into account customer capabilities as well.

4.2.1 IT Understanding Capability

The extent to which a customer understands how IT can be utilized to address both tactical and strategic issues plays a large role in the impact IT has on the organization.

> "The success or failure of an organization's use of IT, however, is only partially dependent on the effectiveness of the IT organization. It is even more dependent on the capability of line managers at all levels to understand the capabilities of the IT resource and to use it effectively" (Rockart et al., 1996, p. 53).

The customer's *IT understanding capability* is defined as the extent to which the customer understands and appreciates IT-related abilities and limitations that affect or potentially could affect the customer's organization. This capability is necessary for business managers to effectively utilize IT in order to achieve the organization's objectives (Henderson, 1990; Rockart, 1988). In an outsourcing context, the retention and development by the customer of "business-related IT experience" was found to mitigate risks associated with outsourcing (Willcocks and Kern, 1998, p. 35).

4.2.2 Business Capability

The customer must also have the capability to plan, organize, lead, and control the activities necessary for it to survive and prosper. Similar in concept to the vendor's IT capability, the customer must have a minimum level of *business capability* in order to survive as a viable organization. This capability is a complex bundle of skills, expertise, and knowledge that enables the firm to carry out the activities that comprise the firm's business processes (Day, 1994). The effectiveness of these business processes, in turn, are avenues through which the competitive potential of the firm is realized (Ray et al., 2004). Strategically, this capability enables the firm to identify, adapt, and integrate internal and external resources in order to respond to changes in its environment (Teece et al., 1997).

4.2.3 Relationship Management Capability

Finally, just as the vendor must possess the capability to manage a relationship, so too must the customer. It is a given that an outsourcing contract cannot anticipate every contingency. It is up to the relationship to fill the void when the contract is silent. The customer-vendor relationship is a complex and sensitive interface between the firms at multiple levels, ranging from executive to operational management (McFarlan and Nolan, 1995). Similar to the vendor, specific management skills are required on the part of the customer to establish and nurture the relationship (Willcocks and Kern, 1998; Kern and Willcocks, 2000). Consequently, customers in an outsourcing arrangement benefit from retaining and developing the capability to manage the ongoing relationship with the vendor (Currie and Willcocks, 1998).

4.3 Overall Capabilities

The capabilities of each party – the customer, and the vendor – supply the basic ingredients for building and managing an effective outsourcing arrangement. These capabilities have two overarching functions. First, they serve to bolster the strength of the customer/vendor relationship by enabling the parties to establish a solid day-to-day working relationship, and on a more strategic plane to collaborate in order to identify and take advantage of IT-based opportunities to fulfill the customer's business needs and objectives. Second, the capabilities jointly influence the overall quality of the outsourcing arrangement. If either party is lacking in capabilities, then resources that could have been devoted to other aspects of the arrangement must instead be employed to address the deficiency. Conversely, the presence of high-grade capabilities contributes to the efficiency and effectiveness of the relationship, along with the IT functions and services produced via the outsourcing arrangement, and the manner in which they are delivered.

4.4 Relationship Strength

Managing the relationship is a mutual responsibility shared by both vendor and customer. The relationship links two disparate domains: the customer's, which is oriented towards achieving a position of competitive advantage in its marketplace; and the vendor's, which is oriented on providing the customer a bundle of IT goods and services that meet the customer's needs. The effectiveness of this linkage affects the overall quality of the outsourcing arrangement as follows.

A strong relationship enables information sharing and knowledge transfer between the parties. The vendor gains a heightened understanding of the customer's competitive environment, strategies, and operations, while the customer, in turn,

has a greater appreciation of the potential for IT to help achieve its objectives. This helps align the vendor's IT capability with the customer's business requirements, enhancing the vendor's ability to support the customer's strategy. A strong relationship also promotes teamwork through collaborative problem solving and resource allocation. Working together, the customer and vendor can accommodate shifts in processes, goals, and strategies due to changing environmental conditions, and address contingencies as they arise. Finally, a strong relationship enables a degree of flexibility when responding to situations not covered in the outsourcing contract. In short, a strong relationship results in a higher quality outsourcing arrangement by facilitating alignment of IT capabilities and business objectives, enhancing teamwork and problem solving, and adapting quickly to unforeseen conditions.

4.5 Quality

The resource-based view of the firm supports the argument that customer and vendor capabilities are essential ingredients in an effective outsourcing arrangement. Capabilities are necessary determinants for eventual success. However, they must first be deployed to create and sustain high quality information systems and functions that support the firm in its pursuit of competitive advantage. This is consistent with the general theme of previous studies stating that IS quality impacts organizational performance (DeLone and McLean 1992; DeLone and McLean 2002; Seddon 1997). Since the outsourcing arrangement is the vehicle through which IT solutions to business problems/opportunities are developed and deployed, it follows that the quality of the outsourcing arrangement directly affects outsourcing success or failure. In general, quality has been considered a determinant of satisfaction in the marketing arena (e.g., Anderson and Sullivan, 1993) as well as the IS literature (e.g., Nelson et al., 2005; Whyte et al., 1997).

4.6 Satisfaction

Outsourcing success has been measured in a variety of ways, including realizing expectations (Lacity and Hirschheim 1993), avoiding negative outcomes or minimizing risk (Aubert et al. 1999), quantitative measures (Lacity and Willcocks, 1998), and attaining economic, technological, and strategic benefits (Grover et al., 1996; Lee and Kim, 1999). An oft-used surrogate for outsourcing success in prior research is *satisfaction* (Koh et al., 2004; Lee and Kim, 1999; Saunders et al., 1997). Satisfaction is a positive affective state arising from the respondent's favorable assessment of the subject matter being evaluated (Anderson and Narus, 1984; Thibaut and Kelly, 1959). This is a useful overall measure in that it enables the individual managers to judge the outsourcing arrangement based on the criteria that each one feels is most relevant.

5 Research Methodology

5.1 Data Collection

To test the model, a survey was developed and administered to nine outsourcing customer firms (see Table 2 for detailed information on the participating organizations). The survey was targeted at managers on different organizational levels, and with different functional responsibilities, who deal on a direct basis with the outsourcing vendor. Hence this research is conducted at the individual level of analysis. This is appropriate because outsourcing is an interorganizational relationship, and like any other interorganizational relationship is a multilevel phenomenon that lends itself to study at manifold levels (Klein et al., 2000; Koh et al., 2004). Analyzing an outsourcing arrangement at the individual level allows for a deeper understanding than analysis at the organizational or relationship level (Lacity and Willcocks, 2000).

Characteristics of the participants are presented in Tables 3a, 3b and 3c[4]. A large majority of the respondents - over 80% - held supervisory or managerial positions. Almost 60% had direct contact with a vendor employee at least once a day, and 90% had direct contact with a vendor employee at least once a week. Similarly, more than three-fourths used vendor-provided systems or services at least once a day, and 90% used them at least once a week. On average, the respondents had more than 20 years of experience, and had been with their firm for over 15 years. These results indicate that the respondents were knowledgeable and involved managers who are well qualified to provide an informed perspective on their respective outsourcing arrangements.

[4] The totals in Tables 3a, 3b, and 3c do not match the number of total responses because not every respondent completed all the questions in this portion of the survey.

Table 2: Participating Organizations

Firm	Industry	Net Sales (US$ millions)	Number of Employees	Surveys Returned/ Distributed	Res-ponse Rate
1	Telecom-munication	$66,000	166,000	21/50	42%
2	Energy	$47,000	35,000	19/50	38%
3	Energy	$39,000	17,000	9/20	45%
4	Manufacturing	$783	4,000	6/20	30%
5	Manufacturing	$2.353	12,000	37/50	74%
6	Manufacturing	$1,831	9,000	30/50	60%
7	Auto Maker	$185,000	386,000	12/50	24%
8	Service	$2,300	31,000	8/10	80%
9	Publishing	$1,400	8,000	30/50	60%
Total				172/350	49%

Table 3a: Respondent Experience

Number of years	…with the firm		…business experience		…outsourcing experience	
	frequency	per cent	frequency	per cent	frequency	per cent
0 - 3	27	15.9%	1	0.6%	90	53.6%
4 - 6	15	8.8%	3	1.8%	26	15.5%
7 - 9	9	5.3%	4	2.4%	11	6.5%
10 - 12	16	9.4%	13	7.6%	24	14.3%
13 - 15	18	10.6%	8	4.7%	13	7.7%
16 - 19	15	8.8%	14	8.2%	1	0.6%
20+	70	41.2%	127	74.7%	3	1.8%
Total	170	100%	170	100%	168	100%

Table 3b: Respondent Job Function

Position	frequency	per cent
Administrative	5	3.0%
Analyst	10	6.0%
Technician	9	5.4%
First Level Supervisor	23	13.7%
Middle Manager	85	50.6%
Senior Manager	32	19.0%
Other	4	2.4%
Total	168	100%

Table 3c: Respondent Interaction

Frequency of Business Contact with Vendor Employees	frequency	per cent
at least once a day	99	57.9%
at least once a week	55	32.2%
at least once a month	12	7.0%
less than once a month	4	2.3%
never	1	0.6%
Total	171	100%

Frequency of Use of the Vendor's System(s)	frequency	per cent
at least once a day	130	78.8%
at least once a week	19	11.5%
at least once a month	3	1.8%
less than once a month	6	3.6%
never	7	4.2%
Total	165	100%

5.2 Operationalization of Constructs

Operationalization of the constructs began by interviewing three senior IS professionals with significant outsourcing expertise. This served as a "real world" check on the reasonableness of the research model, and provided confirmation of the constructs' face validity. The next step was to finalize definitions for each construct. This was done by drawing on the outsourcing literature, and was supplemented by the interviewees' comments. As a result, it was decided to design many of the items specifically for this study. Once the initial version of the survey was completed, a pilot test was conducted with managers at two large firms. As part of the pilot test, the participating managers were interviewed to solicit their input on the instrument. Based on this feedback some minor wording changes were made to the survey to make certain questions more understandable. All constructs were measured on a seven-point Likert scale. The items and certain associated descriptive statistics are presented in the Appendix.

The model portrays overall vendor capabilities as a second-order construct, consisting of dimensions reflecting technical capability, business understanding capability, and relationship management capability. Measures for these dimensions, as well as for overall capability, were created specifically for this study, as discussed above.

Similar to vendor capabilities, customer capabilities are also considered a second-order construct, composed of IT understanding capability, business capability, and relationship management capability. Measures for these constructs were crafted especially for this study as well.

Quality is measured by a set of items designed to capture the respondents' perceptual evaluation of the outsourcing arrangement as a whole. Given the general lack of studies that assess this construct in an outsourcing context, the items used were developed specifically for this study.

The items used to measure satisfaction are consistent with items in previous studies, most notably Saunders et al (1997), Grover et al. (1996), and Lee and Kim (1999).

5.3 Analysis

Data analysis was conducted using the partial least squares (PLS) structural equation modeling technique, as applied in PLS Graph version 3.0.

5.3.1 Instrument Validation

All of the items used in this study are reflective in nature. A reflective indicator, as the name implies, embodies or reflects the core essence of its associated construct.

PLS loadings for reflective indicators that measure the same construct gauge the extent to which the items tap into the same underlying concept, and therefore should be highly correlated (Chin, 1998b) A loading of 0.707 or above is generally considered as evidence that significant variance is shared between the item and its construct (Barclay et al. 1995; Chin 1998b). As shown in Table 4, all of the individual item loadings on their respective constructs are well above this threshold, signifying individual item reliability (the individual item loadings on their respective constructs are in **bold** type).

Table 4: Item loadings and Cross-loadings

Construct	Item	IT Capabl.	Bus. Under.	Rel. Mgt. - Vendor	Vendor Capabl.	IT Under.	Bus. Capabl.	Rel. Mgt. - Cust.	Cust. Capabl.	Relation. Strength	Quality	Satisfac.
IT Capability	1	**0.975**	0.423	0.613	0.813	0.398	0.369	0.424	0.322	0.655	0.675	0.594
	2	**0.973**	0.463	0.614	0.797	0.393	0.344	0.437	0.344	0.677	0.707	0.590
Business Understanding	1	0.461	**0.964**	0.527	0.516	0.369	0.320	0.373	0.286	0.449	0.485	0.526
	2	0.410	**0.956**	0.581	0.470	0.236	0.281	0.322	0.233	0.464	0.500	0.516
Relationship Mgt. - Vendor	1	0.595	0.527	**0.939**	0.671	0.395	0.298	0.459	0.221	0.690	0.657	0.599
	2	0.584	0.581	**0.932**	0.644	0.300	0.283	0.450	0.169	0.646	0.681	0.630
Vendor Capabilities	1	0.799	0.460	0.642	**0.970**	0.411	0.312	0.435	0.303	0.707	0.737	0.651
	2	0.808	0.538	0.722	**0.973**	0.429	0.369	0.491	0.324	0.736	0.786	0.682
IT Understanding	1	0.426	0.284	0.361	0.447	**0.923**	0.460	0.414	0.444	0.414	0.342	0.312
	2	0.338	0.309	0.336	0.366	**0.942**	0.561	0.524	0.505	0.391	0.341	0.295
Business Capability	1	0.347	0.283	0.350	0.327	0.476	**0.935**	0.579	0.690	0.416	0.354	0.346
	2	0.337	0.308	0.242	0.336	0.558	**0.950**	0.584	0.766	0.344	0.299	0.332
Relationship Mgt. - Customer	1	0.358	0.289	0.313	0.366	0.479	0.652	**0.893**	0.575	0.364	0.319	0.316
	2	0.430	0.358	0.554	0.486	0.423	0.444	**0.890**	0.402	0.541	0.545	0.517
Customer Capabilities	1	0.308	0.245	0.197	0.315	0.467	0.722	0.507	**0.947**	0.297	0.248	0.251
	2	0.341	0.270	0.200	0.299	0.502	0.746	0.534	**0.952**	0.328	0.285	0.290
Relationship Strength	1	0.607	0.411	0.671	0.634	0.391	0.404	0.518	0.334	**0.925**	0.757	0.653
	2	0.651	0.484	0.698	0.734	0.437	0.385	0.485	0.316	**0.958**	0.810	0.725
	3	0.677	0.477	0.653	0.733	0.389	0.345	0.433	0.283	**0.948**	0.810	0.728
Outsourcing Arrangement Quality	1	0.700	0.482	0.705	0.762	0.374	0.352	0.456	0.264	0.821	**0.936**	0.722
	2	0.650	0.499	0.646	0.726	0.284	0.292	0.486	0.278	0.769	**0.939**	0.772
	3	0.656	0.469	0.671	0.732	0.377	0.330	0.428	0.255	0.789	**0.954**	0.760
Customer Satisfaction	1	0.578	0.579	0.618	0.640	0.325	0.351	0.440	0.312	0.689	0.737	**0.951**
	2	0.558	0.454	0.601	0.635	0.313	0.363	0.455	0.237	0.712	0.767	**0.944**
	3	0.598	0.519	0.652	0.682	0.289	0.309	0.437	0.267	0.722	0.768	**0.959**

Further examination of Table 4 reveals that the loadings for each group of items on their respective constructs are higher than any other items in the same column, indicating that the items measuring a specific construct are more highly correlated with that construct than with any other construct. This is evidence of the internal consistency of the items.

Support for the convergent and discriminant validity of the items may be found by examining the average variance extracted (AVE), or the average variance shared between a given construct and its items. For satisfactory convergent validity, the AVE should be greater than 0.50, indicating that more than 50% of the items'

variance is captured by the construct. For satisfactory discriminant validity, the square root of the AVE for a particular construct should be greater than the correlation between that construct and other constructs, indicating that more variance is shared between the construct and its measurement items than between that construct and another construct (Chin 1998a; Fornell and Larcker 1981). As Table 5 reveals, the AVE of the constructs meet both these conditions.

Table 5: Latent Variable Correlations

	IT Capabl.	Bus. Under.	Rel. Mgt. - Vendor	Vendor Capabl.	IT Under.	Bus. Capabl.	Rel. Mgt. - Cust.	Cust. Capabl.	Relation. Strength	Quality	Satisfac.
IT Capability	**0.974**										
Business Understanding	0.455	**0.960**									
Relationship Mgt. - Vendor	0.630	0.591	**0.936**								
Vendor Capabilities	0.827	0.515	0.703	**0.972**							
IT Understanding	0.406	0.318	0.373	0.433	**0.933**						
Business Capability	0.362	0.313	0.310	0.351	0.550	**0.944**					
Relationship Mgt. - Customer	0.442	0.363	0.486	0.477	0.506	0.616	**0.891**				
Customer Capabilities	0.342	0.271	0.209	0.323	0.510	0.773	0.549	**0.950**			
Relationship Strength	0.684	0.475	0.714	0.743	0.430	0.400	0.507	0.329	**0.943**		
Outsourcing Arrangement Quality	0.709	0.513	0.714	0.784	0.366	0.344	0.484	0.281	0.840	**0.943**	
Customer Satisfaction	0.608	0.543	0.656	0.686	0.325	0.358	0.467	0.285	0.744	0.796	**0.951**

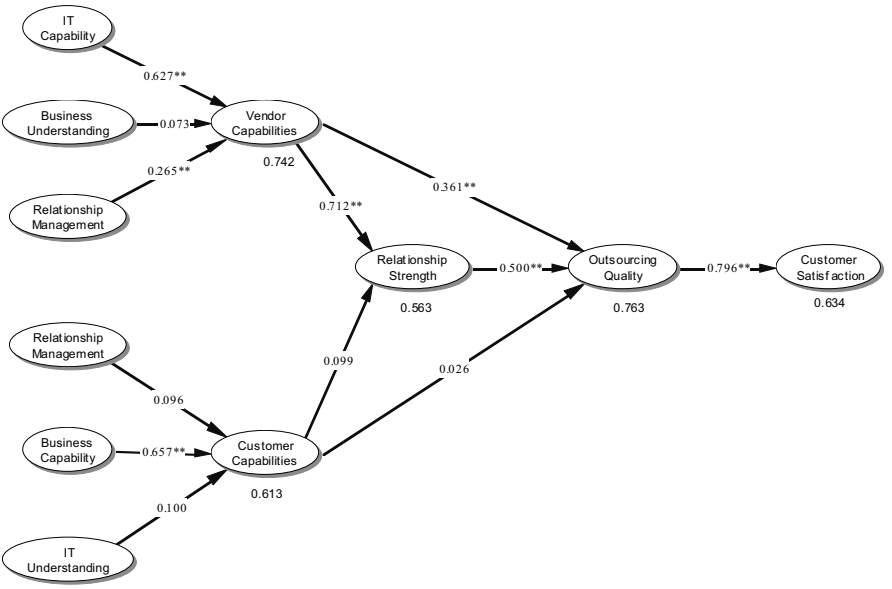
Diagonal values are the square root of the Average Variance Extracted (AVE) for the constructs. For acceptable discriminant validity these values should exceed the latent variable correlations.

Taken as a whole, the preceding analysis of the instrument items provides a basis for accepting that the items used to measure a specific construct do indeed reliably capture the essence of that construct, and differentiate themselves from other constructs. The next step is to examine the relationship among the constructs – the structural model.

5.3.2 Model Assessment

Figure 2 presents the results of the structural model analysis. When using PLS for analysis, the R^2 values are used to evaluate the model's predictive validity by estimating how much of each construct's variance is explained by the model (Barclay et al., 1995). The path coefficients denote the direct effect of one construct on another, similar to regression coefficients (Hoyle, 1995). To be meaningful, path coefficients should meet two criteria: (1) the path coefficient

must be at least 0.20, and (2) it must be statistically significant (Chin, 1998b). Statistical significance in this study was determined using the PLS bootstrap option, with 200 resamples (Chin, 1998a).



** - significant at the .001 level

Figure 2: Structural Model Assessment

6 Results

An inspection of Figure 2 shows that, as predicted, customer satisfaction is strongly associated with the quality of the outsourcing arrangement. The path coefficient of 0.796 is highly significant ($p<.001$), and 63% of the variance of the dependent variable is explained.

As expected, the quality of the outsourcing arrangement is influenced by vendor capabilities, and the strength of the relationship between customer and vendor. The path from relationship strength to quality is significant (0.500, $p<.001$), as is the path from vendor capabilities to quality (0.361, $p<.001$). Against expectations, however, is the finding that the contribution from customer capabilities to quality is insignificant. Altogether, these factors explain 76% of the variance associated with the outsourcing arrangement's quality.

Also as expected, the vendor's overall capabilities play a significant role in shaping relationship strength (0.712, p<.001). However, again contrary to expectations, the influence of customer capabilities on relationship strength is negligible. Taken as a whole, vendor and customer capabilities account for 56% of the relationship strength construct's variance.

Further examination of Figure 2 reveals that, of the three individual capabilities expected to comprise overall vendor capabilities, only two make significant contributions; IT capability (0.627, p>.001), and relationship management capability (0.265, p>.001). The customers responding to the survey did not consider the capability of the vendor to understand the customer's business to be significant. A high percentage of the variance (74%) is captured.

Surprisingly, the only factor significantly associated with the customer's overall capabilities is the customer's business capability (0.657, p<.001). IT understanding and relationship management capability were deemed not significant. In sum, 61% of the variance associated with customer capabilities is captured, albeit mostly by business capability. The implications of these results are discussed in the next section, along with limitations of this study and suggestions for future research.

7 Discussion

The model posited that, overall, the vendor's capabilities would consist of its IT, business understanding, and relationship management capabilities. The results show that IT and relationship management capabilities do in fact comprise a significant portion of the vendor's overall capabilities, with IT capability playing the major role. This is consistent with both the resource-based view of the firm and prior research, which states that one reason firms outsource is to upgrade their IT capability (Cheon et al., 1995; Clark et al., 1995). The finding that the vendor's business understanding is not significantly associated with overall vendor capabilities is not consistent with earlier research that argues for the necessity of IS professionals understanding the needs, constraints, and opportunities confronting the customer (Rockart et al., 1996; Ross et al., 1996). A possible explanation for this may be the underlying premise of the resource-based perspective on outsourcing, which suggests that firms outsource in order to address shortcomings in their capabilities. It seems that the customers in this sample believe their business-related capabilities are sufficient, and hence do not need shoring up from an outsourcing vendor. The strong association of business capability with overall customer capabilities supports this explanation.

Similar to vendor capabilities, the model conjectured that the customer's capabilities in the areas of understanding IT, managing its business, and managing

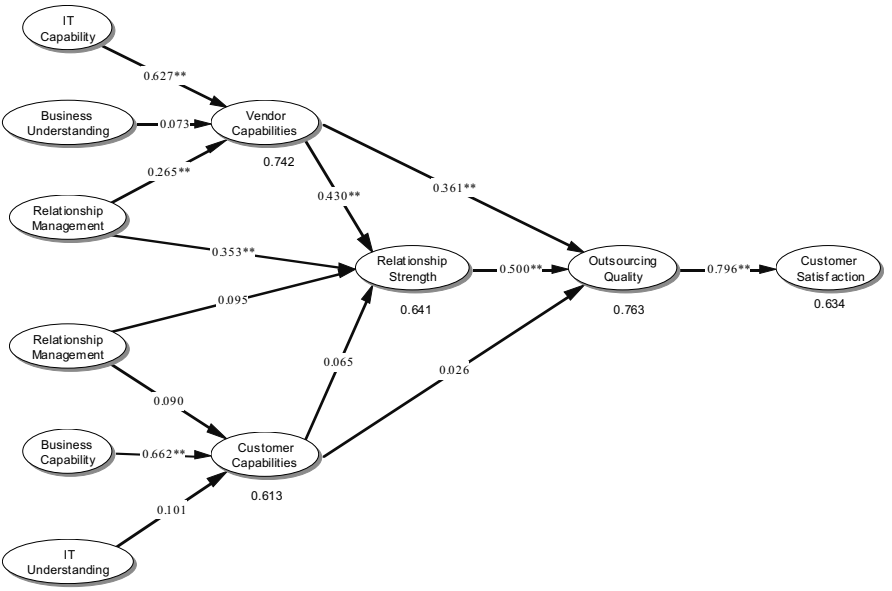
the relationship would combine to form the customer's overall capabilities. The results indicate that only the customer's business capability is significant in this regard. This runs counter to prior research that contends (1) the presence of IT-related expertise in business units has a positive influence, both in general (Rockart et al., 1996) and in an outsourcing context (Willcocks and Kern, 1998); and (2) the capability to help develop and manage the relationship is beneficial to customers (Currie and Willcocks, 1998; Willcocks and Kern, 1998). One way to interpret this is that the customers may think that, as part of the outsourcing process, they lost or transferred to the vendor most if not all of their capability to understand IT, along with the expertise necessary to manage the relationship. Another possible interpretation is that the customers believe the only capability they need is the ability to successfully manage their business, and that the other two capabilities are not critical. There is reason to believe, however, that the competitive advantage derived from outsourcing is driven primarily by the customers ability to integrate their business expertise with the vendors' IT skills (Kern and Willcocks, 2001). Expecting the vendor to do so on its own is contrary to the customer's own lack of faith in the vendor's business understanding capabilities, as indicated in this study.

The finding that relationship strength is based almost solely on the vendor's capabilities, with little input from the customer's capabilities, is surprising. This contradicts prior research that presupposes the criticality of both the customer and the vendor possessing relationship management capabilities (e.g., Kern and Willcocks, 2001), and suggests that, when outsourcing IT, customers do not perceive any connection between their capabilities and the customer/vendor relationship. A disturbing implication of this is that customers may believe they are absolved from any responsibility for building, maintaining, or managing the relationship. In one sense this is understandable, since in the customers' eyes they have contracted with the vendor for the provision of IS solutions, and thus the vendor is responsible for developing and nurturing the relationship that oversees the delivery of those solutions. Enticing though this belief might be to customers, however, they should bear in mind that while they can outsource activities and processes, they cannot totally abdicate their responsibility for managing the relationship. This goes beyond monitoring metrics or service levels to include addressing strategic, policy, and governance issues (McFarlan and Nolan, 1995).

Vendor capabilities are a key factor in determining the quality of the outsourcing arrangement. This is logical, in that the capability to synergistically combine IT resources and capabilities with other resources and capabilities is likely to have a positive effect on performance (Bharadwaj, 2000). Perplexingly, however, customer capabilities do not make a meaningful contribution. In fact, the influence of customer capabilities on quality is almost non-existent. When coupled with the finding that relationship strength is based almost exclusively on the vendor's capabilities, with little input from the customer's capabilities, this becomes

downright mystifying. Consequently, an alternate model was constructed and analyzed (Figure 3).

The alternate model adds direct links from the vendor's and the customer's relationship management capabilities to relationship strength. The model was assessed following the same procedures and parameters as the original model. The results are shown in Figure 3.



** - significant at the .001 level

Figure 3: Alternate Model Assessment

The increase in r^2 for relationship strength in the alternate model is both substantial and significant (from 0.563 to 0.641). However, once again the only significant contribution comes from the vendor, a combination of the direct effect of the vendor's relationship management capability (path coefficient of 0.353, p>.001) and the vendor's overall capabilities (0.430, p>.001). Since this continues to fly in the face of previous research, the model was subjected to additional scrutiny. An interaction effect between customer and vendor capabilities was modeled and tested (see Chin et al, 2003, for a discussion of the PLS modeling approach for interaction effects). A test of this new model did not reveal any significant interaction effect on either relationship strength or outsourcing arrangement quality.

One possible explanation for this puzzling result is that, similar to relationship strength, the customer believes that the primary burden for ensuring the quality of

the outsourcing arrangement should be shouldered by the vendor. To reiterate, however, it is a mistake for the customer to overly rely on the vendor. As Kern and Willcocks (2001) point out, customers often assume that vendors have adequate capabilities in the areas of business skills, customer awareness, and service delivery, but these assumptions are not always warranted. When the vendor does have shortcomings in one or more of these areas that affect the quality of the outsourcing arrangement, it is the customer who is most impacted. Thus it is in the customer's best interest to ensure that it has its own internal capabilities to at a minimum monitor, and preferably collaborate with, the vendor to establish an acceptable level of quality.

Moving on, relationship strength is a key predictor of the quality of the outsourcing arrangement, as hypothesized. This indicates that the relationship enhances the overall quality of the outsourcing arrangement above and beyond the direct contributions of vendor and customer capabilities, and is worthy of study in its own right. One cautionary note should be sounded, however. It is unlikely that a strong relationship by itself can overcome a low level of IT capability on the part of the vendor. There is a minimum threshold of technical competence that must be met in order for an outsourcing arrangement to be effective.

Finally, the robust link between quality and satisfaction indicates that quality is crucial for outsourcing success. When there is a high-quality outsourcing arrangement in place, customers perceive the outsourcing experience to be successful. Thus it becomes critical to focus on the determinants of quality, which in this case are vendor capabilities (particularly the vendor's IT capability) and relationship strength. Researchers and practitioners seeking deeper insight into outsourcing success would be well advised to focus on these factors.

7.1 Limitations and Implications

As with any study, this one is subject to certain limitations that should be taken into account when considering implications for practitioners and researchers. First, the study is based on a convenience sample that is biased towards large corporations. Second, the data was gathered via a survey, which implies a 'snapshot' perspective, as opposed to a longitudinal outlook. Finally, for the sake of parsimony, several of the constructs have been modeled as unidimensional, when it may very well be that they are multidimensional. For example, it is possible to decompose the IT capability construct into functional components (e.g., Ravichandran and Lertwongsatien, 2005). Similarly, quality may be viewed as a composite of system, information, and service quality dimensions (e.g., Myers et al., 1997).

A noteworthy implication of this study for managers at vendor firms is that the customer evaluates the vendor primarily in terms of technical capability. Customers also take into consideration the vendor's capability for managing the

relationship, but downplay the vendor's understanding of the customer's business. On the other hand, customer managers should beware the temptation to overly depend on the vendor to ensure the outsourcing arrangement's quality. It is the customer who is most affected by the outsourcing arrangement, and thus it is the customer who is ultimately responsible for the quality of that arrangement.

Implications of this study for researchers arise from a combination of the limitations and implications for managers. For example, the vendor's IT capability exerts a strong downstream influence on quality, with a subsequent impact on satisfaction. As noted, technical capability can be modeled as the culmination of multiple components, enabling a finer-grained understanding of the construct. Similarly, quality can be viewed as the amalgamation of system, information, and quality dimensions, leading to richer insight into the phenomenon. There is also the opportunity to examine the model and its constructs across different types and sizes of firms, and to extend it temporally.

Finally, both managers and researchers should take note of the substantial role that the relationship plays as a determinant of quality. It has a greater impact than any other antecedent to quality, indicating that it merits resolute oversight and nurturing from managers on both sides of the relationship, and warrants closer examination by researchers.

8 Conclusion

This study constructed and tested a model founded on the resource-based view of the firm that explains how customer and vendor capabilities influence the relationship strength, quality, and ultimate success of an outsourcing arrangement. The empirical results indicate that the vendor's IT and relationship management capabilities combine to form the vendor's overall capabilities. These two capabilities also play a major role in shaping the strength of the customer/vendor relationship. Vendor capabilities and relationship strength are predictive of the outsourcing arrangement's quality, which goes on to strongly influence outsourcing success, as measured by customer satisfaction. Surprisingly, the customer's capabilities do not play a significant role in any aspect of the model.

These results serve to highlight the importance of the relationship in an outsourcing context, and provide evidence of the connection between vendor capabilities, the customer/vendor relationship, and the quality and ultimate success of the outsourcing arrangement. As such, this study provides additional evidence supporting the applicability of the resource-based view of the firm as a vehicle for exploring the outsourcing phenomenon, and serves as a steppingstone for more intense examination of the capabilities associated with outsourcing quality, along

with the role played by the customer-vendor relationship in determining outsourcing success.

References

Amit, R. and Schoemaker, P. J. H. (1993) "Strategic Assets and Organizational Rent," *Strategic Management Journal*, (14:1), pp. 33-46.

Anderson, J. and Narus, J. (1984) "A Model of the Distributor's Perspective of Distributor-Manufacturer Form Working Relationships," *Journal of Marketing*, (48:4), pp. 62-74.

Anderson, E. W., and Sullivan, M. W. (1993). "The Antecedents and Consequences of Customer Satisfaction for Firms," Marketing Science, (12:2), pp. 125-143.

Aubert, B. A., Dussault, S., Patry, M., and Rivard, S. (1999) "Managing the Risk of IT Outsourcing," *Hawaii International Conference on Systems Sciences*, pp. 685-691.

Barclay, D., Thompson, R., and Higgins, C. (1995) "The Partial Least Squares (PLS) Approach to Causal Modeling: Personal Computer Adoption and Use as an Illustration," *Technology Studies*, (2:2), pp. 285-309.

Barney, J. B. (1991) "Firm Resources and Sustained Competitive Advantage" *Journal of Management*, (17:1), pp. 99-120.

Bassellier, G., and Benbasat, I. (2004), "Business Competence of Information Technology Professionals: Conceptual Development and Influence on IT-Business Partnerships," *MIS Quarterly*, (28:4), pp. 673-694.

Bharadwaj, A. 2000. "A Resource-Based Perspective on Information Technology Capability and Firm Performance: An Empirical Investigation," *MIS Quarterly* (24:1), 2000, pp. 169-196.

Cheon, M. J., Grover, V., and Teng, J. T. C. (1995) "Theoretical Perspectives on the Outsourcing of Information Systems," *Journal of Information Technology*, (10:4), pp. 209-219.

Chin, W. W. (1998a) "The Partial Least Squares Approach for Structural Equation Modeling," In Marcoulides, G. (Ed.): Modern Methods for Business Research. Lawrence Erlbaum Associates, Mahwah, NJ 1998, pp. 295-336.

Chin, W. W. (1998b) "Issues and Opinion on Structural Equation Modeling," *MIS Quarterly*, (22:1), pp. vii-xvi.

Chin, W. W., Marcolin, B. L., and Newsted, P. R. (2003) "A Partial Least Squares Latent Variable Modeling Approach for Measuring Interaction Effects: Results from a Monte Carlo Simulation Study and an Electronic-Mail Emotion/Adoption Study," *Information Systems Research*, (14:2), pp. 189-217.

Clark, C. E., Cavanaugh, N. C., Brown, C. V., and Sambamurthy, V. (1997) "Building a Change Ready IS Organization at Bell Atlantic," *MIS Quarterly*, (21:4), pp.425-455.

Clark, T. D., Zmud, R. W., and McCray, G. E. (1995) "The Outsourcing of Information Systems: Transforming the Nature of Business in the Information Industry," *Journal of Information Technology*, (10:4), pp. 221-237.

Cross, J (1995) "IT Outsourcing: British Petroleum," *Harvard Business Review* (73:3), pp. 94-102.

Currie, W. and Willcocks, L. (1998) "Analysing four types of IT sourcing decisions in the context of size, client/supplier interdependency and risk mitigation", *Information Systems Journal*, (8:2), pp. 119-143.

Day, G. S. (1994), "The Capabilities of Market-Driven Organizations," *Journal of Marketing*, (58:4), pp. 37-52.

DeLone, W., and McLean, E. (1992) "Information Systems Success: The Quest for the Dependent Variable," *Information Systems Research*, (3:1), pp. 60-95.

DeLone, W.; McLean, E. (2002) "Information Systems Success Revisited," *Hawaii International Conference on Systems Sciences*, pp. 238.

Dibbern, J., Goles, T., Hirschheim, R., and Jayatilaka, B. (2004) "Information systems outsourcing: A survey and analysis of the literature," *The DATA BASE for Advances in Information Systems*, (35:4), pp. 6-102.

Dibbern, J., Güttler, W., and Heinzl, A. (2001) "Die Theorie der Unternehmung als Erklärungsansatz für das selektive Outsourcing der Informationsverarbeitung,". *Zeitschrift für Betriebswirtschaft* (6), pp. 675-699.

DiRomualdo, A. and Gurbaxani, V. (1998) "Strategic Intent for IT Outsourcing," *Sloan Management Review*, (39:4), pp. 67-80.

Duncan, N. B. (1998) "Beyond Opportunism: A Resource-based View of Outsourcing Risk," *Hawaii International Conference on Systems Sciences*, pp. 675-684.

Dyer, J. H. and Singh, H. (1998), "The Relational View: Cooperative Strategy and Sources of Interorganizational Competitive Advantage," *Academy of Management Review*, (23:4), pp. 660-679.

Feeny, D. F., and Willcocks, L. P. (1998), "Core IS Capabilities for Exploiting Information Technology*," Sloan Management Review* (39:3), pp. 9-21.

Fornell, C. and Larcker, D. (1981) "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error," *Journal of Marketing Research*, (18), pp. 39-50.

Grant, R. M. (1991) "The Resource-based Theory of Competitive Advantage: Implications for Strategy Formulation," *California Management Review*, (33:3), pp. 114-135.

Grover, V., Cheon, M. J., and Teng, J. T. C. (1994) "A Descriptive Study on the Outsourcing of Information Systems Functions," *Information & Management*, (27:1), pp. 33-44.

Grover, V., Cheon, M. J., and Teng, J. T. C. (1996) "The Effect of Service Quality and Partnership on the Outsourcing of Information Systems Functions," *Journal of Management Information Systems*, (12:4), pp. 89-116.

Henderson, J. C. (1990) "Plugging into strategic partnerships: The critical IS connection," *Sloan Management Review*, (31:3), pp. 7-18.

Hoyle, R. (1995) "The Structural Equation Modeling Approach: Basic Concepts and Fundamental Issues," In Hoyle, R. (Ed.), Structural Equation Modeling: Concepts, Issues, and Applications, Sage Publications, Thousand Oaks, CA 1995, pp. 1-15.

Huber, R. L. (1993) "How Continental Bank Outsourced its 'Crown Jewels'," *Harvard Business Review*, (71:1), pp. 121-129.

Kern, T. (1997) "The Gestalt of an Information Technology Outsourcing Relationship: An Exploratory Analysis," *International Conference on Information Systems*, pp. 37-58.

Kern, T. and Willcocks, L. P. (2000) Exploring Information Technology Outsourcing Relationships: Theory and Practice, *Journal of Strategic Information Systems*, (9:4), pp. 321-350.

Kern, T. and Willcocks, L. P. (2001) "The Relationship Advantage: Information Technologies, Sourcing, and Management," Oxford University Press, Oxford 2001.

Kishore R, Rao H.R., Nam K., Rajagopalan S. and Chaudhury A. (2003), "A Relationship Perspective on IT outsourcing: Insights from a Longitudinal Study" *Communications of the ACM*, (46:12), pp. 86-92.

Klein, K. J., Palmer, S. L., and Conn, A. B. (2000). "Inter-organizational relationships: A multilevel perspective." In Klein, K. J. and Kozlowski, S. W. J., (Eds.): Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions, Society for Industrial and Organizational Psychology Frontiers Series. San Francisco: Jossey-Bass 2000, pp. 267-307.

Koh, C., Ang, S., and Straub, D. (2004), "IT Outsourcing Success: A Psychological Contract Perspective," *Information Systems Research*, (15:4), pp. 356-373.

Lacity, M. C. and Hirschheim, R. (1993) "The Information Systems Outsourcing Bandwagon," Sloan Management Review, (35:1), pp. 73-86.

Lacity, M. C. and Willcocks, L. P. (1998) "An Empirical Investigation of Information Technology Sourcing Practices: Lessons from Experience," *MIS Quarterly*, (22:3), pp. 363-408.

Lacity, M. C. and Willcocks, L. P. (2000) "Relationships in IT Outsourcing: A Stakeholder Perspective," In Zmud, R. W. (Ed.): Framing the Domains of IT Management: Projecting the Future Through the Past, Pinnaflex Educatinal Resources, Inc., Cincinnati 2000, pp. 355-385.

Lacity, M. C. and Willcocks, L. P. (2001) Global Information Technology Outsourcing: In Search of Business Advantage, John Wiley & Sons, Chichester 2001.

Lacity, M.C., Willcocks, L.P., and Feeny, D.F., (1996). "The Value of Selective IT Sourcing." *Sloan Management Review*, 37(3). pp. 13-25.

Lee, J.-N. and Kim, Y.-G. (1999) "Effect of Partnership Quality on IS Outsourcing Success: Conceptual Framework and Empirical Validation," *Journal of Management Information Systems*, (15:4), pp. 29-61.

Lee, D., Trauth, E., and Farwell, D. (1995) “Critical Skills and Knowledge Requirements of IS Professionals: A Joint Academic/Industry Investigation,” *MIS Quarterly*, (19:3), pp. 313-340.

Lorenzoni, G. and Lipparini, A. (1999) “The Leveraging of Interfirm Relationships as a Distinctive Organizational Capability: A Longitudinal Study,” *Strategic Management Journal*, (20) pp. 317-338.

Makadok, R (2001) “Toward a Synthesis of the Resource-based and Dynamic Capability Views of Rent Creation,” *Strategic Management Journal*, (22), pp. 387-401.

Mata, F.J., Fuerst, W.L., and Barney, J.B. (1995) "Information technology and sustained competitive advantage: A resource-based analysis," *MIS Quarterly* (19:4), pp 487-505.

McFarlan, F. and Nolan, R. (1995) "How to Manage an IT Outsourcing Alliance." *Sloan Management Review*, Winter 1995, 9-23.

Myers, B., Kappelman, L., and Prybutok, V. (1997) "A Comprehensive Model for Assessing the Quality and Productivity of the Information Systems Function: Toward a Theory for Information Systems Assessment." *Information Systems Management Journal*, 10(1), pp. 6-25.

Nam, K., Rajagopalan, S., Rao, H., and Chaudhury, A. (1996) “A Two-level Investigation of Information Systems Outsourcing,” *Communications of the ACM*, (39: 7), pp. 36-44.

Nelson, R. R.; Todd, P. A.; Wixom, B. H. (2005) “Antecedents of Information and System Quality: An Empirical Examination Within the Context of Data Warehousing,” *Journal of Management Information Systems*, Spring 2005, (21:4), pp. 199-235.

Penrose, E. T. (1959) The Theory of the Growth of the Firm. Wiley, New York 1959.

Prahalad, C.K., and G. Hamel. (1990), “The Core Competence of the Corporation,” *Harvard Business Review*, (68:3), pp. 79-91.

Ravichandran, T. and Lertwongsatien, C. (2005), “Effect of Information Systems Resources and Capabilities on Firm Performance: A Resource-Based Perspective,” *Journal of Management Information Systems*, (21:4), pp. 237-276.

Ray, G., Barney, J. B., and Muhanna, W. A. (2004), “Capabilities, Business Processes, and Competitive Advantage: Choosing the Dependent Variable in Empirical Tests of the Resource-Based View,” *Strategic Management Journal*, (25:1), pp. 23-37.

Rockart, J. (1988) “The Line Takes the Leadership - IS Management in a Wired World,” *Sloan Management Review*, (29:4), pp. 57-64.

Rockart, J. F., M. J. Earl, and Ross, J. W. (1996) “Eight imperatives for the new IT organization*,” Sloan Management Review*, (38:1), pp. 43-55.

Ross, J., Beath, C., and Goodhue, D. (1996) “Develop Long-Term Competiveness Through IT Assets,” *Sloan Management Review*, (38:1), pp. 31-42.

Roy, V., and Aubert, B. A. (2002) “A Resource-Based Analysis of IT Sourcing,” *The DATA BASE for Advances in Information Systems*, (33:2), pp. 29-40.

Saunders, C., Gebelt, M., and Hu, Q. (1997) “Achieving Success in Information Systems Outsourcing*,” California Management Review*, (39:2), pp. 63-79.

Seddon, P. (1997) "A Respecification and Extension of the DeLone and McLean Model of IS Success*," Information Systems Research*, (8:3), pp. 240-253.

Swinarski, M. E., Kishore, R., and Rao, H. R. "Impact of Vendor Capabilities on ASP Performance," In Information Systems Outsourcing: Enduring Themes, Emergent Patterns, and Future Directions, R. Hirschheim, A. Heinzl, and Jens Dibbern (Eds.), Springer-Verlag, Berlin, 2002.

Teece, D. J., Pisano, G., and Shuen, A. (1997) "Dynamic capabilities and strategic management" *Strategic Management Journal*, 18(7), pp. 509-533.

Teng, J. T. C., Cheon, M. J., and Grover, V. (1995) "Decisions to Outsource Information Systems Functions: Testing a Strategic-Theoretic Discrepancy Model," *Decision Sciences*, (26:1), pp. 75-103.

Thibaut, J. W. and Kelly, H. (1959) "The Social Psychology of Groups," John Wiley & Sons, New York 1959.

Wade, M. and Hulland, J. (2004) The Resource-Based View and Information Systems Research: Review, Extension and Suggestions for Future Research. *MIS Quarterly* 28(1) 107-142.

Wernerfelt, B. (1984) "A Resource-based View of the Firm," *Strategic Management Journal*, (16:3), pp. 171-180.

Whyte, G., A. Bytheway, and C. Edwards, "Understanding User Perceptions of Information System Success," *Strategic Information Systems*, 6 (1997), 35-68.

Willcocks, L. P., and Kern, T. (1998), "IT outsourcing as strategic partnering: the case of the UK Inland Revenue." *European Journal of Information Systems*, (7:1), 29-45.

Willcocks, L. P. and Lacity, M. C. (1998) "Strategic Sourcing of Information Systems: Perspectives and Practices," John Wiley & Sons, Chichester 1998.

Appendix: Items and Descriptive Statistics

Construct	Item	Mean	Std. Dev.	Load-ing	Comp Reliab.
Vendor IT Capability	The vendor has strong IT capabilities.	4.99	1.2910	0.98	0.974
	The vendor has a high degree of IT competence.	4.91	1.3475	0.97	
Vendor Business Under-standing	The vendor has a good understanding of our business.	4.85	1.3334	0.96	0.959
	The vendor knows the basic principles of our business.	5.09	1.3060	0.96	
Vendor Relationship Manage-ment Capability	The vendor has good relationship management capabilities.	4.56	1.4642	0.94	0.934
	The vendor has the capability to effectively manage the outsourcing arrangement.	4.81	1.2511	0.93	
Overall Vendor Capabilities	The vendor's overall capabilities are outstanding.	4.57	1.4094	0.97	0.971
	The overall capabilities of the vendor are first-rate.	4.39	1.4436	0.97	
Customer Relationship Management Capability	My organization has good relationship management capabilities.	5.21	1.1792	0.89	0.885

Construct	Item	Mean	Std. Dev.	Load-ing	Comp Reliab.
	My organization has the capability to effectively manage the outsourcing arrangement.	5.22	1.3323	0.89	
Customer Business Capability	Our business is well run.	5.12	1.2511	0.94	0.943
	My organization manages its business competently	5.39	1.2057	0.95	
Customer IT Under-standing	My organization understands IT as it applies to our business.	5.52	1.3033	0.92	0.931
	My organization grasps the fundamentals of IT as they relate to our business.	5.63	1.2558	0.94	
Overall Customer Capabilities	My organization's overall capabilities are outstanding.	5.35	1.0555	0.95	0.949
	The overall capabilities of my organization are first-rate	5.46	1.0323	0.95	
Relationship Strength	The overall relationship between both parties is good.	5.01	1.3653	0.93	0.961
	In general, we have a solid relationship with the vendor.	4.92	1.5178	0.96	

Construct	Item	Mean	Std. Dev.	Load-ing	Comp Reliab.
	Overall, our relationship with the vendor is strong.	4.77	1.5713	0.95	
Outsourcing Arrangement Quality	The overall quality of the outsourcing arrangement is good.	4.81	1.5112	0.94	0.960
	The quality of the outsourcing arrangement, as a whole, is first-class.	4.38	1.5467	0.94	
	By and large, the overall quality of the outsourcing arrangement is high.	4.64	1.5828	0.95	
Customer Satisfaction	My firm is satisfied with the outsourcing arrangement.	4.45	1.6553	0.95	0.966
	Overall, my organization regards the outsourcing arrangement as satisfactory.	4.52	1.6874	0.94	
	My firm's level of satisfaction with the outsourcing arrangement is high.	4.15	1.6210	0.96	

Part V:

Vendor View and Individual Level Perspective

Vendor Strategies in the German Market for Information Technology and Business Process Outsourcing[1]

Alexander Georgius

Peters, Schönberger & Partner, München, Schackstr. 2, 80539 München, Germany

Armin Heinzl, Jens Dibbern

Department of Information Systems I, University of Mannheim, Schloss, D-68131 Mannheim, Germany

1 Introduction

Within the past three years, the global outsourcing market has saturated at a level of around €57 billion (TPI 2005). When taking a closer look, however, one may observe that the outsourcing market is by no means a steady one. Interestingly, the share of the United States in the global outsourcing market – which has so far been predominant – has declined from 53.7% in 2002 to 42.3% in 2004. In contrast, Europe has seen considerable growth in information technology and business process outsourcing. The UK, which has provided a favorable climate for outsourcing resulting from government regulations since the mid 1990s, has been a driver of this development (Currie 1996). And even in Germany, where outsourcing has traditionally been considered a much harder business due to a more conservative management philosophy as well as legal and institutional constraints, the figures show a considerable rise in the worldwide market share from a relatively low 3.9% in 2003 (6.1% in 2002) to a substantial number of 12.5% in 2004 (TCI 2005).

Although these figures should be treated with some caution, they clearly indicate a shift towards a more balanced global market share, signaling the rising maturity of the global outsourcing market. This is also indicated by fierce competition among outsourcing vendors in gaining customer accounts. For example, the number of

[1] A shortened German version of this paper appeared in the Proceedings of the 7th "Internationale Tagung Wirtschaftsinformatik", 2005. We gratefully acknowledge the comments form Rudy Hirschheim and Jessica Winkler for revising this version.

vendors participating in the top 100 outsourcing deals worldwide increased from 26 in 2003 to 34 in 2004 (IDC 2005). Moreover, local vendors in western countries are faced with a growing number of competitors from offshore regions, such as India.

Research has begun to recognize these global market shifts in outsourcing expenditures. The phenomenon of offshore outsourcing has been taken on by researchers very promptly (e.g., Apte et al. 1995; Carmel et al. 2001; Gopal et al. 2002; Heeks et al. 2001; Nicholson et al. 2001; e.g., Sobol et al. 1995). Furthermore, an increasing number of studies has emerged addressing IS outsourcing behavior in central European countries (Barthélemy et al. 2001; 2005), including comparisons to the outsourcing behavior of leading outsourcing countries such as the US (Dibbern 2004).

What stands out from the existing body of research, however, is that the phenomenon of IS outsourcing has almost exclusively been addressed from the client's point of view. This focus on the *demand* side of outsourcing is most prevalent in the majority of the studies which analyze the client organizations' outsourcing behaviors, seeking to answer questions such as why to outsource, what to outsource, how to organize the decision process, how to build and manage outsourcing relationships, and how to evaluate and to determine the success of sourcing arrangements (Dibbern et al. 2004). Only recently, researchers have begun to also consider the *supply* side of outsourcing (Ang et al. 2001; Goles 2001; Hirschheim et al. 2002; Levina et al. 2003; Michell et al. 1997; Schultze et al. 2000). Although bringing in a vendor perspective, however, the theoretical reasoning and empirical implications of these studies have largely been influenced by a client viewpoint.

In an attempt to address this obvious lack of research that approaches IS outsourcing from a vendor perspective, this study sets a focus on the analysis of vendor strategies in the IS outsourcing market. Specifically, our goal is to develop a taxonomy that allows for an identification of strategic vendor positioning, associated critical success factors, as well as potential avenues for strategy shifts.

For this purpose, we conducted a qualitative empirical study involving ten of the top IT vendors in the German outsourcing market. In the following, the conceptual framework which guided our research will be introduced, empirical findings will be presented and final conclusions will be drawn.

2 Conceptual Framework

Our conceptual framework encompasses those elements and the relationships among those elements that together form the strategy of an IT or BPO vendor. In general, strategy has been defined in various ways, e.g. as "the determination of

the basic long-term goals and objectives of an enterprise, the adoption of courses of action and the allocation of resources necessary for carrying out these goals" (Chandler 1962), as "the selection of product mix and markets" oriented toward the achievement of "an impedance match between the firm and the environment" (Ansoff 1965), or as "a process for generating viable directions that lead to satisfactory performance in market place" (Evered 1983).

For the purpose of this research we adopted the general strategy concept by Becker (2002) who stated that strategy refers to an enduring set of specified targets, principles or guidelines that together determine the actual frame of action as well as the specific direction of impact of corporate action. Strategy formation serves as the main bridge between corporate objectives and the operative measures taken to achieve these objectives. One instrument that helps to build such a bridge between high level objectives and operative implementation is the concept of Critical Success Factors (CSF) (Daniel 1961; Rockart et al. 1989). CSF refer to "those characteristics, conditions, or variables that when properly sustained, maintained, or managed can have a significant impact on the success of a firm competing in a particular industry" (Leidecker et al. 1984).

The success of an IT or BPO service provider can be measured using key financial indices such as sales, profit, or return on investment (ROI). Moreover, more market-related indicators, such as (relative) market share, number of new customer acquisitions, rate of extensions or terminations of existing contracts, or acquisition of new industry and business process know-how may be used.

These indicators of vendor success can be influenced by both internal and external forces as depicted in Figure 1. The *internal* critical success factors may be divided into vendor success factors and relationship success factors. *Vendor success factors* may include issues such as the pricing strategy, the service and product portfolio, the organizational structure, or standard procedures established by the vendor for gaining new and maintaining established customer accounts. These factors have an influence on all of the current and potential customer accounts, which may be characterized by a 1:n notation. In contrast, *relationship success factors*, are those factors that are mediated by the success of a specific relationship with a customer. For example the established type of contract, the quality of the partnership, or the inclusion of third parties within a specific customer relationship may impact client satisfaction, which in turn is a prerequisite for sustained success in the market. Accordingly, these dyadic relationship factors may be characterized by a 1:1 notation. Thus, the success of the provider is influenced both by the success of each single relationship, reflected by the satisfaction of the customer, and more general vendor qualities that are applicable for multiple outsourcing accounts.

In addition to these internal CSF, however, the *external* environment may not be neglected (Wright et al. 1994). "External shocks" can directly or indirectly impact the success of the vendor, e.g. through the entrance of new low wage offshore

vendors into the market, or technological innovations to which vendors need to respond. They provide both risks and opportunities for the vendor's success in the market. In general, two types of environmental CSF may be distinguished (Wright et al. 1994): macro environmental factors and industry-specific factors. *Macro level* factors can hardly be influenced by an organization. They include the political and legal surroundings, the economic situation, sociologic and cultural issues, as well as technological changes (Farmer et al. 1964). *Market or industry-specific* factors refer to the direct competitive environment of an organization. They may be analyzed by using Porter's (1985) well known concept of the five competitive forces.

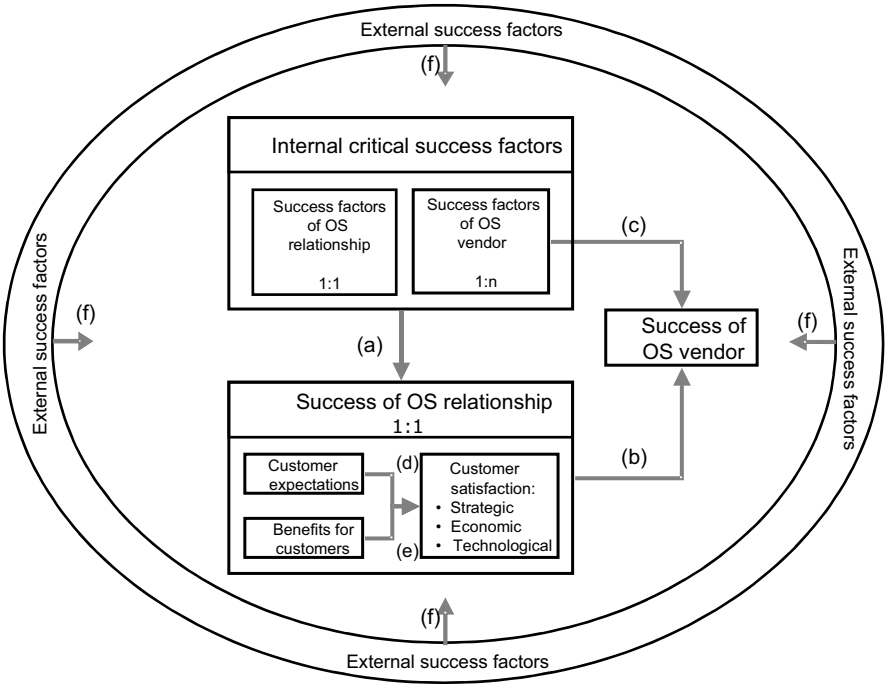


Figure 1: Framework of Critical Success Factors

In the following, we take a closer look at internal CSF. They can be influenced more easily by IT and BPO vendors – although we recognize that in particular large vendors can shape their competitive environment to a certain extent.

2.1 Analysis of Internal CSF

In order to further analyze the main internal success factors of IT and BPO vendors, the *value chain* approach can be applied. Figure 2 shows a simplified model of the value chain of IT and BPO providers. Five different business

processes, i.e. phases of transactions that reflect the service life cycle with a customer, are distinguished (Ives et al. 1984; Picot et al. 1992). For each of the phases, a number of success factors were identified based on previous research on IS outsourcing (see Dibbern et al. 2004).

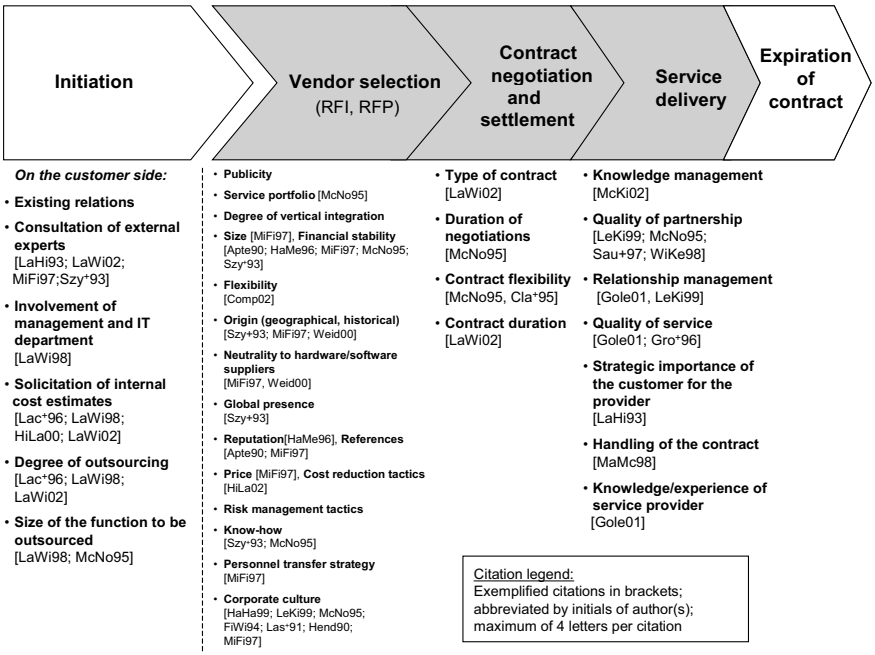


Figure 2: Identification of Internal Critical Success Factors

These CSF can be categorized by two dimensions as depicted in Figure 3. First of all, they may be divided into relationship success factors and vendor success factors, as introduced earlier (x-axis of Figure 3). Secondly, they may be separated into factors that can directly be influenced and those that can only indirectly be influenced by the vendor (y-axis). Examples for *relationship factors* that can *directly* be influenced by the vendor are contractual issues or relationship management issues (quadrant 1). *Indirect* influence on relationship issues can be exerted by influencing client behavior in a positive direction, e.g., by ensuring that the client organization goes through a sophisticated decision process or that the client retains or builds up appropriate contracting and managing capabilities (quadrant 2).

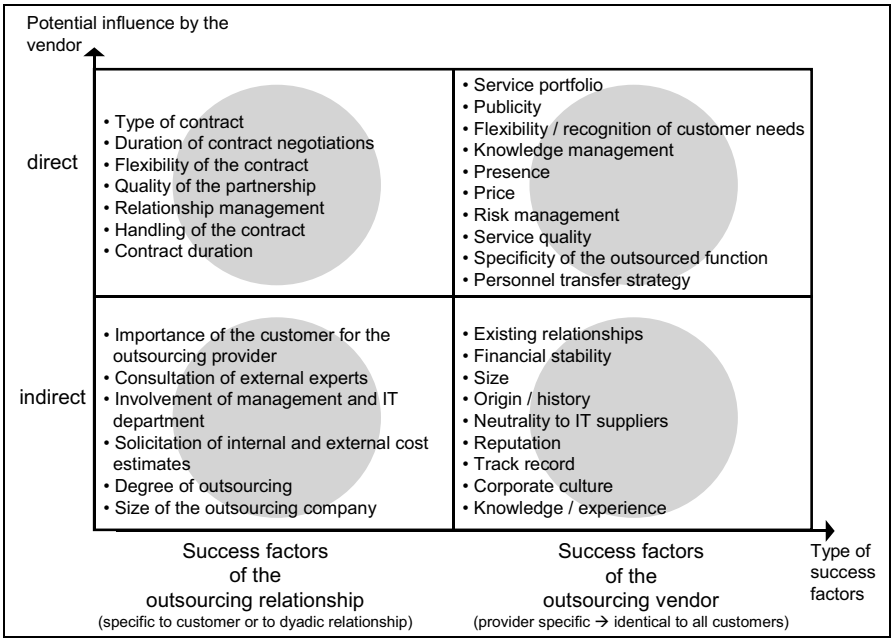


Figure 3: Classification of Internal Critical Success Factors

On the other hand, *direct* impacts on *vendor related success factors* are characterized by immediate effects on a large number of current and potential customer accounts. Examples are a new pricing strategy or the implementation of new organization wide mechanisms to ensure service quality (quadrant 3). *Indirect* impacts take much longer to materialize. They can only be achieved by long-term efforts. For example, financial stability or financial strength is often seen as an important factor for clients when choosing among different vendors, however, they are difficult to manipulate for vendors (quadrant 4). It should be noted, however, that in particular between Quadrant 3 an 4, there is no fixed line that separates CSF into direct or indirect influences. For example, gaining industry-specific knowledge and experiences usually takes a long time for vendor personnel to achieve and, therefore, may not be immediately influenced by the vendor. At the same time, however, a vendor may take over the personnel or build a joint venture with a key player in the industry, or acquire an industry specific vendor and, thereby, get access to intellectual capital in a much more direct and immediate way.

2.2 Analysis of Strategy Profiles

Having outlined a set of preconceptions about "what" may influence vendor success, the next step is to analyze "how" a vendor can act in these key areas of

influence on success. For this purpose we will adopt the multidimensional market-oriented strategy concept by Becker (2002). It focuses on a number of key variables that make up four different strategy layers.

The first layer represents the *growth strategy*. According to the well known Ansoff product-market matrix (Ansoff 1958; 1965), vendors may follow a market penetration strategy (existing services and markets), a product development strategy (new services / existing markets), a market development strategy (existing services / new markets), or a diversification strategy (new services and markets).

The second layer refers to the *market stimulation* or *competitive strategy*. According to Porter (1985) an organization may choose between a low cost strategy and a differentiation strategy. While Porter argued that both are mutually exclusive, empirical evidence has shown that often they can successfully be adopted simultaneously (Wright 1988).

Third, the *market parceling* strategy determines the extent and manner of market coverage. On the one hand, an organization may serve an entire market with the same type of service either completely or partially. This equals an undifferentiated mass strategy. On the other hand, the entire market may be divided into segments. An organization may then choose to either serve a small selection of segments (focus strategy) or it may serve each with a specific type of service (differentiated segmentation strategy).

Finally, the *market area* strategy refers to the targeted marketing space in terms of regional coverage. For the purpose of this research, we distinguish between a national, a multi-national, an international, and a world market strategy (Becker 2002; based on Perlmutter 1969).

In summary, the development of a market strategy requires the specification and combination of these four layers into a coherent whole. The options within each layer may be referred to as strategic building blocks. Linking selected building blocks across the layers results in organization specific strategy profiles. These strategy profile can be linked to the critical success factors identified earlier. This allows to answer questions such as how vendors can succeed in the market given a certain strategy profile or what actions to take in order to change the strategy profile, e.g. entering into new markets. In order to explore these linkages, empirical data was gathered among German IT and BPO vendors.

3 Methodology

Based on the conceptual foundation for analyzing vendor strategies we conducted interviews with a series of IT and BPO vendors in Germany. The qualitative

research method corresponds with the exploratory nature of our research (Eisenhardt 1989; Yin 1999). Although we laid down our preconceptions of potential critical success factors and main building blocks of strategy formation, we neither consider them as complete nor are we clear about the linkages between them. Conducting interviews with key decision makers of multiple vendors allows us to understand strategy formation from the perspective of our research subjects and to consider the rich context in which strategizing takes place.

For our data collection we contacted 15 IT and BPO vendors in Germany. Ten of them participated in our study. All of the companies are leading providers in the German outsourcing market. According to a market research study by Pierre Audoin Consultants (PAC), seven of them belong to the TOP 10 service providers in Germany. In 2000, they achieved the highest turn-over figures in the German outsourcing market (N/A 2002). It was ensured that each of our interview partners was at the executive level and had a very good understanding of the outsourcing market as well as of the vendor's history, current situation and future directions. Since anonymity and confidentiality was ensured to the participating firms, no further information can be provided about the sample of vendors.

Data collection took place from fall 2002 until fall 2003. The interviews lasted between 1.5 and 2.5 hours. As agreed by our respondents, the interviews were tape-recorded and transcribed. Only one participant denied the recording. Every participant received a transcription of the interview in order to correct or revise statements if necessary. To carry out the data analysis, the data were aggregated in a table. This allowed us to illustrate and compare the instances of the dimensions across companies, which simplified our pattern matching process (Eisenhardt 1989; Yin 1999).

4 Empirical Results

4.1 Macro Level Environment

With regard to the *political and legal conditions*, the German market is considered to be more regulated in comparison to other countries. In Germany, the protection of employee interests is codified in law. On the one hand, the German Civil Code includes a paragraph (§ 613a BGB) that specifically regulates the transfer of organizational units to legally independent organizations ("Betriebsübergang"), including the outsourcing of IS subunits to external service providers (Koffka 1997, p. 124ff.). External vendors are obliged to take over former in-house employees to the same conditions as before outsourcing. Moreover, employees hold the right to protest against being taken over by an external vendor. On the other hand, employee interests are legally supported by the works council

constitution act ("Betriebsverfassungsgesetz – BetrVG"). This regulation guarantees the right of employee participation and codetermination ("Mitbestimmung") in social, economic, and personnel matters (Richardi 1990, p. 1282). Taken together, these legal surroundings have caused many potential outsourcing candidates to postpone outsourcing decisions that were factually ready to be implemented. Interestingly, political actions of privatization and deregulation initiatives that were carried out in the past few years had little impact on the outsourcing market. Until now, the companies of the respective sectors have shown a rather low demand for outsourcing services.

The relatively weak *economic environment* in the past few years served as a main driver for outsourcing. It has increased cost pressures on client organizations, and outsourcing is seen as one way to save costs. Accordingly, one of the main determinants of outsourcing decisions is cost reduction as well as cash infusion through asset transfer.

In terms of the *socio-cultural environment*, it appears that emotional factors have a relatively strong impact in the German outsourcing market. In general, companies are cautious against the wider consequences of outsourcing. Selective outsourcing is clearly seen as the preferred approach and there are only a few mega deals in Germany (IDC 2005).

The impact of the *technological environment* on outsourcing decisions has increased in recent years. Both the complexity of IT solutions as well as constantly shortened innovation cycles have made it more difficult for in-house IT departments to provide IT services in a competitive manner. At the same time, a growing level of IT standardization (e.g., ERP standard software packages) has enabled service providers to build-up shared resources and to achieve the necessary economies of scale. Thus, technological changes tend to influence both the demand and the supply side towards a higher level of outsourcing.

Taken together, IT and BPO vendors are required to adjust to their external environment by building strategies to bypass or cope with the restrictive legal surroundings as well as socio-cultural constraints, while at the time exploiting the opportunities of technological change.

4.2 Analysis of Industry Structure

New Entrants. Three types of market entrants can be distinguished in the German market. The first group refers to consulting organizations with strong implementation capabilities. Those consulting organizations try to extend their temporary engagements to long-term outsourcing arrangements that allow for a higher level of planning security about future payoffs. Secondly, vendors operating from low wage countries have begun to enter the market. Thirdly, and most dominantly, a growing number of former in-house IT departments that were spun-off from their parent corporations are seeking profit from serving external

customers. Their service offerings are mostly limited to local markets as well as specific business sectors and IT products. Attempts to extend their market reach beyond these specific market segments rarely succeed. One of the most important barriers of entrance for them is the absence of a systematic market orientation and of a significant sales force. In addition, they often lack the critical size in order to compete with the existing service providers for large scale customer accounts.

Substitution. The major alternative to outsourcing is still in-house provision of IT and BPO services, where client organizations try to implement tactics for cost savings internally (See also Hirschheim et al. 2002). When needed, external consultants are hired on a temporary basis. However, the in-house groups maintain full responsibility over all services and no liquidity effects can be achieved from asset transfer.

Supplier Power. Supply is mostly made up by hardware and software products from IT producers as well as by personnel from the labor market. The number of IT suppliers is relatively small and most of them are large in size. Most of their products have are relatively low potential for differentiation. Accordingly, their ability to achieve high margins is limited. Moreover, in the face of general economic decline there is no shortage of labor, especially after the dot-com bubble burst.

Buyer Power. In contrast to supplier power, buyer power has significantly increased during the past few years. This can mainly be explained by the increasing number of service providers and the advanced experiences that customers have gained in the field of outsourcing. This has enabled customers to play service providers off against each other and to negotiate the best possible conditions. Price competition has further increased due to the fact that in many areas services have become exchangeable. Higher bargaining power and customer experiences have translated into shorter contract periods, intensified pressure on suppliers through regular benchmarks during the relationship, and multi-vendor strategies.

Intensity of Competition. Competition has aggravated severely within the past few years. The increasing number of competitors in the market has led to a decline in prices. Many IT vendors accept lower margins either because outsourcing does not belong to their core business and hence just contributes to cover fixed costs, or because they accept low contract profitability for strategic reasons, e.g. if they want to win an account as a reference customer that may open up a specific market segment. Additionally, some corporations that are in danger to be driven out of the market try to survive by offering their services at extremely low prices.

In summary, the relatively low price level in the German outsourcing market and fierce competition has forced suppliers to rethink their strategic positioning and to search for areas for differentiation other than pricing. In the following, areas of strategic positioning will be analyzed.

4.3 Formation and Analysis of Strategic Groups

Before analyzing the strategy profiles of our sample of IT and BPO vendors, we started to classify them into homogenous strategic groups. The concept of *strategic groups* deviates from the traditional industrial economic "structure-conduct-performance" paradigm (Bain 1968; Mason 1959) which is prevalent in the analysis of industry structure (Porter 1980). The formation of strategic groups within industries recognizes performance differences between organizations other than those that can be traced back to differences in economies of scale (Hunt 1972). These differences are based on *mobility barriers* that prevent firms from easily changing their current strategic positions and imitating peer organizations (Caves et al. 1977).

In the course of analyzing the cases, two key dimensions emerged as sources of mobility barriers: firm size and service portfolio. The combination of both allowed us to cluster the eleven case companies into five homogenous strategic groups (see Figure 4).

When only considering *firm size* in terms of turn-over and number of employees, three groups of providers can clearly be distinguished. In the following, they will be termed (1) small (2) medium-sized, and (3) large. It should be noted, however, that this is a relative distinction within our sample of companies. When applying the legal German classification schema of firms (e.g. § 267 HGB), all of them belong to the class of larger corporations.

In terms of the *service portfolio,* three types are distinguished, each representing a portion of the total spectrum of outsourcing services. These are (1) the *infrastructure* level, which essentially covers desktop services, network services, and data center operations, (2) the *applications* level, which comprises applications hosting and applications management, and (3) the *business process* level, which represents the outsourcing of entire business processes. Whenever a company acts on more than one level, the classification was made according to its strategic emphasis. Those providers that were positioned on all three levels were classified under (4) *full service providers*.

Mapping both dimensions resulted in a two-dimensional matrix as depicted in Figure 4. Subsequently, each of the resulting five strategic groups will be analyzed separately.

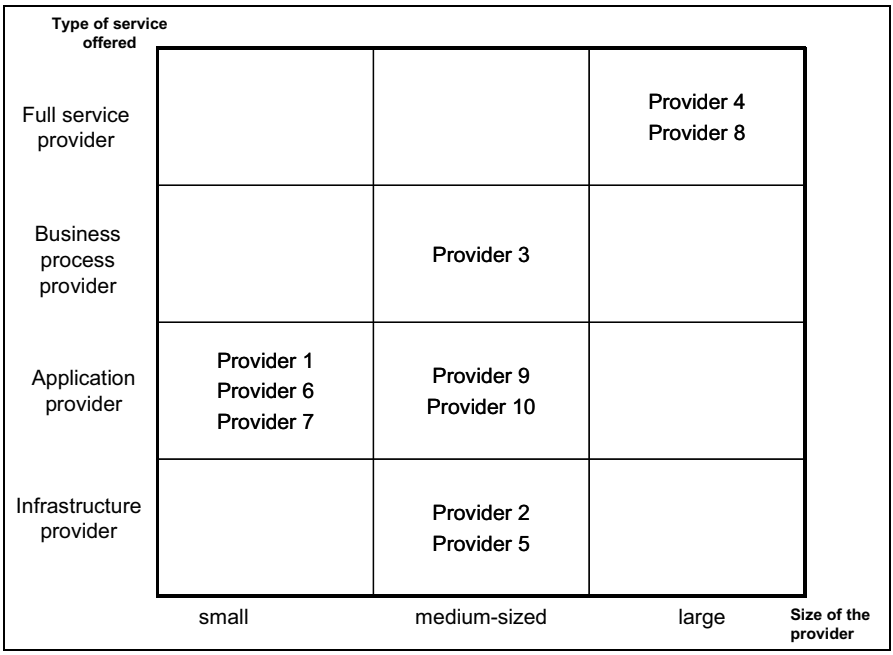


Figure 4: Positioning of the Providers

4.3.1 Strategic Group: Small/Application Level

It appears that all providers classified as small preliminary act on the application level. Typically, those providers concentrate on a small set of services and/or industry sectors. Their services are strongly dominated by enterprise resource planning (ERP) software, in particular from SAP. Since software applications represent the business processes as well as the business know-how inherent in these processes, the application services often require a good understanding of the client's business and its critical success factors. This often requires close co-operation with the customer and gives application providers the opportunity to establish long-term partnerships with client organizations – particularly in the domain of applications management. Due to the strong interdependence between application software and business processes, most of the providers in this segment see an opportunity of moving into the BPO business and building long-term process-based relationships with clients.

Due to disadvantages in size, these small application service providers are not able to achieve the necessary economies of scale required for a low price / high quantity strategy. For this reason, they are forced to pursue a *differentiation* strategy. Contrary to the infrastructure level, which is based on standardized and

comparable services, the application layer allows for differentiation through know-how in specific applications, industries, and processes.

The main target group are small and medium-sized enterprises. Their related corporate cultures provide a fertile basis for long-term relationships. Apart from culture, speed and flexibility are the outstanding success factors of these providers. In particular by satisfying specific customer needs, they are able to generate added value to their customers. Due to their smaller size and the less formal exchange of information – both within and across organizational boundaries – internal communication seems to be easier than within many of the larger provider organizations. Nevertheless, due to the increasing internationalization of their medium-sized customers, small application service providers may be required to extend their predominant local presence beyond national boundaries.

4.3.2 Strategic Group: Medium-sized/Infrastructure Level

The majority of the medium-sized/infrastructure level providers still operates very product-orientated. Their sales are mostly made up by technical, infrastructure-related services. These services show a high level of standardization and tend to evolve more and more towards a commodity business. Since multidimensional differentiation on this outsourcing level becomes increasingly difficult, pricing has become the main area of differentiation, significantly increasing the pressure to reduce prices in this segment. The small margins resulting from this situation have to be compensated by a correspondingly high quantity of delivered services. For this reason, the services are mostly unspecific to industries and, therefore, may be offered in a rather undifferentiated manner. Realizing economies of scale and exploiting learning curve advantages have become the prime critical success factors. With regard to the target group, this group of providers focuses on upper medium-sized and large enterprises. Beyond the infrastructure business, providers have already created a second strategic pillar in the application area. In the field of BPO, however, they are not yet strategically positioned. In terms of market area strategies, we have to state that the companies are acting internationally/globally. Apparently, however, especially providers of German origin strongly focus on the German or European market.

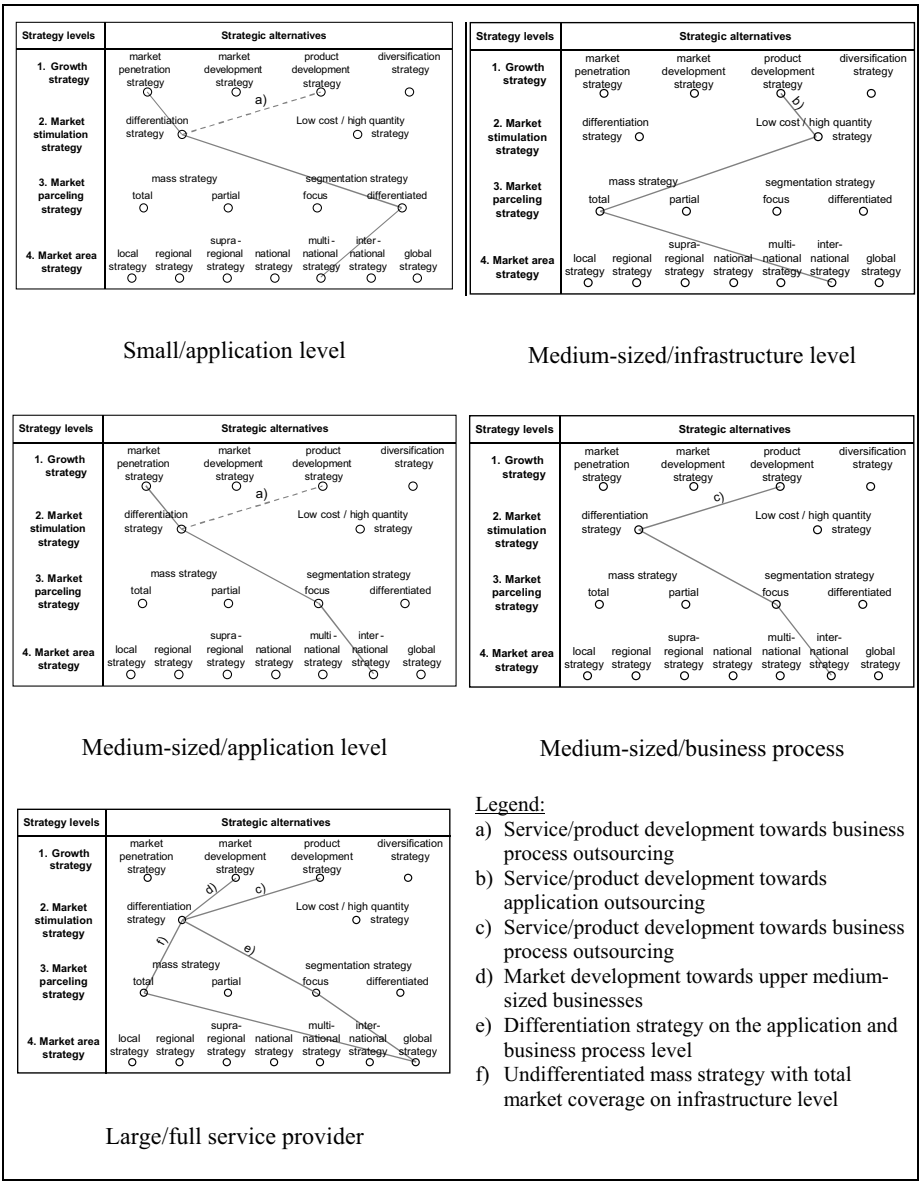


Figure 5: Strategy Profiles of the Strategic Groups

4.3.3 Strategic Group: Medium-sized/Application Level

A second group of medium-sized companies comprises providers has specialized on the application level. Typically, these providers stem from the consulting sector

or have at least a well-established consulting division from which they can draw a broad range of established industry-specific expertise. Beyond traditional application services, they are increasingly able to offer complementary services, such as systems integration, software procurement support, or management consulting. Compared to the smaller providers on the application level, they try to offer a more comprehensive portfolio of services. However, due to their limited firm size, their portfolio is not as complete as those of the large providers.

A considerable part of the services refers to the operation of SAP-systems. The business trend is shifting from mere hosting towards applications management. This development is pushed by the customer side. There is an increasing number of customers that wish to outsource not only the running of applications, but also associated development, deployment, and maintenance activities. This trend forces the providers to build up more and more industry-specific know-how and to address industry needs in a differentiated manner. Accordingly, industry know-how has become a main critical success factor for this strategic group. It enables the outsourcing vendors to provide added value to their customers. This serves as a precondition to enter into long-term partnerships with client organizations, to differentiate themselves from competitors, and to achieve higher margins.

Their targeted group of customers comprises the upper medium-sized businesses and large companies. The market area strategies pursued by the providers of this group are comparable to equally sized infrastructure providers.

4.3.4 Strategic Group: Medium-sized/Business Process Level

The third group of medium-sized companies acts on the business process level. In this study, only one provider can be assigned to this group. This company has specialized on a secondary business process, i.e. a process that is non-specific to an industry. It is able to achieve economies of scale by serving a broad range of industries with a similar type of service. Only in terms of client size, a differentiated approach can be observed. The limited product-based market growth due to strong specialization is compensated by accessing global markets and showing a strong international presence. While originally the focus was on only covering the infrastructural and application-related areas, there is a tendency towards taking over entire business processes. The most important critical success factor for this group is client-specific process know-how. Due to its strong specialization, the interviewed company was able to build up extensive process know-how and to establish its reputation as a process specialist. Based on these qualities, the provider clearly distinguishes itself from other, less specialized, competitors.

4.3.5 Strategic Group: Large/Full service Providers

Finally, there is the strategic group of large full service providers. Beside their ability to offer IT and BPO outsourcing services to their customers on all levels, mega-deals are their main distinguishing characteristic. These large scale outsourcing contracts do not only require high amounts of liquidity for taking over assets from the customer but also extensive facilities to integrate these assets. Both prerequisites for mega-deals are uniquely possessed by this strategic group. The market stimulation strategy differs according to the type of service. Infrastructure services are offered in an undifferentiated manner to all industries. The target group is exclusively defined by company size. Beside globally operating large-scale clients, upper medium-sized companies increasingly become a strategic target group. The significant size of most projects at the infrastructure level and the high level of standardization allows the vendors to achieve a high level of economies of scale which are the main source of profitability in this segment. At the application level, the providers are also well-positioned. The necessary industry know-how often is either directly available in the outsourcing division or can be drawn from other corporate units. Moreover, the systems integration and consulting groups of full service providers allow them to cover value chain activities of customers beyond those that are provided in the outsourcing area. On the level of business-process outsourcing, the providers are characterized by a vertical, i.e. sector-specific approach. Typically, industry-specific services are provided through partnerships with other vendors, e.g. through joint ventures. Quite often, these third parties bring in the specific process know-how, while the outsourcing vendor supplies the technological infrastructure. Beyond their complete portfolio of services, their extremely strong international presence provides another basis for differentiation. Many large scale projects are international in scope and quite often full service providers are the only ones with a global coverage. This puts them into a premium position and allows them to achieve margins above market average for such projects.

4.3.6 Cross-Analysis of Strategic Groups

While all of the eleven IT and BPO vendors viewed their business as profitable, a number of differences can be noted between the strategic groups in terms of selected indicators of success. First, the lowest *margins* are achieved on the infrastructure level as compared to the business process level, where the highest margins can be observed. Moreover, there appears to be a negative correlation between vendor size and to the *rate of prolongation* of regularly terminating contracts. While smaller vendors show a prolongation rate of almost 100 per cent, outsourcing relationships with large vendors are only continued in 70 and 80 per cent of the cases. In this regard, it is instructive to note that contract durations were found to have declined in each of the five outsourcing segments. Whereas

contracts have historically lasted for up to ten years, they now range from three to five years for SAP outsourcing and from five to seven years for other services.

When comparing the strategic positions of the groups, it becomes apparent that the mid-sized vendors appear to be somewhat "stuck in the middle" between the smaller vendors with a high level of flexibility and specialization and the large scale full service providers that are able to achieve high economies of scale. The current response is a shift towards extending the service portfolio, i.e. towards a service development growth strategy. In this context, external growth through mergers and acquisitions is considered to be very likely.

In addition to those critical success factors that are particularly important for a certain strategic group, a number of *general success factors* emerged from the case analysis. During the process of customer acquisition, it is extremely important to make use of already existing relationships to potential customers. These linkages may not necessarily be established by the outsourcing divisions themselves but also by other organizational units or co-operating partners. Thus intra- and inter-organizational networking is essential for gaining new customer accounts. Other success factors that are considered important are the provider's assumed financial stability and the existence of reference customers. Less important are neutrality to IT suppliers (e.g. hardware producers) and knowledge management.

5 Conclusion and Future Orientation

This study provides insights into the strategic positioning of outsourcing vendors in the German IT and BPO market and illustrates their critical success factors. A qualitative empirical study was conducted including ten IT and BPO vendors.

The study was based on a conceptual framework that involved preconceptions about the critical success factors for IT and BPO vendors as well as generic strategic options that vendors can take in order to differentiate themselves from their competitors. The data analysis allowed us to identity five strategic groups as combinations of firm size and service portfolio. Each of these groups was found to have its own set of critical success factors and its own generic strategy profile. Moreover, a number of general findings emerged that appear to be relevant for all IT and BPO vendors, regardless of size or service portfolio.

The general findings of our study suggest that the *basic environmental conditions* are favorable for further growth of the outsourcing market. Especially, the speed of technological change and the pressure for cost reduction due to weak macroeconomic conditions trigger market growth. However, the absence of planning reliability concerning the future politic and economic development prevents the vendor side from being too euphoric.

Competition within the *outsourcing industry* is extremely high. This is mainly due to the high number of competitors as well as increasing bargaining power of the clients. Moreover, new competitors are entering the market and many existing competitors exert additional pressure on margins – either for strategic reasons or to be able to survive in the market. The fact that a great number of business areas become more and more commodity-like contributes to the aggravation of the described decline of prices.

With regard to their strategic behaviors, there are significant differences between the *individual service providers*. The two strategic dimensions that most clearly differentiate the strategic positioning of the ten IT and BPO vendors that were interviewed as part of our study, were firm size and type of service portfolio. Both represent main sources for mobility barriers. Combining both dimensions allowed us to identify five strategic groups: (1) small application providers, (2) medium-sized infrastructure providers, (3) medium-sized application providers, (4) medium-sized business process providers, and (5) large full service providers. Each of these groups pursues its own combination of growth strategy, competitive strategy, market parceling strategy and market area strategy resulting in five distinctive strategic profiles. Moreover, each group is characterized by a specific set of critical success factors. Two of the main differentiators in the CSFs are the type of knowledge required to be successful in each outsourcing segment and the preferred value proposition. For example, in order to be successful in the domain of applications management, with small and medium-sized companies as the main target group, it is necessary to build up client-specific business knowledge and to generate value through highly tailored and differentiated application services. The vendors that operated in this market segment belonged to the group of small application providers. In contrast, in order to generate value for large customers on the infrastructure level, the focus is on technological expertise and realizing economies of scale. This market segment was hence exclusively covered by large full service providers and specialized medium sized providers.

Although all of the IT and BPO providers claimed to be profitable, a movement towards polar extremes is likely to occur. That is, a provider may choose to either operate as a small highly specialized entity or as a full service provider, thus being able to fully exploit the opportunities of complementary services as well as of economies of scale and scope (see also Levina and Ross, 2003).

In interpreting the study results, however, the limitations of our research procedure should be kept in mind and considered as avenues for improvements in future research. First, this study is a snap-shot of the current market situation in Germany. Both the general environmental conditions as well as the industry structure are likely to change in the future. Moreover, associated movements in strategic positioning and in the critical success factors are more than likely. Nevertheless, the discovered association between CSFs and strategic positioning may well preserve. Second, our findings were derived from just one national market with all its cultural specificities. Third, as with any drawing of samples,

our findings are limited in generalizability. Fourth, our unidirectional data gathering procedure within each of the companies constitutes a limiting factor. The fact that we focused on interview partners at the executive level neglects potentially opposing perspectives from staff at the tactical or operative level. Furthermore, effects of self-selection by the service providers can not be excluded.

In summary, the present study is explorative in nature and primarily serves to provide initial insight into a topic that has been largely ignored by previous research in IT and BPO outsourcing. We believe that outsourcing research will benefit from a more thorough understanding of the strategic objectives and directions of vendors – in particular when considering that any outsourcing arrangement requires a certain level of alignment between client and vendor objectives as well as the required competencies to achieve these objectives.

Literature

Ang, S., and Slaughter, A.S. "Work Outcomes and Job Design for Contract versus Permanent Information Systems Professionals on Software Development Teams," *MIS Quarterly* (25:3) 2001, pp 321-350.

Ansoff, H.I. "A Model for Diversification," *Management Science* (4:4) 1958, pp 392-414.

Ansoff, H.I. *Corporate Strategy* McGraw-Hill, New York, 1965.

Apte, U. "Global Outsourcing of Information Systems and Processing Services," *Information Society* (7:4) 1990, pp 287-303.

Apte, U.M., and Mason, R.O. "Global Disaggregation of Information-Intensive Services," *Management Science* (41:7) 1995, pp 1250-1262.

Bain, J.S. *Industrial Organization*, (2nd ed.), New York-London-Sydney, 1968.

Barthélemy, J., and Geyer, D. "IT Outsourcing: Evidence from France and Germany," *European Management Journal* (19:2) 2001, pp 195-202.

Barthélemy, J., and Geyer, D. "An empirical investigation of IT outsourcing versus quasi-outsourcing in France and Germany," *Information & Management* (42:4) 2005, pp 533-542.

Becker, J. *Marketing-Konzeption: Grundlagen des ziel-strategischen und operativen Marketing-Managements*, (7 ed.) Vahlen, München, 2002.

Carmel, E., and Agarwal, R. "Tactical Approaches for Alleviating Distance in Global Software Development," *IEEE Software* (March/April) 2001, pp 22-29.

Caves, R., and Porter, M.E. "From Entry Barriers to Mobility Barriers: Conjectural Decisions and Contrived Deterrence to new Competition," *Quarterly Journal of Economics* (91:3) 1977, pp 241 - 261.

Chandler, A.D. *Strategy and Structure* MIT Press, Cambridge, MA, 1962.

Clark, T.D., Jr., Zmud, R.W., and McCray, G.E. "The Outsourcing of Information Services: Transforming the Nature of Business in the Information Industry," *Journal of Information Technology* (10) 1995, pp 221-237.

Computerwoche "Outsourcing: Einziger „Boom“ in der IT?," *Computerwoche* (29:11) 2002, pp 48-49.

Currie, W.L. "Outsourcing in the Private and Public Sectors: An Unpredictable IT Strategy," *European Journal of Information Systems* (4:4) 1996, pp 226-236.

Daniel, D.R. "Management Information Crisis," *Harvard Business Review* (39:5) 1961, pp 111-121.

Dibbern, J. *The Sourcing of Application Software Services: Empirical Evidence of Cultural, Industry and Functional Differences* Springer-Verlag, Berlin et al., 2004.

Dibbern, J., Goles, T., Hirschheim, R.A., and Jayatilaka, B. "Information Systems Outsourcing: A Survey and Analysis of the Literature," *The DATA BASE for Advances in Information Systems* (35:4) 2004, pp 6-102.

Eisenhardt, K.M. "Building Theories from Case Study Research," *Academy of Management Review* (14:4) 1989, pp 532-550.

Evered, R. "So what is strategy?," *Long Range Planning* (16:3) 1983, pp 57-72.

Farmer, R., and Richman, B.M. "A Model for Research in Comparative Management," *California Management Review* (Winter) 1964, pp 55-68.

Fitzgerald, G., and Willcocks, L.P. "Contracts and Partnerships in the Outsourcing of IT," International Conference on Information Systems, Vancouver, Canada, 1994, pp. 91-98.

Goles, T. "The Impact of the Client/Vendor Relationship on Outsourcing Success," in: *Department of Decision and Information Sciences*, University of Houston, Houston, 2001.

Gopal, A., Mukhopadhyay, T., and Krishnan, M.S. "The Role of Software Processes and Communication in Offshore Software Development," *Communications of the ACM* (45:4) 2002, pp 193-200.

Grover, V., Cheon, M.J., and Teng, J.T.C. "The Effect of Service Quality and Partnership on the Outsourcing of Information Systems Functions," *Journal of Management Information Systems* (12:4) 1996, pp 89-116.

Halvey, J.K., and Melby, B.M. *Information Technology Outsourcing Transactions: Process, Strategies and Contracts* John Wiley & Sons, New York et al., 1996.

Heeks, R., Krishna, S., Nicholson, B., and Sahay, S. "Synching' or Sinking: Trajectories and Strategies in Global Software Outsourcing Relationships," *IEEE Software Special Issue* (18:2) 2001, pp 54-60.

Henderson, J.C. "Plugging into Strategic Partnerships: The Critical IS Connection," *Sloan Management Review* (30:3) 1990, pp 7-18.

Hirschheim, R.A., and Lacity, M.C. "Four Stories of Informations Systems Insourcing," in: *Information Systems Outsourcing: Enduring Themes, Emergent Patterns and Future*

Directions, R.A. Hirschheim, A. Heinzl and J. Dibbern (eds.), Springer-Verlag, Berlin et al., 2002, pp. 348-392.

Hunt, M.S. "Competition in the Major Home Appliance Industry," Harvard Uiversity, Cambridge, MA, 1972.

IDC "IDC's Top 100 Worldwide Outsourcing Deals of 2004."

Ives, B., and Learmonth, G.P. "The Information System as a Competitive Weapon," *Communications of the ACM* (27:12) 1984, pp 1193-1201.

Koffka, N. "Arbeitsrecht," in: *Outsourcing in Banken und Sparkassen: Strategien, Rechtsgrundlagen, Praxisbeispiele,* D. Sparkassenverlag (ed.), Deutscher Sparkassen Verlag, Stuttgart, 1997, pp. 121-152.

Lacity, M.C., and Hirschheim, R.A. "The Information Systems Outsourcing Bandwagon," *Sloan Management Review* (35:1) 1993, pp 73-86.

Lacity, M.C., and Willcocks, L.P. "An empirical investigation of information technology sourcing practices: Lessons from experience," *MIS Quarterly* (22:3) 1998, pp 363-408.

Lacity, M.C., and Willcocks, L.P. "Twenty Customer and Supplier Lessons on Information Technology Sourcing," *Cutter Consortium* (3:3) 2002, pp 1-23.

Lacity, M.C., Willcocks, L.P., and Feeny, D.F. "The Value of Selective IT Sourcing," *Sloan Management Review* (37:3) 1996, pp 13-25.

Lasher, D.R., Ives, B., and Jarvenpaa, S.L. "USAA-IBM Partnerships in Information Technology: Managing the Image Project," *MIS Quarterly* (15:4) 1991, pp 551-565.

Lee, J.-N., and Kim, Y.-G. "Effect of Partnership Quality on IS Outsourcing Success: Conceptual Framework and Empirical Validation," *Journal of Management Information Systems* (15:4) 1999, pp 29-61.

Leidecker, J.K., and Bruno, A.V. "Identifying and Using Critical Success Factors," *Long Range Planning* (17:1) 1984, pp 23-32.

Levina, N., and Ross, J.W. "From the Vendor's Perspective: Exploring the Value Proposition in Information Technology Outsourcing," *MIS Quarterly* (27:3) 2003, pp 331-364.

Marcolin, B.L., and McLellan, K.L. "Effective IT Outsourcing Arrangements," Annual Hawaii International Conference on System Sciences, IEEE, 1998, pp. 654-665.

Mason, E.S. *The Corporation in Modern Society* Harvard University Press, Cambridge, MA, 1959.

McFarlan, F.W., and Nolan, R.L. "How to Manage an IT Outsourcing Alliance," *Sloan Management Review* (36:2) 1995, pp 9-23.

Michell, V., and Fitzgerald, G. "The IT Outsourcing Market-Place: Vendors and their Selection," *Journal of Information Technology* (12) 1997, pp 223-237.

N/A "Outsourcing: Einziger „Boom“ in der IT?," *Computerwoche* (29:11) 2002, pp 48-49.

Nicholson, B., and Sahay, S. "Some Political And Cultural Implications Of The Globalisation Of SoftwareDevelopment: Case Experience From UK And India," *Information and Organisation* (11:1) 2001, pp 25-43.

Perlmutter, H.V. "The Tortuous Evolution of the Multinational Corporation," *Columbia Journal of World Business* (4:1) 1969, pp 9-18.

Picot, A., and Maier, M. "Analyse- und Gestaltungskonzepte für das Outsourcing," *Information Management* (4) 1992, pp 14-27.

Porter, M.E. *Competitive Strategy: Techniques for Analyzing Industries and Competitors* Free Press, New York, 1980.

Porter, M.E. *Competitive Advantage: Creating and Sustaining Superior Performance* Free Press; Collier Macmillan, New York, London, 1985, pp. xviii, 557.

Richardi, R. "Labour Right," in: *Handbook of German Business Management*, Vol. 2, C. E. Poeschel Verlag, Stuttgart, 1990, pp. 1278-1290.

Rockart, J.F., and Short, J.E. "IT in the 1990s: Managing Organizational Interdependence," *Sloan Management Review* (Winter) 1989.

Saunders, C., Gebelt, M., and Hu, Q. "Achieving Success in Information Systems Outsourcing," *California Management Review* (39:2) 1997, pp 63-79.

Schultze, U., and Boland Jr., R.J. "Place, Space and Knowledge Work: A Study of Outsourced Computer Systems Administrators," *Accounting, Management and Information Technologies* (10) 2000, pp 187-219.

Sobol, M.G., and Apte, U.M. "Domestic and Global Outsourcing Practices of America`s most Effective IS Users," *Journal of Information Technology* (10) 1995, pp 269-280.

Szyperski, N., Schmidt, P., and Kronen, J. "Outsourcing: Profil und Markt einer Dienstleistung für Unternehmen auf dem Weg zur strategischen Zentrierung," *WIRTSCHAFTSINFORMATIK* (35) 1993, pp 228-240.

TPI "The TPI Index Q4/2004," in: www.tpi.net, 2005.

Weidner, S. *Analyse und Gestaltungsrahmen für Outsourcing-Entscheidungen im Bereich der Informationsverarbeitung* Eurpäischer Verlag der Wissenschaften, Frankfurt, 2000.

Willcocks, L.P., and Kern, T. "IT Outsourcing as Strategic Partnering: The Case of the UK Inland Revenue," *European Journal of Information Systems* (7:1) 1998, pp 29-45.

Wright, P.L., Pringle, C.D., and Kroll, M.J. *Strategic Management*, (2nd ed.), Boston, 1994.

Wright, P.P.C.K., Jerry; Pringle, Charles. "Generic Strategies and District Bank Performance," *American Business Review* (6:2) 1988, pp 50-58.

Yin, R.K. *Case Study Research - Design and Method*, (2nd ed.) SAGE Publications, Thousand Oaks, London, New Delhi, 1999.

Work Outcomes and Job Design for Contract Versus Permanent Information Systems Professionals on Software Development Teams[1]

Soon Ang

Nanyang Business School, Nanyang Technological University, Nanyang Avenue, 639798, Singapore, asang@ntu.edu.sg

Sandra A. Slaughter

Tepper School of Business, Carnegie Mellon University, Pittsburgh, PA 15213 U.S.A., sandras@andrew.cmu.edu

1 Introduction

The contracting of information services has become an essential strategy for organizations in light of corporate downsizing and restructuring, volatile and competitive environments, and rapid advances in information technology (Ang and Straub 1998; Clark et al. 1998; Lacity and Hirschheim 1993; Loh and Venkatramen 1992; Willcocks and Lacity 1998). In particular, the motivation to contract for information systems (IS) development is highlighted for companies striving to meet skyrocketing demand for new software applications in the Internet-enabled economy.

Contract IS professionals are individuals who contract directly or through an employment agency with firms requiring their services on a temporary basis (Ang 1994; Ang and Slaughter 2000; Bureau of Labor Statistics 1995; Fishman 1997; Matusik and Hill 1998; Slaughter and Ang 1996). According to the U.S. Bureau of Labor Statistics, the number of IS professionals who work as contractors increased more than 40% from 1995 to 1998 (Cole-Gomolski 1998). An estimated 10% to 30% of software development professionals in large corporations are contractors.

---

[1] This paper previously appeared as: Ang, S. and Slaughter, S., "Work Outcomes and Job Design for Contract Versus Permanent Information Systems Professionals on Software Development Teams," *MIS Quarterly*, Vol. 25 No 3. The current version appears with permission of *MIS Quarterly*. An earlier version of this paper won the Best Paper Award at the 31st Hawaii International Conference on Systems Sciences, 1998.

The use of contractors to supplement permanent staff in all kinds of employment has increased dramatically. Many organizations hire contract workers to remain responsive to dynamic economic and technological changes by reducing the fixed cost of permanent staff (Nollen and Axel 1996; Pfeffer and Baron 1988). Others have an urgent need for specialized skills or want to test the abilities of temporary staff before deciding to employ them on a permanent basis. Still others prefer to supplement their permanent workers with contractors to provide flexibility in responding to volatile and unpredictable work demands (Maniscalco 1995; Slaughter and Ang 1996).

The study of contract workers is not new. However, much prior analysis of the contingent workforce is centered on the labor market and economic system (see Cappelli 1995; Jacoby 1985). It focuses on trends in alternative employment relations (Barker and Christensen 1998; Belous 1989; Gallagher and McLean Parks, in press; Golden and Appelbaum 1992; Kalleberg et al. 1997; Kalleberg and Schmidt 1996) or the rationale for different employment relations (e.g., see Atkinson's (1984) core-periphery arguments; Davis-Blake and Uzzi 1993; Golden 1996). While informative, this research does not provide insight into the organizational attitudes, behaviors, and outcomes associated with using contractors. In particular, relatively little is known about the impact of alternative employment arrangements on behavioral and attitudinal outcomes in the workplace, especially when contractors and permanent employees work together on teams. These attitudes and behaviors are significant because they are related to important work outcomes, including performance. The lack of research on the behavioral consequences of employing contractors poses a dilemma for managers (Feldman et al. 1994; Nollen and Axel 1996). How should one manage permanent and contract workers? Will permanent workers and contractors behave and perform in the same way? Do they share the same attitudes?

Generally, contract work has involved use of para-professionals such as nursing aids, clerical temps, and manual laborers to do easily-monitored, non-recurrent tasks that can be accomplished independently and require relatively limited skills and little organization-specific knowledge (McLean Parks et al. 1998; Pearce 1993). In contrast, software development contractors are professionals who typically team with permanent employees for the life span of a software development project. These mixed teams work on interdependent tasks to design, enhance, and install complex information systems that are often central to an organization. Because IS contractors can be involved in strategically important activities, their use can pose significant risks to the employing organizations (Ang and Beath 1993; Lacity and Hirschheim 1993). For example, in the absence of a written contractors may misappropriate trade secrets and valuable software artifacts such as source code, algorithms, documentation, and flowcharts (Hoffman 1992).

As the deployment of contract professionals in organizations increases, important questions emerge about their use. A major question is to what extent contract

professionals are able to work with their permanent counterparts and contribute to organizational effectiveness. IS contracting, also described by Willcocks and Lacity (1998, p. 5) as a "buy-in" sourcing strategy, is one type of sourcing relationship an organization can have with the external market for IS services. Prior research on the sourcing for IS services has focused on understanding the logic underlying the sourcing decision (for example, see Ang and Cummings 1997; Lacity and Hirschheim 1993; Nam et al. 1996; Richmond et al. 1992). This research has provided a number of valuable insights into the determinants of IS sourcing choices. However, in the introduction of their book on IS sourcing, Willcocks and Lacity note that past research has not addressed a number of critical themes. Among them is the need to better understand the human resource, behavioral, and performance issues surrounding IS sourcing decisions (Willcocks and Lacity 1998, p. 34).

In this study, we examine use of contract professionals in software development. Our primary objectives are to compare and understand differences in work attitudes, behaviors, and performance of contract and permanent professionals who work together on software development teams. We believe our study is the first to formally examine the organizational psychology and behavioral consequences of IS contracting. Moreover, with the exception of Krausz et al. (1995), Mallon and Duberley (2000), Pearce (1993), and Van Dyne and Ang (1998), little published research exists on organizational behavior issues relating to use of contractors in other significant professional and technical functions. Thus, our study informs research on non-IS professionals as well.

Our paper proceeds as follows. We draw upon theories of social exchange (Blau 1964) and social comparison (Goethals and Darley 1987) to propose an initial research model that hypothesizes differences in work attitudes, behaviors, and performance between contract and permanent professionals. Using a sequential mixed-methods design (Tashakkori and Teddlie 1998), we evaluate and elaborate upon this model. Our first study is a survey of contract and permanent IS professionals working together on software development teams in a large transportation company. We use multivariate analysis of covariance to analyze differences in their attitudes, behaviors, and performance. In our second study, we conduct in-depth interviews with contract and permanent IS professionals to learn more about their work environments. Using the results from both studies, we enhance our theoretical model of attitudes, behaviors, and performance in IS contracting. We make suggestions for further research and conclude with implications for managing IS professionals.

2 Study 1: The Survey Social Exchange and Norms of Reciprocity

Social exchange theory (Blau 1964) can be used to contrast workplace attitudes and behaviors of contract and permanent professionals. This theory focuses on the exchange relationships between two or more actors. Social exchange is a pattern of mutually contingent tangible and intangible exchanges in which „the precise services the employee or professional will be obligated to perform are not specified in detail in advance“ (Blau 1964, p. 93). The norm of reciprocity (Gouldner 1960) is central to social exchange theory. Norms of reciprocity represent the rules governing social exchange and form a key motivational basis for work attitudes and behaviors (Settoon et al. 1996).

From a social exchange perspective, we expect that work status (i.e., whether a professional is contract or permanent) is a major determinant of the exchange relationship between individuals and the employing organization (Rousseau 1995, 1997). Work status influences employer obligations such as pay, benefits, access to training, and opportunities for advancement. By virtue of their work status, contract professionals do not expect repeated, long-term exchange relationships with an organization. Their interactions are short-term and bounded (Cappelli 1995; Rousseau 1997). Contract professionals receive different inducements from organizations. They receive fewer rewards, are not routinely considered for promotions, and cannot expect ongoing employment. In contrast, permanent employees have repeated opportunities for cycles of reciprocal exchange with an organization.

Social exchange theory provides a strong rationale for proposing that IS contractors will have less positive attitudes and behaviors based on the specifics of their social exchange relationships and the norms of reciprocity. Because of their work status, contractors receive fewer tangible and intangible benefits from their employing organizations (Rousseau 1997). Accordingly, the less positive attitudes and behaviors of contractors can be viewed as contingent responses to the fewer benefits they receive. In the following sections, we apply these work-status predictions to attitudes, behaviors, and performance in IS contracting.

2.1 Social Exchange Relationships and Social Comparisons in IS Contracting

The work attitudes examined in this study include self-ratings of perceived organizational support, distributive justice, and alienation. These attitudes are beliefs concerning the extent to which the organization values workers' contributions and cares about their economic and social well-being (Eisenberger et al. 1986). They also represent the employee's belief in the organization's fulfillment of its part of the social exchange agreement (Guzzo et al. 1994).

In addition to these work attitudes, we examine two peer-rated assessments of in-role and extra-role behaviors, and four supervisor-rated assessments of obedience, loyalty, trustworthiness, and performance. We selected these organizational behaviors because they have been theorized and shown to be salient with respect to a variety of exchange relationships (Rousseau and McLean Parks 1993). For example, empirical research has found that in-role and extra-role behaviors and performance are associated with reciprocal actions on the part of the employer in terms of support for employees or fair resource allocation (Eisenberger et al. 1986; Graen et al. 1982; Konovsky and Pugh 1994). Furthermore, prior research has shown that employees view performance and in-role and extra-role behaviors as acceptable commodities for exchange (Foa and Foa 1980). In-role behaviors refer to expected job duties and responsibilities. Extra-role behaviors include discretionary actions beyond role expectations. These behaviors are viewed as social resources that may be exchanged by individuals who have been the recipient of social rewards (Moorman 1991). The discretionary nature of these behaviors means they may easily be given or withheld, making them ideal wares for reciprocation.

The social comparison of work attitudes, behaviors, and performance of contract versus permanent professionals becomes salient when they work together closely on teams, particularly when team members are colocated. According to social comparison theory (Goethals and Darley 1987; Kruglanski and Mayseless 1990; Levine and Moreland 1987), proximity heightens the social comparison processes of employees and contrast effects perceived by observers (Nistbett and Ross 1980). Thus, when contract and permanent professionals work together, automatic social comparison processes are triggered. Social comparisons apply not only to individual group members but also to observers of employee behaviors (such as peers and supervisors). We, therefore, expect that social comparison processes differentially affect not only how individuals with different work status (i.e., contract or permanent) evaluate themselves but also how observers (peer and supervisors) rate them.

In the following sections, we theorize further and hypothesize differences in the perceived attitudes, behaviors, and performance of contract versus permanent IS professionals. Figure 1 summarizes the research model for Study 1.

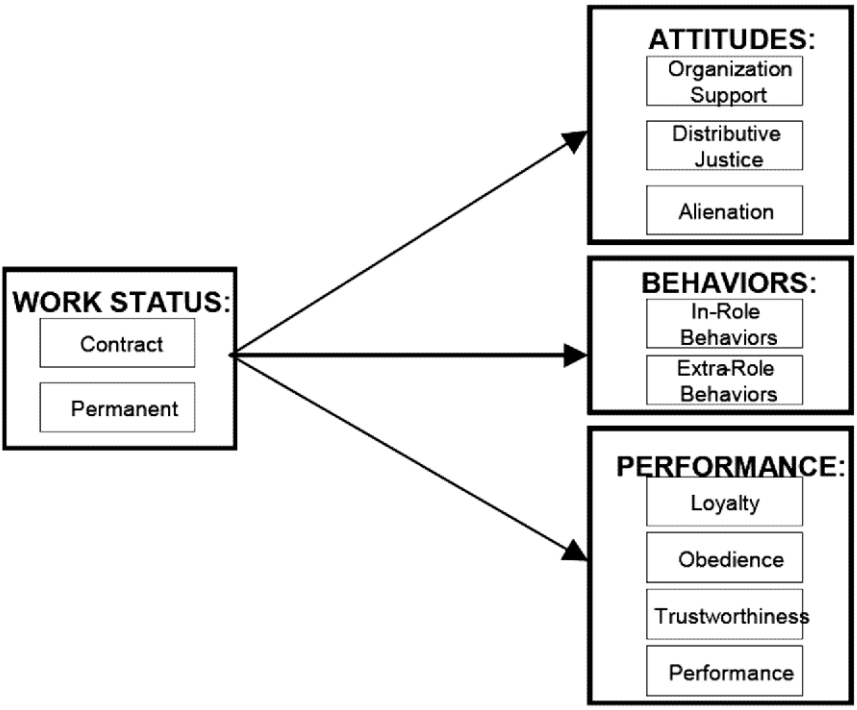


Figure 1: Initial Research Model

2.2 Work Attitudes (Self-Assessments)

2.2.1 Perceived Organization Support and Work Justice

Eisenberger and colleagues (Eisenberger et al. 1986; Eisenberger, Fasolo, and Davis-LaMastro 1990) developed the concept of perceived organization support (POS) to explain the different inducements workers receive from the organization. POS refers to individuals' beliefs that their organization cares about their well-being, provides help when needed, considers their goals and values, and appreciates their contributions. Adopting a social exchange framework, Eisenberger and colleagues argue that high levels of POS create feelings of obligation. Employees feel they ought to be committed to their employers. They also feel obliged to reciprocate and return the employers' commitment by engaging in behaviors that support organizational goals. Therefore, the perception that an organization supports its members and values their contributions is hypothesized to positively affect employees' behavior and performance.

On the other hand, if employees believe their organization does not value their contributions, they are likely to feel some form of injustice. Justice refers to individuals' perceptions of fairness and equity in the workplace (Cropanzano 1993; Greenberg 1987). Central in the research on justice and equity is the concept of distributive justice (Pinder 1998). According to Greenberg (1990), people have a strong urge to be treated fairly and to see themselves and be seen by others as fair. Distributive justice, therefore, refers to whether employees perceive their employers to be giving them their fair share of rewards.

It is likely that contract professionals would perceive a lower level of organization support and distributive justice because contractors typically are not regarded as full members of an organization; they are transient, and often are considered to be an „out" group. This is especially so if contract professionals compare their social exchange relationships with those of permanent professionals. Although contract professionals can receive higher hourly wages than their permanent counterparts, they normally do not share the same organizational perks and benefits such as training, health care, vacation, and retirement contributions. For example, the U.S. Chamber of Commerce reports that organizations pay health, retirement, and vacation benefits to 100% of permanent employees but to only 17% of contract workers (Chamber of Commerce of the United States 1991). More recent figures from the Contingent Worker Supplement to the U.S. Current Population Survey indicate that 87% of regular full-time employees work in firms that offer them health insurance, as opposed to only 14% of contingent workers (Thorpe and Florence 1999). A particular issue in IS is that contractors typically do not share in a firm's lucrative stock options.[2] Therefore, we expect that:

Hypothesis 1a: *Contract professionals experience a lower level of organizational support than permanent professionals.*

Hypothesis 1b: *Contract professionals experience a lower level of distributive justice than permanent professionals.*

2.2.2 Alienation

In contrast to POS, alienation represents the negative social-psychological reaction to the workplace. According to McKee (1969) and to Schmitt and Moody (1994), an alienated worker feels meaningless in the workplace and estranged from social work groups. Alienation also signals a lack of control and powerlessness on the part of an individual. It is the lack of power to direct one's work, to maintain satisfactory work relationships, and to create a self-definition.

---

[2] Independent contractors and temporary employees at Microsoft won a major court case that resulted in their entitlement to benefits, including participation in the company's 401(k) plans and discount stock purchases. However, companies do not usually provide benefits to their IS contracts and temporary workers (Cole-Gomolski 1998).

Social exchange theory suggests that contract professionals are likely to feel more alienated because they have shorter organizational tenure and do not have time to socialize and form meaningful relationships with other employees. Feelings of alienation are often intensified if organizations regard contract professionals as peripheral rather than core and assign them less challenging and less significant tasks (Pearce 1993). In the context of software development, for example, contract professionals could be relegated to coding or support activities rather than given more challenging assignments in systems analysis and design.

Furthermore, the transitory nature of contract work discourages permanent co-workers from getting to know contractors on a personal level. As described by a contract professional in an ethnographic study of short-term employment (Rogers 1995, p. 149), „since they don't see you as being permanent they sort of dismiss you as being expendable, like you're not worth it. Therefore, we posit that:

Hypothesis 1c: *Contract professionals experience a higher level of alienation than permanent professionals.*

2.3 Work Behaviors

2.3.1 In-Role Behaviors (Peer Assessments)

In-role behavior is defined as behavior that is required or expected in performing assigned job duties, activities, and responsibilities. Required behavior is a condition of continued employment; it is formally expected of all job incumbents regardless of work status. In-role behavior provides the basis for regular, routine, reliable, and on-going performance of established duties (Van Dyne and Lepine 1998). Although we recognize that the job duties of permanent employees and contract professionals might differ, we expect both types of workers to perform the minimum job requirements. For contract professionals, incentives are tied directly to specific responsibilities and assignments. Similarly, for permanent professionals, the minimum threshold for continued employment is the fulfillment and reliable performance of established duties and tasks. For both permanent and contract professionals, lack of in-role behavior can lead to punishment, reprimand, or termination. Consequently, we expect both contract and permanent professionals to exhibit similar levels of in-role behavior because their incentives encourage performance of such behaviors. Thus,

Hypothesis 2a: *In-role behaviors by contract professionals are perceived to be no lower than those exhibited by permanent professionals.*

2.3.2 Extra-Role Behaviors (Peer Assessments)

Extra-role behaviors refer to discretionary actions of workers that go beyond their existing role expectations and are not mandated by the organization (Van Dyne et

al. 1995). This definition highlights the importance of extra-role behaviors that are not simply behaviors outside of role expectations that happen to occur within an organization. The behaviors must be directed toward benefiting the organization. An example would be volunteering to mentor new employees.

Based upon the social norms of reciprocity governing the employment relationship, we do not expect contractors to display the same levels of extra-role behaviors as permanent IS professionals. The relationship between contract professionals and the organization is specific, close-ended, and economic in nature. Rewards tend to be based upon fulfillment of explicit and written contractual obligations. As an IS contractor observes, "it's easy to get too busy helping to get your original work done. Contractors who don't accomplish their primary task are soon unemployed" (Rosenthal 1996, p. 106). On the other hand, the relationship between permanent professionals and the organization tends to be covenantal in nature (Rousseau and McLean Parks 1993). Covenantal relationships endure beyond close-ended economic exchange relationships. Permanent employees enjoy more extensive and open-ended rewards, such as career-enhancing investments in the form of training and career advancements on the part of the employer. Therefore, we expect that,

Hypothesis 2b: *Extra-role behaviors by contract professionals are perceived to be lower than those exhibited by permanent professionals.*

2.4 Work Performance

2.4.1 Loyalty and Obedience (Supervisor Assessments)

Loyalty and obedience are key organizational citizenship behaviors. These behaviors refer to civic citizenship at work (Van Dyne et al. 1994). Loyalty is allegiance to an organization and promotion of its interests. It relates to defending, promoting, and presenting a positive view of the organization. Obedience represents respect for the rules and policies of an organization and willingness to expend appropriate effort on its behalf. Fundamentally, obedience means that employees follow work rules and instructions.

We do not expect contract professionals to display the same levels of loyalty and obedience as permanent professionals. Such behaviors are more under an individual's control. Therefore, they are likely to vary as a function of an employee's attachment to the organization. Contract professionals do not expect long-term employment relationships with their organizations. "Contracting allows me to have freedom," explains a help-desk technician who quit regular employment to become a contractor. „If I work for a company and it's something I enjoy, I can press for a full-time job. But if it's not to my liking, I can take off" (Alexander 1998, p. 83). If a contract professional chooses not to exhibit these behaviors, no long-term repercussions arise for low loyalty or disobedience,

because the contractor's attachment to the organization is transitory. On the other hand, permanent employees are expected to exhibit loyalty and obedience as part of their covenantal relationship with their employer. Therefore,

Hypothesis 3a: *Contract professionals are perceived to be less loyal than permanent professionals.*

Hypothesis 3b: *Contract professionals are perceived to be less obedient than permanent professionals.*

2.4.2 Trustworthiness and Performance (Supervisor Assessments)

Traditionally, trust is defined as conscious reliance on another person (Hosmer 1995) and allowing oneself to be vulnerable to another person in a situation where the other person's behavior is not controlled (Deutsch 1962; Zand 1972). In a more recent refinement of the concept, Rousseau et al. (1998, p. 395) define trust as a "psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another."

Organizations typically do not have ongoing relationships with contract professionals. Thus, they do not have the opportunity to develop trusting relationships based on observed reliability and dependability over time. As Zucker (1986) argues, repeated and ongoing interaction is the foundation for the assessment of personal trustworthiness. If no expectations for ongoing interaction exist, trustworthiness is unlikely to be a salient characteristic of the relationship. Therefore, organizations may be uncomfortable and unwilling to share confidential information and delegate important functions to contractors. For example, a Fortune 100 company decided not to hire contractors to support its e-mail system because, "E-mail is a mission-critical application…there's a confidentiality issue as well when other systems people who don't work at your company have complete access to your software" (Girard and Wallace 1997, p. 12). Many companies have required IS contractors to sign formal legal documents to protect confidential organizational information and to mandate the transfer of critical knowledge to permanent staff after an assignment is completed. Based on the different work status of contract professionals, we expect that organizations would view permanent IS professionals as more trustworthy than contractors. Consequently,

Hypothesis 3c: *Contract professionals are perceived to be less trustworthy than permanent professionals.*

Our last hypothesis concerns supervisor assessments of subordinate performance. This hypothesis integrates and summarizes the logic we have developed in the preceding hypotheses. Following on the logic of differences in organizational citizenship behaviors and the employment relationship between contract or permanent professionals and the organization, we expect that contract

professionals will be rated lower in performance evaluation compared to their permanent counterparts. Therefore:

Hypothesis 3d: *Contract professionals are rated lower on performance than permanent professionals.*

2.5 Method

2.5.1 Research Setting

To improve the homogeneity of our sample and reduce the likelihood of extraneous factors that might influence the results, we focused on one organization, one kind of IS professional (software developers), and one kind of IS sourcing (i.e., contracting in of IS professionals through employment agencies, see Ang and Slaughter, forthcoming).

We selected the Software Development Division of a large transportation company. The division employs both contract and permanent IS professionals who work together on teams to develop information systems. Seven of the 12 departments in the Division have both contract and permanent professionals. Within their departments, the professionals are further divided into 21 work teams. Fifteen are mixed teams including both contract and permanent professionals. The remaining six have only permanent professionals. We focused on the 15 mixed work teams for the study. Of the 15 mixed work teams, 11 agreed to participate. Everyone on these 11 teams completed the survey. The other four work teams declined to participate as they were busy implementing information systems at the time of the study. We did not find any significant differences between these teams and participating teams in terms of team size ($t = 1.87$, $p > .10$) and mix of contract and permanent professionals ($t = .32$, $p > .75$). Therefore, participating teams should be representative of all mixed teams in the organization. The participating teams ranged between four to seven members (including a supervisor) on each team. Each team had one or two contract professionals.

2.5.2 Participants

Complete responses from all participants were obtained. Participants included 15 contract professionals and 48 permanent professionals, of whom 11 are supervisors. Thus, contract professionals account for almost 30% of the non-supervisory workforce in these work teams. Some significant differences exist in the demographic profiles of the non-supervisory contract and permanent professionals. The minimum organizational tenure is one year. On average, organizational tenure is higher for the permanent employees (an average of seven years for permanent employees versus less than two years for contractors). Of the permanent employees, 65% are male, while 93% of contractors are male. Because

contract professionals are significantly different from permanent professionals in organizational tenure and gender, we include these variables as concomitant variables (i.e., covariates) in our analysis.[3]

Due to stringent recruitment selection criteria, the contract and permanent professionals in this organization have comparable IS technical skills and abilities. Both groups undergo similar pre-recruitment tests of technical skills and aptitudes. Furthermore, in contrast to many organizations, except for fringe benefits, the company does not discriminate between contract and permanent professionals. All professionals, contract and permanent, have equal opportunities to attend training courses and company events. Also, no obvious differences exist in physical identification cards. This setting provides a strict test of our hypotheses because differences in treatment of contract and permanent professionals are minimal.

2.5.3 Data Collection

We surveyed multiple informants within the organization to collect data from different perspectives. This approach enriches our understanding of the multi-faceted effects of contract professionals and reduces percept-percept inflation or mono-method bias in our survey (Crampton and Wagner 1994). The use of a single organization provides a natural control for organizational effects. However, the single organization, the intense nature of data collection to obtain multiple observations on each participant and the need to have a complete set of matched responses on each participant to constitute an observation led to difficulties in achieving a large sample size. We, therefore, took a number of steps in our research design to improve the precision and power of our results. These include purposive sampling, use of highly reliable and validated measures, and use of covariates in the analysis (Baroudi and Orlikowski 1989).

Data collection efforts were intense. We administered and collected data on each individual from three perspectives: self, peer, and immediate supervisor. Within

[3] Note that tenure and gender are variables that could be observed before the study, are not influenced by the study, and as such are appropriate for selection as concomitant (Neter et al. 1990, p. 862). We also find differences in age and work experience between the different types of workers (with contract workers being younger and having less work experience). However, age and work experience are highly correlated with organizational tenure (Pearson correlations > .90). Statistically, it is problematic to add them to our model as covariates, given the high multi-collinearity between the variables. Conceptually, of the three related variables, organizational tenure or work experience are the most appropriate variables to include in our model, given our interest in understanding workplace attitudes and behaviors. In the organization in our study, tenure was deemed to be most relevant, given the organization's complex business rules and relationships that workers needed to understand to effectively complete software development projects. However, as a robustness check, we ran our analysis using work experience or age as covariates instead of tenure and found no differences in our results.

each group, participants completed a self-questionnaire designed to elicit self-perceptions and attitudes at the workplace and a peer-questionnaire designed to elicit assessments of the behaviors of each co-worker on their work teams. In addition, supervisors were asked to evaluate each subordinate on their work team. Questionnaires were color coded to distinguish between self, peer, and supervisor assessments. Management approval in conducting the study was given on the condition that participation was voluntary. As such, given our multiple informants design, much time and effort were spent in harnessing support from departmental managers, group supervisors, and individual staff within the division to ensure that we had complete responses from all participants.

Because of the sensitivity of the topics, participants were concerned about confidentiality of responses and wished to remain anonymous. Supervisors were asked to assign a number or letter to each professional on their work teams and to inform each team member of the assigned code so that evaluation of the peer matched with the right code. In this way, only supervisors knew the specific participant corresponding to the code. However, because supervisors could not obtain the responses to the questionnaire, confidentiality and anonymity were protected. Only the researchers had access to the codes on the questionnaires and could use these codes to match the self, peer, and supervisor assessments for each individual.

One month prior to the distribution of the questionnaire, a pilot test was conducted with two contract professionals and three permanent professionals (including one who acted in the supervisory capacity). Participants in the pilot test were drawn from teams that were not part of the primary study. The pilot test was conducted to ensure that questionnaire items were clear and tapped issues of concern to the participants. We obtained feedback and made minor refinements to the questionnaires. We also interviewed the pilot study participants to provide more insight into the organizational context. Interviews covered topics such as the organization's philosophy toward contract professionals, job attitudes, values at the workplace, and the impact of the use of contractors on permanent employees.

2.5.4 Construct Validity and Reliability

Items used in this study were adapted from instruments used in prior research in industrial and organizational psychology that examine workplace attitudes, behaviors, and performance. All items were assessed using a seven-point Likert-type scale with the anchors 1 = strongly disagree, 4 = neutral, and 7 = strongly agree. Participants circled the number to indicate their responses to any specific question. Table 1 describes the items we used, provides sample item questions, and reports the reliability (Cronbach's α) we obtained. All constructs have high reliabilities (.72 to .96).

To assess the construct validity of each scale, a principal components factor analysis with an orthogonal rotation was performed for items within source of

rating (i.e., the factor analysis was conducted three times: for self-rated items, for peer-rated items, and for supervisor-rated items). Within source of rating, the items demonstrated both convergent and discriminant validity (Campbell and Fiske 1959). All scales loaded cleanly (see Tables 2, 3, and 4).

We calculated the value for each self-rated, peer-rated, and supervisor-rated construct by averaging the values for the construct's items.[4] In addition, for the peer ratings of organizational behaviors, we calculated the score relating to a particular individual by averaging the ratings of that individual by the peers within the individual's team. The averaged values of items for the constructs are used in our correlation and mean comparison analyses.

To justify aggregating the peer ratings, we assessed interrater agreement within groups (George and Bettenhausen 1990; Kozlowski and Hattrup 1992) using the agreement index (rWG(J)) suggested by James et al. (1984). This index was calculated for every individual for both the in-role and extra-role behaviors constructs. It was computed using a uniform null distribution. Overall, the estimates of within-group interrater agreement for organizational behaviors indicated a high level of agreement (average for in-role behaviors = .95, range = .68 to .99; average for extra-role behaviors = .94, range = .76 to .99). Consistent with the values suggested by Nunnally (1978), our values for rWG(J) indicate a "good" amount of within-group interrater agreement (George and Bettenhausen 1990). Of the 104 estimates of within-group interrater agreement (for 52 individuals for each of the organizational behaviors constructs), all were close to or greater than .70. This suggests sufficient agreement to average the peer ratings of organizational behaviors for each individual and to use the averaged peer ratings for that individual in subsequent analyses.

[4] We prefer the use of simple averages of construct items to the use of factor scores in our analysis. Although factor scores can exhibit advantages over item averages, there are disadvantages associated with their use. Specifically, the weightings are idiosyncratic to the sample under study, and may change with other samples. Using different factor scores with different samples makes results incomparable across studies and also inflates the fit. Further, respected methodologists suggest that simple averaging of items is better than the weighting of items (e.g., Ghiselli et al. 1981). For these reasons and also to facilitate interpretation of our results, we use item averages for construct values. However, as a robustness check, we also conducted our analysis using the factor scores for the constructs, and the findings are consistent with those reported in Table 6.

Table 1: Questionnaire Measures and Reliability in Our Study

Construct	**Assessed By**	**Measure Assesses**	**Measure/ Source**	**Sample Item**	**Reliability** (Cronbach's α from our study)
Perceived Organizational Support	Self	Degree to which workers perceive the organization as providing help, caring and appreciating their efforts.	Three items. (Eisenberger et al. 1986)	"Help is available from this organization when I have a problem."	0.85
Distributive Justice	Self	Degree to which person perceives organization as giving fair rewards.	Five items. (Mc Lean Parks and Kidder 1994)	"The organization fairly rewards me for the amount of effort I put forth."	0.96
Alienation	Self	Degree to which person feels psychologically detached at work.	Three items. (Middleton 1963)	"While at work, I often feel lonely."	0.72
In-Role Behaviors	Peer	Degree to which person performs expected tasks.	Four items. (Van Dyne and Lepine 1998)	"This worker performs the tasks that are expected as part of the job."	0.93
Extra-Role Behaviors	Peer	Degree to which person performs extra tasks.	Seven items. (Van Dyne and Lepine 1998)	"This worker volunteers to do things."	0.94
Obedience	Super-visor	Degree to which person complies with work rules.	Four items. (Van Dyne et al. 1994)	"This workers follows work rules and instructions with extreme care."	0.95
Loyalty	Super-visor	Degree to which person shows loyalty to organization.	Four items. (Van Dyne et al. 1994)	"This worker defends this organization when others criticize it."	0.91
Trustworthiness	Super-visor	Degree to which person feels comfotable delegating important functions to another.	Three items. (Van Dyne and Ang 1998)	"I am willing to share confidential information with this worker."	0.89
Performance	Super-visor	Degree to which person can fulfill responsibilities and meet quality standards.	Three items. (Van Dyne 1993)	"Quality of work completed is high."	0.94

Table 2: Factor Loadings for Self-Rated Items

	Factor 1	Factor 2	Factor 3
Alienation: Item 1	0.665	-0.336	-0.352
Alienation: Item 2	0.888	0.069	-0.151
Alienation: Item 3	0.619	-0.053	-0.323
Distributive Justice: Item 1	-0.241	0.926	0.082
Distributive Justice: Item 2	-0.121	0.887	0.107
Distributive Justice: Item 3	-0.189	0.862	0.317
Distributive Justice: Item 4	-0.135	0.880	0.268
Distributive Justice: Item 5	-0.124	0.792	0.412
Organization Support: Item 1	-0.418	0.228	0.640
Organization Support: Item 2	-0.118	0.154	0.899
Organization Support: Item 3	-0.398	0.118	0.852

Note: Factors are extracted using Principal Component Analysis. The Rotation is Varimax with Kaiser

Table 3: Factor Loadings for Peer-Rated Items

	Factor 1	Factor 2
Extra-Role Behaviors: Item 1	0.834	0.256
Extra-Role Behaviors: Item 2	0.743	0.337
Extra-Role Behaviors: Item 3	0.804	0.292
Extra-Role Behaviors: Item 4	0.785	0.439
Extra-Role Behaviors: Item 5	0.865	0.307
Extra-Role Behaviors: Item 6	0.740	0.298
Extra-Role Behaviors: Item 7	0.750	0.372
In-Role Behaviors: Item 1	0.298	0.833
In-Role Behaviors: Item 2	0.409	0.763
In-Role Behaviors: Item 3	0.319	0.897
In-Role Behaviors: Item 4	0.344	0.882

Note: Factors are extracted using Principal Component Analysis. The Rotation is Varimax with Kaiser Normalization

Table 4: Factor Loadings for Supervisor-Rated Items

	Factor 1	Factor 2	Factor 3	Factor 4
Loyalty: Item 1	0.906	-0.072	0.320	0.049
Loyalty: Item 2	0.872	0.251	0.049	0.018
Loyalty: Item 3	0.854	0.145	0.325	0.122
Loyalty: Item 4	0.820	-0.008	0.019	0.163
Obedience: Item 1	0.140	0.848	0.359	0.200
Obedience: Item 2	0.091	0.832	0.414	0.194
Obedience: Item 3	0.022	0.797	0.266	0.417
Obedience: Item 4	0.097	0.789	0.287	0.390
Performace: Item 1	0.188	0.224	0.658	0.232
Performace: Item 2	0.285	0.226	0.854	0.302
Performace: Item 3	0.113	0.222	0.614	0.309
Trustworthiness: Item 1	0.105	0.219	0.381	0.748
Trustworthiness: Item 2	0.014	0.080	0.235	0.920
Trustworthiness: Item 3	0.339	0.329	0.300	0.684

Note: Factors are extracted using Principal Component Analysis. The Rotation is Varimax with Kaiser Normalization

2.6 Statistical Analysis

We evaluated our hypotheses using Multivariate Analysis of Covariance (MANCOVA). Because permanent and contract professionals are significantly different in their organizational tenure and gender, we included these variables as covariates in the MANCOVA.[5]

We conducted a number of additional analyses to assess the robustness of our results for the peer ratings of in-role and extra-role behaviors. Our second MANCOVA tests for differences in the ratings of organizational behaviors for each peer dyad (i.e., where ratings are not averaged across peers) to determine whether peer ratings could be influenced by differences in relational demography. Relational demography (Tsui and O'Reilly 1989; Tsui et al. 1995) refers to similarities or differences between an individual and others within a group on such demographic factors as gender, age, race, religion, and occupation. Research in organizational behavior suggests that a variety of work outcomes can be affected by demographic differences between individuals. For example, O'Reilly et al. (1989) have found that turnover is more likely for individuals most different from others in an organization. In the context of our study, relational demography

[5] It is possible that the relationship between organizational tenure and the outcome variables is non-linear. We conducted additional analyses using non-linear forms of the organizational tenure variable (such as the natural logarithm of tenure) and found no differences in our results. Thus, we report our results using the linear form of organizational tenure.

implies that individuals are more likely to positively perceive those who are demographically similar. To assess whether differences in the relational demography in work status between the contract and permanent professionals on a team could lead to a bias in ratings in peer dyads, we operationalized a variable called WSDIFFER (work status difference). We set WSDIFFER to 1 if the work status of the source and target for the peer rating was different and 0 if the same. That is,

> WSDIFFER = 1 if a contractor is rating a permanent professional or if a permanent professional is rating a contractor,

or

> WSDIFFER = 0 if a contractor is rating a contractor or a permanent professional is rating a permanent professional.

We then incorporated WSDIFFER as a covariate in the second MANCOVA to assess whether differences in peer ratings of organizational behaviors could be attributed to differences in relational demography or to actual differences in behaviors.

We also conducted a further analysis in which we operationalized the WSDIFFER variable to distinguish between four groups: (1) contractor evaluating contractor, (2) permanent professional evaluating permanent professional, (3) contractor evaluating permanent professional, and (4) permanent professional evaluating contractor. We then incorporated this alternative operationalization of the WSDIFFER variable as a covariate in a third MANCOVA to assess whether rating bias differed between contractors and permanent professionals.

2.7 Results

Table 5 presents the pairwise correlations between the constructs. Table 6 displays and compares the marginal mean values for the constructs by type of professional (permanent and contract), controlling for gender and organizational tenure.

For our first MANCOVA, the Hotelling's T^2 test is significant (Hotelling's T^2 = .825, $F = 3.666$, $p < .01$) indicating that contract and permanent professionals differ in one or more of the dependent measures. A statistical power analysis of the MANCOVA was conducted to determine whether the sample size of n = 15 contract professionals and n = 37 permanent employees is sufficiently powerful to detect significant effects. Using the method developed by Cohen (1988), the effect size, as measured by the multivariate f^2 index, is .88. This effect size is large according to the levels suggested by Cohen. The large effect size indicates a strong relationship between work status (contract versus permanent) and a linear combination of the dependent variables. Based on the effect size, the post-hoc calculation of power in this MANCOVA is 0.97. This value is well above the

recommended levels of .80 (Baroudi and Orlikowski 1989; Cohen 1988; Murphy and Myors 1998).

Table 6 summarizes the results of univariate F tests for mean differences between contract and permanent IS professionals for each variable. In terms of self-ratings, controlling for differences in organizational tenure and gender, we find that contractors do not differ from permanent professionals in their average perceptions of workplace justice and alienation. Therefore, Hypotheses 1b and 1c are not supported. In terms of perceived

Table 5: Pairwise Intercorrelations of the Constructs

	1	2	3	4	5	6	7	8	9
1. Organizational Support	1.00								
2. Distributive Justice	0.49**	1.00							
3. Alienation	-0.67**	-0.57**	1.00						
4. In-Role Behaviors	-0.17	-0.10	-0.09	1.00					
5. Extra-Role Behaviors	-0.11	-0.08	-0.06	0.70**	1.00				
6. Loyalty	-0.37**	0.01	0.10	0.29*	0.06	1.00			
7. Obedience	-0.15	0.12	-0.18	0.30*	0.12	0.27	1.00		
8. Trustworthiness	-0.33*	0.11	-0.11	0.35*	0.23	0.31*	0.68**	1.00	
9. Performance	-0.29*	0.06	-0.09	0.32*	0.21	0.43**	0.81**	0.80**	1.00

* indicates significance at 5% level ** indicates significance at 1% level

organizational support, we find that contractors perceive higher levels of organization support on average than permanent professionals, contradicting Hypothesis 1a. For average peer ratings, we find that contract workers exhibit significantly lower in-role behaviors (contradicting Hypothesis 2a) and lower extra-role behaviors (supporting Hypothesis 2b) than permanent workers, controlling for differences in organizational tenure and gender. Finally, Hypotheses 3a to 3d are supported as supervisors rate their contract sub-ordinates significantly lower than their permanent counterparts on loyalty, obedience, trustworthiness, and performance.

The results of our additional analyses of peer ratings are consistent with the findings from our first MANCOVA. For our second MANCOVA, the Hotelling's T^2 test is significant (Hotelling's $T^2 = .196$, $F = 18.872$, $p < .01$). Controlling for the relational demography of work status, this result indicates that significant differences exist between the organizational behaviors of contract and permanent IS professionals. The post-hoc calculation of the power in this MANCOVA is high at 0.99. We also conducted a MANCOVA using our alternative variable for relational demography that distinguishes between the four different types of

rater/ratee dyads. Overall results from this additional analysis are consistent with the MANCOVA results just reported. The Hotelling's $T^2 = .082$, $F = 7.916$, $p < .01$; the power of this test is high at 0.95.

Table 6: Hypothesized and Actual Results from MANCOVA Analysis

Variable	Hypotheses (C=Contractor, P= Permanent)		Covariates		Perma-nent Workers n = 37	Contract Workers n = 15	F value of means comp arison	Actual Relation-ship Found
	H#	Relationship	Gender	Organiza-tional Tenure	Marginal Mean (std dev)	Marginal Mean (std dev)		
Self Assessment								
Organizational Support	1a	C < P	0.17 (0.45)	-0.01 (0.05)	4.08 (0.23)	4.83 (0.38)	2.60*	C > P
Distributive Justice	1b	C < P	0.48 (0.54)	0.01 (0.06)	4.05 (0.28)	4.01 (0.46)	0.01	C = P
Alienation	1c	C > P	0.21 (0.47)	-0.01 (0.05)	3.28 (0.24)	3.36 (0.40)	0.03	C = P
Peer Assessment								
In-Role Behaviors	2a	C = P	-0.03 (0.22)	-0.01 (0.02)	5.81 (0.11)	5.21 (0.19)	6.80*	C < P
Extra-Role Behaviors	2b	C < P	-0.09 (0.21)	-0.01 (0.02)	5.38 (0.11)	4.56 (0.18)	13.55 **	C < P
Supervisor Assessment								
Loyalty	3a	C < P	-0.31 (0.22)	-0.02 (0.02)	4.52 (0.11)	4.08 (0.19)	3.52*	C < P
Obedience	3b	C < P	0.17 (0.41)	-0.21 (0.04)	5.54 (0.21)	4.69 (0.35)	3.93*	C < P
Trustworthiness	3c	C < P	-0.02 (0.38)	0.04 (0.04)	5.83 (0.19)	4.34 (0.32)	14.24 **	C < P
Performance	3d	C < P	0.04 (0.38)	0.01 (0.04)	5.74 (0.20)	4.75 (0.32)	6.24**	C < P

Note: Estimated coefficients are reported for the covariates with the standard deviation in parentheses. Marginal mean values from the MANCOVA analysis are reported for the dependent variables after controlling for gender and organizational tenure.

* indicates significance at 5%level ** indicates significance at 1%level

Controlling for relational demography, our results for the peer dyads indicate that the in-role behaviors exhibited by contract workers (meanc = 5.45) are lower than those exhibited by permanent workers (meanp = 5.70). This difference in means is

significant ($F_{1,194} = 2.35$, $p = .06$). Similarly, the extra-role behaviors exhibited by contract workers (meanc = 4.44) are lower than those exhibited by permanent workers (meanp = 5.37). This difference in means is significant ($F_{1,194} = 32.92$, $p < .01$). We also find similar results in an analysis of the peer dyads using our alternative variable for relational demography that distinguishes between the four different types of rater/ratee dyads. Controlling for the type of relational demography in the dyad, the in-role behaviors exhibited by contract professionals (meanc = 5.38) are lower than those exhibited by permanent professionals (meanp = 5.65). This difference in means is significant ($F_{1,194} = 2.66$, $p < .05$). Similarly, the extra-role behaviors exhibited by contract professionals (mean = 4.63) are lower than those exhibited by permanent professionals (meanp = 5.30). This difference in means is significant ($F_{1,194} = 12.58$, $p < .01$). Our results from these three analyses are consistent and imply actual differences in organizational behaviors between the two kinds of professionals. Contract professionals engage in lower in-role behaviors (contrary to our expectations) and in lower extra-role behaviors (as we expected).

2.8 Discussion

Table 6 compares our findings and hypotheses. Overall, the results from Study 1 support many of our hypotheses but also reveal some surprises. Consistent with our hypotheses, we observe that IS contractors engage in fewer organizational citizenship behaviors and are perceived to be less trustworthy, loyal, and obedient than permanent professionals. This pattern of results is consistent with the inherent differences in the social exchange relationship between contract or permanent professionals and their employers. Contrary to our predictions, we find that IS contractors perceive a more favorable work environment than permanent professionals in this organization. Contractors perceive high levels of organization support. They do not feel that they have been alienated or treated unjustly in the workplace relative to their permanent peers. However, despite a favorable work environment for contractors, peers observe their contract counterparts to exhibit lower in-role behaviors. Moreover, supervisors evaluate contractors' performance lower than that of their permanent counterparts. Contractors may be rated lower not because their performance is actually lower but because supervisors and peers expect their performance to be lower. However, our findings suggest that contractors do in fact perform at a lower level than permanent professionals. That is, no matter who rates the contractors-whether permanent or contract peer-the behaviors of contractors are consistently rated lower than those of permanent professionals. To further illustrate, a supervisor in the pilot study related an incident that reflected what he referred to as the typical behavior of contract professionals in the organization:

> The supervisor had assigned a contract professional some simple modules to code and had established a one-week deadline to complete the work. The contract

> professional completed the modules exactly on schedule; however, the supervisor observed that the contract professional seemed to pace out his work over time and made maximum use of the one-week duration given. As the supervisor reviewed the program specifications against the delivered modules, he realized that he had left out several important algorithms of the modules from the specifications. These algorithms were not implemented in the modules coded by the contractor. In a subsequent conversation, the contractor admitted that he knew the algorithms were missing but had kept quiet because, "…it is not my job to question work assigned to me." The contractor asserted that the specifications were not clear and complete, and that he should not be blamed for errors in specifications. [Interview Transcript; Supervisor, Transportation Company]

Our unexpected findings and the incident reported by the supervisor suggest the need to more closely examine the task and work environments of contract versus permanent IS professionals. Thus, we conducted a second study that was qualitative in nature. Our goals in this second study were to obtain a deeper and richer understanding of their jobs, roles, and tasks and to understand how differences in the work environment may contribute to differences in their work attitudes, behaviors, and performance.

3 Study 2: The Case Studies

3.1 Job Design and Work Outcomes

In Study 1, we observed that professionals who have a different work status experience different work outcomes in terms of their individual work attitudes, behaviors, and performance as perceived by peers and supervisors. To frame our examination of the work environment for contract and permanent professionals, we adopted Hackman and Oldham's (1980) Job Characteristics Model (JCM). According to the model, five core task dimensions (variety, identity, significance, autonomy, and feedback) influence perceptions of the quality of work life as well as job performance. As articulated in the Job Characteristics Model, task variety refers to the variety of duties, tasks, and activities for a job. Task identity refers to the extent to which a job allows the opportunity to complete an entire piece of work from beginning to end. Task significance refers to the extent to which the job is significant and important compared to other jobs in the organization. Task autonomy refers to the extent to which the job allows freedom, independence or discretion in work scheduling, sequence, methods, procedures, quality control or other decision-making activities. Task feedback refers to the extent to which the work itself provides feedback about the effectiveness of job performance.

Hackman and Oldham's Job Characteristics Model is relevant because we are striving to understand whether any systematic differences in the jobs and work environments for contract versus permanent professionals lead to differences in work outcomes. Below we describe our qualitative study in which we adopt the JCM as the theoretical lens to examine the differences in tasks and work environments of contract versus permanent professionals in software development.

3.2 Site Selection and Research Setting

In Study 2, we conducted case studies in three organizations. One was the transportation company in our first study, enabling us to further explore the reasons for the survey findings from this organization. The other two were a private hospital and a government housing agency, selections based on Yin's (1994) recommendations to enhance literal replication in multiple case sampling. Although the organizations in this study represent different industries (transportation, medical, and housing) and sectors (private versus public), all have large IS departments and hire contractors to work with permanent employees on software development teams.

3.3 Data Collection

Data collection involved a series of in-depth interviews with key informants in the organizations. We followed a multiple-informants design in our case studies, similar to our approach in Study 1. We conducted interviews with IS contractors, permanent peers, and supervisors, randomly selecting two contractors and two permanent professionals in each organization, for a total of 12 interviews. Note that we interviewed individuals in the transportation company for Study 2 who had not participated in Study 1. Contractors from each organization were selected from those who worked with permanent professionals on mixed software development teams. Permanent professionals from each organization were selected from supervisors responsible for supervising one or more mixed teams of contract and permanent professionals and from software developers who worked with at least one contractor on a mixed software development team.

Using semi-structured interview questions, we asked background questions about current job position, organizational tenure, and prior work experience. Non-supervisory individuals were asked to describe their overall perceptions of work experiences at the current organization and then to describe in detail the nature of their jobs and their tasks, duties, and responsibilities. The contractors were also asked about the nature and terms of their contracts, including length, salary, termination, and benefits. Supervisors were asked to reflect upon their experiences in supervising contractors and permanent employees and to compare contractors to

permanent subordinates in terms of similarities and differences in their backgrounds and job assignments. Supervisors were also asked to describe the challenges and opportunities in supervising mixed teams of contract and permanent professionals.

The first author and two research assistants conducted the interviews. All interviews were conducted on-site and generally lasted two to three hours. Interviews were either tape-recorded or documented with copious notes taken during the interview and transcribed immediately afterward. Transcripts from the 12 interviews comprised 15,494 words and 83 pages of text.

3.4 Textual Analysis: Analytical Strategy and Reliability Assessment

We employed the methods suggested by Miles and Huberman (1984) to code and analyze the qualitative data from our interview transcripts. We used a two-step coding and analysis process. First, to mitigate bias, the second author (who did not participate in the interviews) independently read the transcripts and coded the data into themes using the task dimensions included in the Hackman and Oldham job characteristics model. Table 7 presents an example of some coded data from our first step of coding and analysis.

Our second step of coding and analysis involved summarizing the data for each task dimension across the three cases and across each type of professional (i.e., contractor vs. permanent professional). The coding identifies the type of task dimension discussed by each interviewee and also the strength of each task dimension (i.e., high or low) that was experienced by contract versus permanent professionals in their immediate work environment. The intent in this second round of coding was to help detect patterns in the evidence related to each construct by comparing task dimensions across each type of professional and across each organization. Table 8 presents the results from our second round of coding and analysis.

To establish an independent assessment of the reliability of the coding, two "blind" coders, Ph.D. students in IS who were not involved in the study, read and coded transcripts according to the dimensions from the JCM. They conducted initial coding on the transcript from the first organization to establish an initial interrater reliability. The Cohen's Kappa for this coding was .76. The coders then discussed the discrepancies in coding and developed explicit coding rules to reconcile the discrepancies. Subsequently, the coders independently coded the rest of the transcripts, with a resulting Cohen's Kappa of .97. Given this level of near perfect agreement, the coding approach was deemed reliable, satisfying Landis and Koch's (1977) threshold of 0.70.

3.5 Results

3.5.1 Background on Work Environment

The attitudes, behaviors, and performance of contract and permanent professionals in all three organizations are similar to those found in Study 1. In terms of attitudes, we found that contractors receive the same socialization processes as permanent professionals, actively participate in departmental meetings, and join in social gatherings. The contractors, therefore, reported favorable work environments and were not alienated socially in the workplace. In terms of behaviors and performance, supervisors reported IS contractors' performance to be lower than their permanent counterparts, consistent with results in Study 1.

Table 9 provides a comparison of hiring, termination, and compensation practices for the contract and permanent IS professionals interviewed in the three organizations. Distinct differences exist in the practices used to hire, terminate, and compensate contractors versus their permanent counterparts. The contractors are hired from employment agencies. They typically have one- to two-year contracts with the organizations. In all three organizations, few contractors have more than two years of organizational tenure because their contracts normally are not renewed after two years. In contrast, for permanent staff hired directly by the organizations, the average organizational tenure ranges from two to eight years. Salaries (in terms of hourly pay) are higher for contractors in all three organizations-about 25% to 30% higher than for comparable permanent professionals. However, the contractors receive neither health insurance nor retirement benefits. Typically, contractors do not work overtime; each organization has a policy restricting overtime for contractors. If contractors do work overtime, they may not be fully compensated because the organizations pay the employment agency, which may choose not to pass on the extra pay to the contractors.

Considerable variation exists in termination practices. In some situations, either contractors or the organizations can prematurely terminate a contract with one month's notice. In the hospital, contractors can be terminated with 24 hours notice and one-month compensation. In other situations, the employment agency charges penalties for early termination either to the organization or to the contractor. Contractors could be prohibited by their employment agency from extending their contracts beyond the negotiated termination date. The variation in termination policies appears to derive from differing practices among employment agencies. In contrast, less variation exists in termination policies for permanent employees. Organization policies typically specify at least one month's notice and provide one or more months of severance pay if the organization initiates the termination. In all three organizations, permanent staff are more likely to terminate voluntarily rather than be terminated by the organization.

Table 7: Examples of Data from the First Pass of Coding for Each Construct

	Construct Definition	Transportation Company		Hospital		Government Agency	
		IS Permanent	IS Contractors	IS Permanent	IS Contractors	IS Permanent	IS Contractors
Task Variety	The variety of duties, tasks and activities for a job.	"My job scope includes analysis, design and implementation: eliciting requirements from users, and vendor management and contracting. I also mentor the contractors on my team."	"My work is primarily coding. I work on old and new platforms"	"My job scope includes analysis, design and implementation. I do little or no programmnig. I do some systems integration and manage vendors. I am the interface with the users. "	"I do SAP programming. I also code customer MIS reports, but I don't have much contacts with the users."	"I mainly do analysis and talk to the users to formulate problems. I also work with the contractors and approve their work"	"I only do coding, nothing else."
Task Identity	Job allows an opportunity to complete an entire piece of work from beginning to end.	"I work on projects from start to finish."	"I do small tasks, not large."	" Any development analysis work I do is from start to end."	" The specs are provided to me by the systems analyst. I can't test and implement my code"	"I am responsible for the project from start to end."	"I can't do the implementation because I can't access the databases and the users."
Task Signifi cance	Job is significant and important compared with other jobs in the organization.	"I am the project leader and have authority over the team."	"My work involves mainframes and old technology. What is the value of this?"	"I supervise and integrate a set of vendor solutions. The vendor is responsible for support, but I am the project leader."	"I have to work with fictitious data on the development system. My access rights to patient data are restricted."	"I am the project leader and can manage the resources for the project."	"I have no authority or rights. I must go through the in house staff for everything."
Task Autonomy	Jobs allows freemom, independence or discretion in work scheduling, sequence, methods, procedures, quality control or other decision- making.	"I am the project leader and create the project plan based on what I think needs to be done."	"I am told specifically what to do (change) in the system and the due date."	"I have a lot of choice in how I do a project. Each project is different."	"I cannot negotiate the type of work they give me."	"Permanent staff can determine the project scope and details."	" Everythings spelled out in the specs."
Task Feedback	The work itself provides feedback about the effectiveness of job performace	"I am responsible and accountable for the performance of each project phase."	"My supervisor checks on the quality of my coding."	"I am successful if there are no problems in integrating vendor solutions."	" Contract programmers are given much closer supervision , e.g. check their LOC to ensure that no new things are added."	"I am responsible for the proper functioning of the system."	" Supervisors go through the work with the contractors and tell them to expect close monitoring"

Table 8: Patterns from Second Pass of Coding for Each Construct

		TransportationCompany		Hospital		Government Agency	
	Construct Definition	**IS Permanent**	**IS Contractors**	**IS Permanent**	**IS Contractors**	**IS Permanent**	**IS Contractors**
Task Variety	The Variety of duties , tasks and activities for a job.	HIGH: Analysis, Design, Testing, Implementation , End User Liaison, Vendor Management, Contract Negotiation, Project Leader, Mentoring Contractors	LOW: Coding	HIGH: Analysis, Design, Testing, Implementation , End User Liaison, Vendor Management, Contract Negotiation, System Integration, Configuration , System Administration, Database Design, Project Leader, Mentoring Contractors	LOW: Coding , Report Generating	HIGH: Analysis, Design, Testing, Implementation , End User Liaison, Project Leader, Mentoring Contractors	LOW: Coding, Report Generating
Task Identity	Job allows an opportunity to competean entire piece of work from beginning to end.	HIGH: work on projects from start to finish	LOW: no view of whole system or project	HIGH: work on projects from start to finish	LOW: no view of whole system or project	HIGH: work on projects from start to finish	LOW: no view of whole system or project
Task Signifi cance	Job is significant and important compared with other jobsin the organization.	HIGH: assigned managerial and supervisory roles, have authority and access privileges	LOW: workarounds and maintenance on older technologies, no access privileges	HIGH: assigned managerial and supervisory roles, have authority and access privileges	LOW: no rights authority or access privileges	HIGH: assigned managerial and supervisory roles, have authority and access privileges	LOW: no authority or access privileges
Task Autonomy	Jobs allows freedom, independence or discretion in work scheduling, methods, quality control or other decision- making.	HIGH: given project request/scope and can create work plan, much discretion in setting project schedules	LOW: cannot negotiate the type of work assigned or deadlines, given specific instructions on what to do and how to do it.	HIGH: given project request/scope and can create work plan, much discretion in setting project schedules	LOW: cannot negotiate the type of work assigned or deadlines, given specific instructions on what to do and how to do it.	HIGH: given project request/ scope and can create work plan, much discretion in setting project schedules	LOW: cannot negotiate the type of work assigned or deadlines, given specific instructions on what to do and how to do it.
Task Feedback	The work itself provides feedback about the effectiveness of job performance	HIGH: project outcomes give feedback on effectiveness of earlier stages	LOW: supervisor monitors work, assignments, quality of coding	HIGH: project outcomes give feedback on effectiveness of earlier stages	LOW: supervisor monitors work, assignments, quality of coding	HIGH: project outcomes give feedback on effectiveness of earlier stages	LOW: supervisor monitors work, assignments, quality and timeliness of coding

Table 9: Comparison of Hiring, Compensation and Termination Practices for Contract and Permanent IS Professionals Included in Case Studies

	Transportation Company		Hospital		Government Agency	
	IS Permanent	**IS Contractors**	**IS Permanent**	**IS Contractors**	**IS Permanent**	**IS Contractors**
Hiring Practices	Directly	Through Employment Agency	Directly	Through Employment Agency	Directly	Through Employment Agency
Structure of Salary and Benefits	Salaried (not hourly). 12 days vacation pay. Medical benefits free. Company contributes to retirement fund. Can be promoted.	Hourly (rate averages 25-30% more than for permanent). No overtime pay. 8 days vacation paid through employment agency. No medical benefits. No retirement fund. Cannot be promoted.	Salaried (not hourly). 10 days vacation pay. Medical benefits free. Company contributes to retirement fund. Can be promoted.	Hourly (rate averages 25-30% more than for permanent). No overtime pay. No paid vacation days. No medical benefits. No retirement fund. Cannot be promoted.	Salaried (not hourly). 12 days vacation pay. Medical benefits free. Company contributes to retirement fund. Can be promoted.	Hourly (rate averages 25-30% more than for permanent). No overtime pay. 9 paid vacation days for entire contract. No medical benefits. No retirement fund. Cannot be promoted.
Termination Practices	Usually requires at least 1 month notice on either side and severance pay.	Usually requires at least 1 month notice of premature termination on either side.	Usually requires at least 1 month notice on either side and severance pay.	Contractors can be terminated upon 24 hour notice and 1 month severance pay.	Usually requires at least 1 month notice on either side and severance pay.	Contractors must pay penalty to break the contract.

3.6 Job Design Features

As Tables 7 and 8 indicate, patterns in the job dimensions differ by type of professional. The jobs of contractors in each organization are low in task variety, identity, significance, autonomy, and feedback, relative to those of permanent professionals. Contractors' tasks are low in variety because they primarily do programming tasks, compared to permanent professionals whose activities include analysis, design, user interaction, implementation, system integration, systems administration, configuration management, vendor management, project management, and database design as well as socializing and mentoring the contract professionals on their teams.

Because contractors are usually assigned only coding tasks, they do not have the opportunity to see the results of their work when the system is implemented, leading to low task identity:

> I have no view of the whole picture, just a small view of what I am doing. [Interview Transcript, IS Contractor, Transportation Company].

In contrast, permanent professionals in all three organizations are involved in projects from start to finish. This gives them a greater opportunity to experience completion of an entire piece of work, although they may not actually do all of the tasks in each phase.

The contractors' comments about their work assignments suggest that they believe their jobs have low task significance. Some contractors indicated they were assigned maintenance tasks or „workarounds," often on older technologies, instead of new development:

> They brought me in to work on an old technology like FoxPro. I couldn't believe it! There is absolutely no value in [maintaining] such outdated systems! [Interview Transcript, IS Contractor, Transportation Company].

Contractors also have restricted access to users, customers, production systems, and production databases. In addition, the organizations all have policies that prohibit or restrict contractors from staying beyond normal working hours. If contractors have to work overtime, a special security approval process is required to enable them to stay late. That the contractors may view these restrictions as a reflection of the lower significance of their role in the organization is implicit in the comments of a contractor:

> [The company] did not immediately give me the privileges and rights to the production system. They may do so later in the contract. But, I don't have full access now. They have to recognize me first. [Interview Transcript, IS Contractor, Transportation Company].

At the time of this statement, the contractor was over 16 months into his two-year contract with the transportation company. In contrast, permanent professionals are given more authority, access, and responsibility at the beginning of their employment.

Contractors also have low autonomy. They are given specific instructions on what to do and how to do it and have little ability to negotiate their work assignments:

> Contractors are given program specifications. Because they don't know the business, everything is spelled out clearly for them. [Interview Transcript, Supervisor, Government Agency].

On the other hand, permanent professionals have relatively high autonomy in their jobs:

> Permanent staff are given only the project scope and can find out the details themselves. [Interview Transcript, Supervisor, Government Agency].

Compared to the jobs of their permanent counterparts, contractors' jobs are low in task feedback. Permanent professionals receive frequent task feedback in the form of intermediate and final project outcomes. In contrast, contractors receive detailed feedback from their supervisors but not from the work itself, leading to

low task feedback. In all three organizations, supervisors closely monitor and evaluate contractors. They are assessed in terms of the correctness of their code and whether they follow good programming practices. For example, a supervisor described how she provided detailed feedback to contractors:

> I regularly check on contractors' overall job assignments and work load and evaluate them based upon whether they meet the work plan. Sometimes, I need to counsel them, if there are a lot of errors in their work or they're not meeting the schedule. I first go through the work plan and ask for reasons for the poor quality work...if the contractor makes a mistake, I assess the reasons why it occurs. For example, if the code has a lot of GOTO statements, then it is not acceptable. I need to monitor them closely to maintain the standard. [Interview Transcript, Supervisor, Hospital].

The transcripts suggest that contractors do not obtain direct feedback about their job performance from the work itself. Rather, they appear to rely solely upon supervisors to evaluate the quality of their work. Contractors appear to have limited access to users, customers, production information systems, and databases in the organizations. This could prevent them from testing and assessing the quality of their work themselves. Contractors are also less attuned to the nuances of the organizational context, which may inhibit them from perceiving and interpreting feedback cues in the work environment.

4 Overall Discussion and Conclusion

We believe this sequential, mixed-method study of contract versus permanent IS professionals represents the first effort in IS research to formally examine the behavioral consequences of mixed teams of contract and permanent professionals in software development. Our results were derived from two complementary studies. The quantitative survey provided data on differences in the perceived attitudes, behaviors, and performance of the two groups of professionals. The qualitative case studies served to support and expand the data obtained from the survey, providing additional evidence that is useful in understanding why these differences between the two groups exist.

The results from Study 1 indicate that the work attitudes of contract professionals are more favorable than permanent professionals. Nonetheless, the contractors are perceived to exhibit lower in-role and extra-role behaviors and lower performance. Case analyses from Study 2 suggest that the results found in Study 1 can be attributed to how organizations assign jobs to the two groups of professionals. The organizations in our study designed jobs for their IS contract professionals that are narrow, limited in scope and significance, unchallenging, and lack autonomy. This may contribute to the contractors' lower behaviors and performance. In turn,

permanent employees' jobs may be unintentionally expanded to compensate for the under-employment of the contractors. Thus, permanent employees bear the primary accountability and responsibility not only for their work but also for the contractors' work. This increase in responsibility and accountability may not be explicitly rewarded, leading to perceptions of lower organizational support by permanent professionals. Eventually, a negative spiral may emerge where permanent co-workers experience work spillover from contract professionals (Pearce 1993; Smith 1994).

A number of theoretical, methodological, and practical implications arise from this study. By way of theoretical implications, this study has shown that IS professionals with different work status experience differences in the nature of the job they perform and exhibit different work attitudes, behaviors, and performance. The study highlights the importance of work context, specifically the nature of job design that can mediate the relationship between work status and job related outcomes in IS contracting. Figure 2 shows our revised theoretical model based on the findings from the two studies.

As shown in Figure 2, we theorize that job design characteristics mediate the relationship between work status and attitudes, behaviors, and performance in software development teams. Specifically, we propose that work outcomes of an IS professional are not directly affected by work status but by the nature of the jobs assigned to them. Future research is needed to test the model proposed in Figure 2.

A second research implication relates to the type of contract professionals who have been our focus of attention. In this study, we restricted our attention to contractors who are deployed on software development teams. Future research should examine contractors' attitudes, behaviors, and performance in the larger variety of roles to which they are increasingly being assigned, including strategic consulting and even Chief Information Officer.

By way of methodological implications, this study shows that a sequential, mixed-method design adds scope, depth, and breadth to our findings. The first method of theory testing is used sequentially to help inform the second method of theory building. Research using a sequential, mixed methodology should be conducted to allow researchers not only to test an existing theory but also to build upon existing theory. Both the survey and case study methods use intense data collection efforts. Most prior studies of IS personnel have used self-report measures and reported only from the perspective of the individual. Our study suggests that gathering the perceptions of others such as peers and supervisors is essential for assessing the contribution of individuals who work in teams.

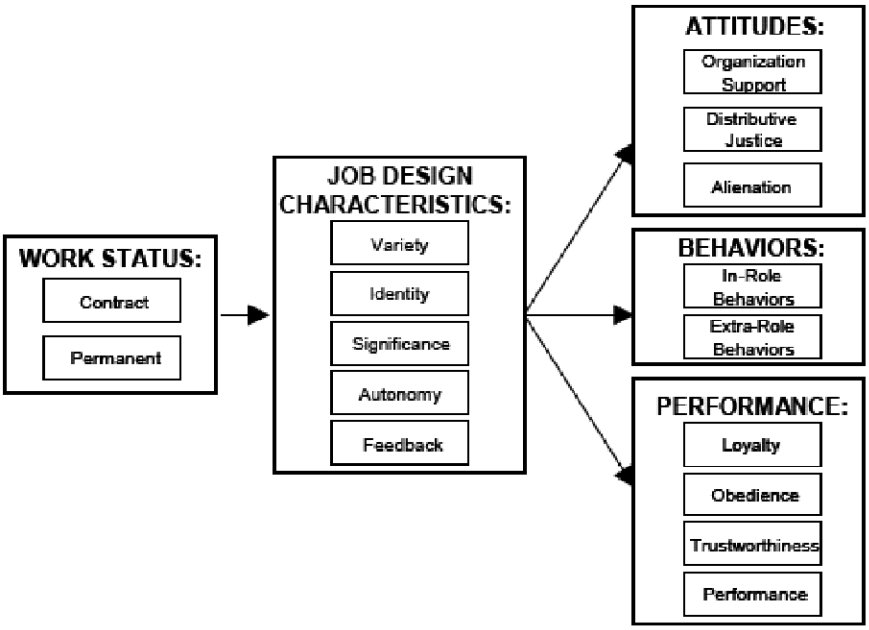


Figure 2: Proposed Research Model

In terms of practical implications, our results suggest that organizations need to redesign and tailor work assignments for contract professionals on their software development teams. Specifically, organizations should examine whether they are under-employing contract professionals and unwittingly broadening the job scope and responsibilities of permanent co-workers. Organizations may also need to adjust their appraisal and reward systems for their permanent professionals. Specifically, organizations must ensure that they adequately compensate permanent professionals who take on the additional responsibilities of monitoring, training, and socializing contract co-workers.

A second and related practical implication is the importance of clarifying job scope and responsibilities for different professionals. The management model for IS professionals may be evolving to one used to manage other highly paid and skilled professionals such as lawyers or major league sports players. Under this model, IS organizations build special-purpose teams composed of permanent core professionals, as well as temporary specialists, independents, and contractors. Essential to the success of this model is the ability to communicate job scope and set clear performance expectations for all members of the team, individually and collectively. Our study suggests that keeping mixed teams of contract and permanent professionals satisfied and productive is a challenging but increasingly necessary and worthwhile managerial goal.

Acknowledgements: Funding for this research was provided by a Faculty Development Grant from Carnegie Mellon University, Pittsburgh, Pennsylvania, and by the Information Management Research Center, Nanyang Business School, Singapore. We gratefully acknowledge the valuable contributions made by the Senior Editor, the Associate Editor, and four anonymous reviewers. We thank Laurie Weingart for her constructive comments, Millie Myers for professional editing, Christine Koh and Damien Joseph for coding assistance, and A. B. Kang, I. Liew, and H. J. Bin for assistance with data collection.

References

Alexander, S. .First-Year Lessons,. Computerworld (32), September 28, 1998, p. 83.

Ang, S. .Toward Conceptual Clarity of Outsourcing,. in Business Process Reengineering:Information Systems Opportunities and Challenges,B. C. Glasson, I.T. Hawryszkiewycz, B.A. Underwood, and R. A. Weber (eds.), North-Holland Elsevier Publishers, Amsterdam, 1994,pp. 113-126.

Ang, S., and Beath, C. M. .Hierarchical Elements in Software Contracts,. Journal of Organizational Computing, (3:3), 1993, pp. 329-362.

Ang, S., and Cummings, L .L. .Strategic Responses to Institutional Influence on Information Systems Outsourcing,. Organization Science, (8:3), May-June, 1997, pp. 235-256.

Ang, S., and Slaughter, S. .The Missing Context of Information Technology Personnel: A Review and Future Directions for Research,. in Framing the Domains of IT Management Research: Glimpsing the Future through the Past, R. Zmud (ed.), Pinnaflex Educational Resources, Cincinnati, OH, 2000, pp. 305-328.

Ang, S., and Slaughter, S. .A Taxonomy of Employment Insourcing and Outsourcing Strategies in Information Systems,. in Information Systems Outsourcing in the New Economy: Enduring Themes, Emergent Patterns and New Directions, R. Hirschheim and J. Dibbern (eds.), Springer-Verlag, Heidelberg, Germany, 2002 (forthcoming).

Ang, S., and Straub, D. W. .Production and Transaction Economics in Information Systems Outsourcing: A Study of the U.S. Banking Industry,. MIS Quarterly, (22:4), 1998, pp. 535- 552.

Atkinson, J. .Manpower Strategies for Flexible Organizations,. Personnel Management (16), 1984, pp. 28-31.

Barker, K., and Christensen, K. .Controversy And Challenges Raised By Contingent Work Arrangements,. in Contingent Work, K. Barker, and K. Christensen (eds.), ILR Press, Ithaca, NY: Cornell University, 1998, pp. 1-20.

Baroudi, J. J., and Orlikowski, W. J. .The Problem of Statistical Power in MIS Research,. MIS Quarterly (13:1), 1989, pp. 87-106.

Belous, R. S. The Contingent Economy: The Growth of the Temporary, Part-Time and Subcontracted Workforce, National Planning Association, Washington, DC, 1989.

Blau, P. Exchange And Power In Social Life, Wiley, New York, 1964. Bureau of Labor Statistics, Contingent and Alternative Employment Arrangements, Report 900, U.S. Government Printing Office, Washington, DC, 1995.

Campbell, D. T., and Fiske, D. W. .Convergent and Discriminant Validation by the Multitrait- Multimethod Matrix,. Psychological Bulletin (56:2), 1959, pp. 81-105.

Cappelli, P. .Rethinking Employment,. British Journal of Industrial Relations, (33:4), December, 1995, pp. 563-603. Chamber of Commerce of the United States, Employee Benefits: 1991 Edition, Report No. A3840-1, Publication No. 0289, 1991.

Clark, T., Zmud, R., and McCray, G. .The Outsourcing of Information Services: Transforming the Nature of Business in the Information Industry,. in Strategic Sourcing of Information Systems: Perspectives and Practices, L. Willcocks and M. Lacity (eds.), Wiley, Chichester, 1998, pp. 45-78.

Cohen, J. Statistical Power Analysis for the Social Sciences (2nd ed.), Lawrence Erlbaum and Associates, Hillsdale, NJ, 1988.

Cole-Gomolski, B. .Reliance on Temps Creates New Problems,. Computerworld (32), August 31, 1998, pp. 1, 35.

Crampton, S. M., and Wagner, III, J. A. .Percept- Percept Inflation inn Micro organizational Research: An Investigation of Prevalence and Effect,. Journal of Applied Psychology (79:1), 1994, pp. 67-79.

Cropanzano, R. (ed.). Justice in the Workplace: Approaching Fairness in Human Resource Management, Lawrence Erlbaum and Associates, Hillsdale, N J, 1993.

Davis-Blake, A., and Uzzi, B. .Determinants of Employment Externalization: A Study of Temporary Workers and Independent Contractors,. Administrative Science Quarterly (38:2), 1993, pp. 195-225.

Deutsch, M. .Cooperation and Trust: Some Theoretical Notes,. Nebraska Symposium on Motivation, Nebraska University Press, Lincoln, 1962, pp. 275-320.

Eisenberger, R., Fasolo, P., and Davis-LaMastro,V. .Perceived Organizational Support and Employee Diligence, Commitment, and Innovation, . Journal of Applied Psychology (75:1), 1990, pp. 51-59.

Eisenberger, R., Huntington, R., Hutchinson, S., and Sowa, D. .Perceived Organization Support, . Journal of Applied Psychology (71:3), 1986, pp. 500-507.

Feldman, D., Doerpinghaus, H., and Turnley, W. .Managing Temporary Workers: A Permanent HRM Challenge,. Organizational Dynamics (23:2), 1994, pp. 49-64.

Fishman, S. Hiring Independent Contractors: The Employer's Legal Guide (2nd ed.), Nolo Press, Berkeley, CA, 1997.

Foa, U. G., and Foa, E. B. Resource Theory: Interpersonal Behavior as Exchange, Plenum Press, New York, 1980.

Gallagher, D. G., and McLean Parks, J. .I Pledge Thee My Troth. Contingently: Commitment and the Contingent Work Relationship,. Human Resource Management Review (11:3), 2001, pp. 181-208.

George, J. M., and Bettenhausen, K. .Understanding Prosocial Behavior, Sales Performance, and Turnover: A Group-Level Analysis in a Service Context,. Journal of Applied of Psychology (75:6), 1990, pp. 698-709.

Ghiselli, E., Campbell, J., and Zedeck, S. Measurement Theory for the Behavioral Sciences, W. H. Freeman and Co., San Francisco, 1981.

Girard, K., and Wallace, B. .Users Skeptical about E-mail Outsourcing,. Computerworld (31), March 31, 1997, p. 12.

Goethals, G. R., and Darley, J. M. .Social Comparison Theory: Self-Evaluation and Group Life,. in Theories of Group Behavior, B. Mullein and G. R. Goethals (eds.), Springer Verlag, New York, 1987, pp. 21-47.

Golden, L. .The Expansion of Temporary Help Employment in the US, 1982-1992: A Test of Alternative Economic Explanations,. Applied Economics (28:9), 1996, pp. 1127-1141.

Golden, L., and Appelbaum, E. .What Was Driving the 1982-88 Boom in Temporary Employment? Preference of Workers or Decisions and Power of Employers,. The American Journal of Economics and Sociology (51:4), 1992, pp. 473-494.

Gouldner, A. W. .The Norm of Reciprocity: A Preliminary Statement,. American Sociological Association (25:2), 1960, pp. 160-178.

Graen, G. B., Novak, M. A., and Sommerkamp, P. .The Effects Of Leader-Member Exchange and Job Design on Productivity and Satisfaction: Testing a Dual Attachment Model,. Organizational Behavior and Human Performance(30:2), 1982, pp. 109-131.

Greenberg, J. .Looking Fair vs. Being Fair: Managing Impressions of Organizational Justice, . in Research in Organizational Behavior, B.

M. Staw and L. L. Cummings (eds.), JAI Press, Greenwich, CT, 1990, pp. 111-158 Greenberg, J. .A Taxonomy of Organizational Justice Theories,. Academy of Management Review (12:1), 1987, pp. 9-22.

Guzzo, R. A., Noonan, K. A., and Elron, E. .Expatriate Managers and the Psychological Contract,. Journal of Applied Psychology (79), 1994, pp. 617-626. Hackman, J. R., and Oldham, G. R. Work Redesign, Addison-Wesley, Reading, MA, 1980.

Hoffman, P. S. The Software Legal Book, Shafer Books, Croton-on-Hudson, NY, 1992.

Hosmer, L. T. .The Connecting Link between Organizational Theory and Philosophical Ethics,. Academy of Management Review (20), 1995, pp. 379-403.

Jacoby, S. M. Employing Bureaucracy: Managers, Unions, and the Transformation of Work in American Industry, 1900-1945, Columbia University Press, New York, 1985.

James, L. R., Demaree, R. G., and Wolf, G. .Estimating Within-Group Interrater Reliability with and Without Response Bias,. Journal of Applied Psychology (69:1), 1984, pp. 85-98.

Kalleberg, A. L., Rasell, E., Hudson, K., Webster, D., Reskin, B. F., Naomi, C., and Appelbaum, E. Nonstandard Work, Substandard Jobs: Flexible Work Arrangements in the United States. Economic Policy Institute and Women's Research and Education Institute, Washington, DC, 1997.

Kalleberg, A. L., and Schmidt, K. .Contingent Employment in Organizations,. In Organizations in America: Analyzing their Structures and Human Resource Practices, A. L. Kalleberg, D.

Knoke, P. Marsden, and J. Spaeth, (eds.), Sage, Thousand Oaks, CA, 1996, pp. 253-275.

Konovsky, M. A., and Pugh, S. D. .Citizenship Behavior And Social Exchange,. Academy of Management Journal (37), 1994, pp. 656-669.

Kozlowski, S., and Hattrup, K. .A Disagreement about Within-Group Agreement: Disentangling Issues of Consistency Versus Consensus,. Journal of Applied Psychology (77:2), 1992, pp. 161-167.

Krausz, M., Brandwein, T., and Fox, S. .Work Attitudes and Emotional Responses of Permanent, Voluntary, and Involuntary Temporary- Help Employees: An Exploratory Study,. Applied Psychology: An International Review, (44), 1995, pp. 217-232.

Kruglanski, A. W., and Mayseless, O. .Classic and Current Social Comparison Research: Expanding the Perspective,. Psychological Bulletin, (108), 1990, pp. 195-208.

Lacity, M., and Hirschheim, R. Information Systems Outsourcing: Myths, Metaphors, and Realities, Wiley, Chichester, 1993.

Landis, J. R., and Koch, G. G. .The Measurement of Observer Agreement for Categorical Data,. Biometrics, (33:1), 1977, pp. 159-174.

Levine, J. M., and Moreland, R. L. .Social Comparison and Outcome Evaluation in Group Contexts,. in Social Comparison, Social Justice, and Relative Deprivation, J. C. Masters and W. P. Smith (eds.), Lawrence Erlbaum and Associates, Hillsdale, NJ, 1987.

Loh, L., and Venkatraman, N. .Diffusion of Information Technology Outsourcing: Influence Sources and the Kodak Effect,. Information Systems Research (3:4), 1992, pp. 334-358.

McKee, J. B. Identity and Alienation, Holt, Rinehart, and Winston, Ltd., London, 1969.

McLean Parks, J., and Kidder, D. .Till Death do us Part: Changing Work Relationships in the 90s,. in Trends in Organizational Behavior, C. L.

Cooper and D. M. Rousseau (eds.), Wiley, New York, 1994, pp. 111-136.

McLean Parks, J., Kidder, D. L., and Gallagher, D. G. .Fitting Square Pegs into Round Holes: Mapping the Domain of Contingent Work Arrangements onto the Psychological Contract,. Journal of Organizational Behavior, (19), 1998, pp. 697-730.

Mallon, M., and Duberley, J. .Managers and Professionals in the Contingent Workforce,. Human Resource Management Journal, (10:1), 2000, pp. 33-47.

Maniscalco, R. .The Employment Staffing Alternative, . Information Systems Management, (12:4), Fall 1995, pp. 66-68.

Matusik, S. F., and Hill, C. W. L. .The Utilization of Contingent Work, Knowledge Creation, and Competitive Advantage,. Academy of Management Review, (23:4), 1998, pp. 680-697.

Middleton, R. .Alienation, Race, and Education,. American Sociological Review, (28:6), 1963, pp. 973-977.

Miles, M. B., and Huberman, A. M. Qualitative Data Analysis: A Sourcebook of New Methods, Sage Publications, Newbury Park, CA, 1984.

Moorman, R. H. .Relationship between Organizational Justice And Organizational Citizenship Behaviors: Do Fairness Perceptions Influence Employee Citizenship?. Journal of Applied Psychology (76:6), 1991, pp. 845-855.

Murphy, K. R., and Myors, B. Statistical Power Analysis, Lawrence Erlbaum and Associates, Mahwah, NJ, 1998.

Nam, K., Rajagopalan, S., Roa, H., and Chaudhury, A. .A Two-Level Investigation of Information Systems Outsourcing,. Communications of the ACM (39:7), 1996, pp. 36-44.

Neter, J., Wasserman, W., and Kutner, M. Applied Linear Statistical Models: Regression, Analysis of Variance and Experimental Designs (3rd ed.), Irwin, Homewood, IL, 1990.

Nisbett, R. E., and Ross, L. Human Inference: Strategies and Shortcomings of Social Judgments, Prentice Hall, Englewood Cliffs, NJ, 1980.

Nollen, S., and Axel, H. Managing Contingent Workers, American Management Association, New York, 1996.

Nunnally, J. C. Psychometric Theory (2nd ed.), McGraw-Hill, New York, 1978. O'Reilly, C., Caldwell, D., and Barnett, W. .Work Group Demography, Social Integration, and Turnover,. Administrative Science Quarterly, (34:1), 1989, pp. 21-38.

Pearce, J. .Towards an Organizational Behavior of Contract Laborers: Their Psychological Involvement and Effects on Employee Co- Workers,. Academy of Management Journal (36:5), 1993, pp. 1082-1096.

Pfeffer, J., and Baron, J. .Taking the Workers Back Out: Recent Trends in the Structuring of Employment,. in Research in Organizational Behavior, B. Staw and L. L. Cummings (eds.), JAI Press, Greenwich, CT, 1988, pp. 257-303.

Pinder, C. C. Work Motivation in Organizational Behavior, Prentice Hall, Upper Saddle River, NJ, 1998.

Richmond, W., Seidmann, A., and Whinston, A. .Incomplete Contracting Issues in Information Systems Development Outsourcing,. Decision Support Systems, (8:5), 1992, pp. 459-477.

Rogers, J. K. .Just a Temp: Experience and Structure of Alienation in Temporary Clerical Employment,. Work and Occupations, (22:2), May, 1995, pp. 137-166.

Rosenthal, D. .I am a Temp,. Computerworld (30), September 16, 1996, pp. 105 106.

Rousseau, D. M. Organizational Behavior in the New Organizational Era, (48), Annual Reviews, Palo Alto, CA, 1997, pp. 515-546.

Rousseau, D. M. Psychological Contracts in Organizations, Sage Publications, Thousand Oaks, CA, 1995.

Rousseau, D. M., and McLean Parks, J. .The Contracts of Individuals and Organizations,. In Research in Organizational Behavior, L. L.

Cummings and B. M. Staw (eds.), JAI Press, Greenwich, CT, 1993, pp. 1-43.

Rousseau, D. M., Sitkin, S. B., Burt, R. S., and Camerer, C. .Not So Different After All: A Cross-Discipline View of Trust,. Academy of Management Review, (23:3), July, 1998, pp. 393-404.

Schmitt, R., and Moody, T. E. Alienation and Social Criticism, Humanities Press, Atlantic Highlands, NJ, 1994. Settoon, R. P., Bennett, N., and Liden, R. C. .Social Exchange in Organizations: Perceived Organizational Support, Leader-Member Exchange, and Employee Reciprocity,. Journal of Applied Psychology, (81:3), 1996, pp. 219- 227.

Slaughter, S., and Ang, S. .Employment Outsourcing in Information Systems,. Communications of the ACM (39:7), 1996, pp. 47-54.

Smith, V. .Institutionalizing Flexibility in a Service Firm,. Work and Occupations (21:3), 1994, pp. 284-307.

Tashakkori, A., and Teddlie, C. Mixed Methodology: Combining Qualitative and Quantitative Approaches, Sage Publications, Thousand Oaks, CA, 1998.

Thorpe, K., and Florence, C. .Why are Workers Uninsured? Employer-Sponsored Health Insurance in 1997,. Health Affairs (18:2), 1999, pp. 213-218.

Tsui, A. S., and O'Reilly, C. A. .Beyond Simple Demographic Effects: The Importance of Relational Demography in Supervisor-Subordinate Dyads,. Academy of Management Journal (32:2), 1989, pp. 402-402.

Tsui, A. S., Xin, K. R., and Egan, T. D. .Relational Demography: The Missing Link in Vertical Dyad Linkage,. in Work Team Dynamics and Productivity in the Context of Diversity, S. Jackson, M. Ruderman, and W. Tornow (eds.), American Psychological Association, Washington, DC, 1995, pp. 97-129.

Van Dyne, L. In-Role and Extra-Role Behaviors: Cross Level and Longitudinal Effects of Individual Similarity to Other Group Members, Unpublished Ph.D. Dissertation, University of Minnesota, Minneapolis, 1993.

Van Dyne, L., and Ang, S. .Organizational Citizenship Behavior Of Contingent Workers In Singapore,. Academy of Management Journal (41:6), 1998, pp. 692 703.

Van Dyne, L., Cummings, L. L., and McLean Parks, J. .Extra-Role Behaviors: In Pursuit of Construct and Definitional Clarity,. in Research in Organizational Behavior, L. L. Cummings and B. M. Staw (eds.), JAI Press, Greenwich, CT, 1995, pp. 185-215.

Van Dyne, L., Graham, J. W., and Dienesch, R. M. .Organizational Citizenship Behavior: Construct Redefinition, Measurement, and Validation, . Academy of Management Journal (37:4), August, 1994, pp. 765-802.

Van Dyne, L., and Lepine, J. .Helping and Voice Extra-Role Behaviors: Evidence of Construct and Predictive Validity,. Academy of Management Journal (41:1), 1998, pp. 108-119.

Willcocks, L., and Lacity, M. Strategic Sourcing of Information Systems: Perspectives and Practices, Wiley, Chichester, 1998.

Yin, R. K. Case Study Research: Design and Methods, (2nd ed.), Sage Publications, Thousand Oaks, CA, 1994.

Zand, D. E. .Trust and Managerial Problem Solving,. Administrative Science Quarterly (17:2), 1972, pp. 229-239.

Zucker, L. G. .Production of Trust: Institutional Sources and Economic Structure, 1840-1920,. in Research in Organizational Behavior, B. M.

Staw and L. L. Cummings (eds.), JAI Press, Greenwich, CT, 1986, pp. 53-111.

When Subordinates Become IT Contractors: Persistent Managerial Expectations in IT Outsourcing[1]

Violet T. Ho

Nanyang Business School, Nanyang Technological University, Nanyang Avenue 639798, Singapore, atwho@ntu.edu.sg

Soon Ang

Nanyang Business School, Nanyang Technological University, Nanyang Avenue 639798, Singapore, asang@ntu.edu.sg

Detmar Straub

Computer Information Systems Department, J. Mack Robinson College of Business, Georgia State University, Atlanta, Georgia 30302-4015, dstraub@gsu.edu

1 Introduction

Since the late 1980s, the trend towards outsourcing of information systems has continued unabated. Much research has focused on reasons why companies outsource (Ang and Cummings 1997, Ang and Straub 1998, Lacity and Hirschheim 1993, Lacity and Willcocks 2000, Slaughter and Ang 1996), but, more recently, research has shifted the focus away from the causes of outsourcing to how companies manage outsourcing contracts (Ang and Beath 1993, Ang and Endeshaw 1997, Ang and Slaughter 2001, DiRomualdo and Gurbaxani 1998). The experience of outsourcing has been mixed. While some companies have attained desired results with IT outsourcing, others have faced significant difficulties in

[1] This paper previously appeared as: Ho, V.T., Ang, S., and Straub, D. "When Subordinates Become IT Contractors: Persistent Managerial Expectations in IT Outsourcing," Information Systems Research (14:1) 2003, pp 66-86. The current version appears with permission of *Information Systems Research.*

managing the change (for example, see Ang and Toh 1998). One challenge, then, is to understand how organizations successfully manage outsourcing contracts.

One form of outsourcing that is commonly practiced is that of spin-offs, examples of which can be found in organizations such as American Airlines, Baxter Healthcare, and Philips Electronics (Willcocks and Lacity 1998). In this form of outsourcing, an IT department (including the employees, systems, and operations) within an organization gets "spun-off" into a separate external entity, becoming empowered to behave as an external vendor and having to focus on new issues such as marketing, customer service, and offering competitive prices to the clients (Ang and Koh 2000, Willcocks and Lacity 1998). In addition, the IT employees formally leave their organization and are transplanted to the new spin-off company, which employs them and offers their services back to th original employer for a service fee. Even though these transplants still provide services to the original organization, it no longer directly employs them. Instead, the spin-off company is the new employer and is responsible for the management and supervision of these transplants, including compensating them and assigning them to specific clients (Ang and Slaughter 2002). In other words, the status of the transplants relative to the original employer changes from subordinates to third-party contractors.

The advantages for a client organization of using transplants (as opposed to nontransplants) are numerous. Due to the transplants' prior experience with the client organization, they are familiar with the operations and procedures of the organization and need not invest as much time and effort to understand its fundamental problems and opportunities. Also, because these transplants (or contractors) are former subordinates of the client-managers, the latter should possess a deeper knowledge of contractor competencies and skills and, consequently, be more effective in supervising them.

There is an alternative hypothesis about the efficacy of using transplants. From their prior experience in supervising the contractors (as subordinates), clientmanagers may have developed clear expectations about what the contractors should provide to the organization, such as a requisite level of work, effort, and commitment. Evidence from social psychology suggests that expectations and beliefs are not readily subject to change, even in the face of disconfirming evidence (e.g., Anderson et al. 1980). Hence, if prior expectations persist into the IT outsourcing relationship, client-managers would tend to think of these contractors as subordinates, imposing on them role expectations that are not appropriate under the new contractual relationship. After outsourcing, client-managers no longer possess the legitimate power previously accorded them as a function of their position in the formal organizational hierarchy. Consequently, conflicts concerning the responsibilities of contractors can (and do) arise between the two parties, which may prove difficult to resolve and, in the worst case, contribute to failure of the outsourcing arrangement.

The objective of this study is to examine managerial attitudes and expectations toward transplants in IT spin-off arrangements. Specifically, we focus on the phenomenon of persistent expectations by exploring the conditions under which managerial expectations persist and the effect on managerial evaluation of contractor performance. We first draw on literature in social and cognitive psychology, particularly research in belief perseverance, as well as agency theory, to offer theoretical lenses for the phenomenon of persistent expectations. We then adopt a mixed-method approach to empirically develop and test a model of persistent expectations (Creswell 1994, Tashakkori and Teddlie 1998). Using persistent expectations as the focal a priori construct, this approach adopts a two-phase design, the first of which involves a qualitative (case study) approach (Eisenhardt 1989a). In this approach, we have the construct in mind and use case study techniques (more generally, qualitative techniques) to develop a model of persistent expectations. This leads to an empirical understanding of the phenomenon and results in the development of the persistent expectations model. This model, together with formal hypotheses on the antecedents and consequences of persistent expectations, is further elaborated upon by drawing on extant theories on agency theory, schema formation, and belief perseverance. Using a field/study/survey approach, we empirically test the model and its hypotheses in the second phase of the approach. After discussing the results of the second study, we conclude with implications for future research.

2 Persistent Expectations in IT Outsourcing

Spin-offs as a form of IT outsourcing arrangement involve the use of transplants and entail a change in the relationship between the two contracting parties. Before outsourcing, the relationship is supervisor-subordinate, in which supervisors have legitimate power arising from their position of formal authority in the organizational hierarchy (Masten 1991). Supervisors can guide and influence subordinates' work- related actions, tasks, and decisions. Moreover, the scope of their authority is fluid and not explicitly circumscribed in the employment contract. This is reflected in the notion that subordinates have a "zone of indifference" in their duties and responsibilities (Masten 1991, Simon 1951) such that they are amenable to carrying out their duties according to supervisors' instructions, to achieve certain organizational or departmental goals.

After a spin-off, subordinates may find themselves contracted to their former organization by the new spin-off. Several changes result from this type of outsourcing conversion. First, from a principal-agent perspective, the former subordinates are no longer direct agents of the former organization but are, instead, agents of a new principal, namely the new vendor organization. In turn, the new vendor organization contracts its services to the former organization (now

the client organization) and, hence, operates as an agent of the client organization. Consequently, the former subordinates now work as external contractors to the client organization and are only indirectly the agents of the client organization and client-managers. At the same time, client-managers are no longer a direct principal of their former subordinates (now external contractors), but instead occupy a principal position to the external contractors only indirectly via the relationship between the client and vendor organizations.

Agency theory (e.g., Eisenhardt 1985, 1989b) holds that the control mechanism under a client-contractor relationship should also change from one that is predominantly behavior based to one that is predominantly outcome based.[2] In the former relationship, supervisors monitor the day-to-day activities of their subordinates and rely primarily on behavior-based controls, given the formal authority prescribed under the employment contract and the relative ease of measuring subordinate behavior. However, when the relationship changes to one between client and contractor, the two parties now work for two different organizations, thereby introducing the potential for goal conflict (Eisenhardt 1989b). Consequently, agency theory stipulates that the contract and the ensuing control mechanism should change to one that is predominantly outcome-based instead in order to be efficient. Second, in IT outsourcing, the contract between the client organization and the vendor organization plays a more important role (Lacity and Hirschheim 1993, Lacity and Willcocks 1995), and the terms are typically more specific, explicit, and circumscribed than in an employment contract between an organization and employees. This, in turn, implies that exchanges between the client-managers and the contractors are carried out via a more formal transaction, such that contractors are not bound to perform duties that are not specified in the outsourcing contract.

Despite the overnight change in the legal relationship from supervisor and subordinate to client-manager and contractor, it is likely that ex-supervisors (now client-managers) will continue to perceive contractors as direct subordinates. Therefore, they will persist in imposing on their former employees (now contractors) a set of expectations that were internalized in their prior employment relationship, expectations which include mostly the use of micromanagement and behavioral controls rather than predominantly outcome-based controls as prescribed by agency theory. We posit that client-managers will expect former subordinates to perform their duties and contribute much as they did in the past, even though these duties and responsibilities may not be included in the new outsourcing contractual arrangement.

We advance the theoretical construct “persistent expectations” to describe and explain this phenomenon. This term is adopted from the “belief perseverance”

---

[2] We are especially grateful to our anonymous reviewer for highlighting the pertinence of control mechanisms as described in agency theory.

phenomenon described in the social cognition literature (e.g., Anderson 1995, Lord et al. 1979). Within this literature, belief perseverance theory is particularly germane and tightly linked to the IT issue of how well managers can change their expectations of subordinates who, overnight, become contractors. Belief perseverance describes the tendency for prior beliefs and expectations to persevere, even in the face of new data or when the data that generated those beliefs and expectations are no longer valid (Anderson and Kellam 1992). Research has documented that people tend to cling to beliefs and expectations, particularly if they are well developed or if the people had formulated explanations or naive theories to account for these perceptions (Anderson et al. 1980, Ross et al. 1975). Also, prior beliefs can affect assimilation of new data, such that people tend to interpret new data as being more congruent with prior beliefs than they actually are (Lewicki et al. 1989).

Research in social cognition offers some explanation for the occurrence of persistent expectations. It has been documented that people are generally unwilling or slow to change established mental schemas because, as cognitive misers, we prefer to engage in automatic information processing and fit experiences into established schemas, rather than change our schemas to reflect changing circumstances (Fiske and Taylor 1991). In fact, prior research has demonstrated that the need to retain established schemas is so strong that people still will not amend their schemas even when they are specifically informed that their prior schemas are inaccurate (Ross et al. 1975).

Applied to the IT outsourcing context, these socio- psychological findings lend weight to the notion that client-managers do not change their old schemas and expectations regarding former subordinates, even though the managers may recognize that these ex- subordinates are no longer officially under their jurisdiction but are under the supervision of another organization. Consequently, client-managers may continue to impose on contractors demands and responsibilities that may not have been contracted for in the IT outsourcing arrangement. To develop a framework for the occurrence of persistent expectations and to explore this phenomenon in greater detail, we adopted a mixed-method approach, starting with an exploratory, qualitative case study to develop the theoretical model.

3 Study 1: Development of Theoretical Model

Since neither belief perseverance nor persistent expectations has been examined in the context of a change in employment relationship, a qualitative case study approach was selected to provide critical information about the phenomenon. Following Eisenhardt (1989a), the purpose of the first qualitative phase was to obtain a richer description and understanding not only about the nature of the

phenomenon, but also about factors affecting, and effects arising from, persistent expectations. We used focus groups to elicit the nature of persistent expectations, the organizational context in which it occurs, and the consequences of persistent expectations (Spradley 1979).

3.1 Study 1: Method

3.1.1 Participants and Setting

We conducted focus group sessions with employees in a large public-sector organization offering IT services to 20 government bodies. The services included the development of information systems, promotion of IT services in the government bodies, and propagation of IT usage to the general public. The department had spun-off its systems building and maintenance services eight months before to increase organizational efficiency and streamline operations. Before the spin-off, the IT department employed 1,501 personnel providing a full range of IT services. Approximately 67% (1,013) of the employees were development and maintenance personnel. They built and maintained applications software and managed and operated the data centers of the organization. The remaining 488 employees were support staff (e.g., administrative, financial, and human resource personnel) and IT planners and solutions providers who created liaisons with end users in the subsidiaries and managed in-house systems development projects. In effect, the IT planners and solutions- providers formed the upper and managerial levels of the IT department, with IT developers and maintainers occupying the lower, technical levels.

In the outsourcing changeover, all the IT developers and maintainers were formally separated from the IT department and transplanted to a new spin-off organization. They became employees of the new organization but continued to offer technical services to their former employers (henceforth called the “client” organization) as contractors. The exchange became a client-vendor arrangement governed by a formal service-level agreement (SLA). The IT planners and solutions providers remained with the client organization and continued to provide IT solutions to various government bodies. In addition, they became client-managers responsible for managing the outsourcing contracts with the same IT professionals who were now external contractors to the client organization, rather than its subordinates.

3.1.2 Procedure

Three focus-group sessions involving a random selection of 19 client-managers in the client organization were conducted over a two-week period. Six or seven

client-managers participated in each session, each of which lasted an average of two hours.[3] These 19 participants occupy different positions in the organization, such as project leaders and information services managers, and their tenures range from three to 16 years. Responsibilities include planning and managing the technical infrastructure and architecture, managing projects, vendors, and business partners, and mediating the relationships between multiple users. In each focus-group session, the second author led the discussions. We developed a questioning protocol to guide the participants in describing the repercussions of the outsourcing, specifically pertaining to their relationships with transplants, i.e., former subordinates who were now contractors. The questions required the participants to describe:

(1) the nature of their jobs before and after outsourcing;

(2) the changes experienced by them in terms of roles, responsibilities, interactions, and relationships with the contractors; and

(3) the changing expectations and obligations of the contractors.

One other major issue that was deliberated was the phenomenon of persistent expectations. Participants discussed the implications and repercussions of having the development IT professionals working for them under the auspices of the new vendor organization instead of as subordinates.

Two of the authors and two research assistants independently took notes of the discussions, which were compiled and transcribed for processing and further analysis in NUD•IST, a qualitative data analysis program. To reveal the major themes, we adopted the approach advocated by (Colaizzi 1978), whereby transcribed notes were independently read and coded and broad themes were developed with the aid of NUD•IST. In addition to the theme of persistent expectations, we also examined transcribed notes for themes that were either antecedents (i.e., themes that promoted or dampened the concept of persistent expectations) or consequences (i.e., themes that resulted from persistent expectations). We then discussed, reviewed, and arrived at a set of six major themes. 2 The ideal size for effective focus-group discussion ranges from 7 to 11 (Krueger 1994). To establish an independent assessment of these themes, two "blind" coders (Ph.D. students in MIS and management) read and coded transcripts using the six themes. They conducted initial coding of the first transcript to establish interrater reliability, the calculated Cohen's Kappa for which was 0.865. The raters then discussed the discrepancies and developed explicit coding rules to reconcile the discrepancies. Subsequently, the coders independently coded the rest of the transcripts, with a resulting Cohen's Kappa of

[3] The ideal size for effective focus-group disussions ranges from 7 to 11 (Krueger 1994).

0.92. Given this level of agreement, the coding approach was deemed reliable, satisfying Landis and Koch's (1977) threshold of 0.70 for robustness and validity.

3.2 Study 1: Results and Theoretical Model

Six major themes emerged from the focus group discussions:

(1) persistent expectations, i.e., the client-managers' continued expectations of the contractors to respond as if they were still subordinates;

(2) client-managers' experiences of role overload resulting from IT outsourcing;

(3) their strength of ties with former subordinates;

(4) their level of trust in the contractors;

(5) their outsourcing experiences with other thirdparty vendors and a comparison of these with those relating to the new contractors; and

(6) client-managers' assessment of contractor performance.

Themes (2) to (5) relate to the antecedents of persistent expectations, and Theme (6) to the consequences of persistent expectations. The following section presents sample focus-group responses that illustrate these six themes. Building upon the qualitative study findings, we incorporate extant research in agency theory and social cognition to develop a research model of persistent expectations. Last, we formulate hypotheses about the antecedents and consequences of persistent expectations.

3.2.1 Persistence of Expectations

In terms of clientmanagers' working relationship with contractors, client-managers found it both difficult and awkward to manage former subordinates as external contractors. Many continued to relate to their former subordinates as if they were still subordinates and continued to expect the same level and quality of support and service. However, managing contractors requires a different mindset and skill set from that required for managing subordinates.

In general, managers can compel subordinates to perform a broader range of tasks than what they can demand of contractors. From the perspective of agency theory, this translates to the use of predominantly behavior-based controls by the managers. After outsourcing, however, the client-managers' formal authority over the contractors was limited only to tasks that were explicitly stated in the SLA between the client and vendor organizations. Consequently, client-managers found that former subordinates had become unwilling to simply "take orders" from them. Instead, these contractors adhered closely to the terms and conditions spelled out in the outsourcing contract. In contrast, the client-managers expected the

contractors to provide the same service level as in the past. One manager explained:

> The problem with the contractors is mainly the relationship. For other vendors, the expectations are already set in the contract, and we know the limit of their responsibilities. But for these contractors, we assume that they will continue with their prior responsibilities as subordinates, so our present behavior is based on past behavior.…There's a lot of assumptions between both sides, and we need to manage the relationship. It's like getting a divorce but still staying in the same house.

Another manager also noted the difficulty in trying to switch their treatment and expectations of the transplants from subordinates to contractors.

> In the past, they [the contractors] will do anything under the sun, like moving computers from one site to another, or writing Chinese and Tamil software and other small tasks. Now, if it's not specified under the SLA, they won't do it.

Not surprisingly, the discrepancy between client-managers' expectations and contractors' actual service levels does not please the client-managers. One manager described his situation as follows:

> Before, we [both client-managers and contractors] worked as a team towards a common goal. Now, they won't go beyond their duties or responsibilities, but only up to specs. . . . There's a lot of emotions that go with the change of relationship from subordinate to contractor. . . . The emotional aspects don't pertain to newcomers because they don't have the prior relationship with the contractors as subordinates.

3.2.2 Role Overload (Antecedent to Persistent Expectations)

In terms of work concerns resulting from IT outsourcing, client-managers reported having to perform additional duties that were previously not part of their job requirements and, subsequently, feeling overwhelmed in their duties and responsibilities. One manager noted:

> I'm managing more things now. In the past, I handled one specific project and it was very specific in the skills that are required. But with outsourcing, my job scope has expanded to contract management, to vendor relationships, to writing proposals, and all other kinds of skills that are needed. . . . But I've little time to develop technical skills, and it's difficult to read and get enough depth.

Other client-managers agreed. Many described an expansion in job scope and duties, particularly with regard to administrative matters. A manager described her situation:

> I had to do administrative work for the past four to five months, and had to do coordination and liaison work. I should join the administration department since I'm largely doing administrative work 90% of the time, like verifying the number of tables and chairs!

While client-managers had to undertake additional roles and responsibilities after outsourcing, they were stripped of subordinates who previously supported them in completing work assignments. This resulted in a lack of resources needed to fulfill job responsibilities. One manager summarized the situation:

> We have to pay the contractor a fee to perform the R&D work that was previously absorbed by our subordinates. Now I have to do the exploration myself, whereas in the past the subordinates did it. . . . In the past, I could delegate administrative work to my subordinates, but not any more. We need clerical officers, administrative officers, or executive officers to help us out.

Overall, these findings indicate that as a result of the massive downsizing requisite in IT outsourcing, job roles and responsibilities of survivors expanded significantly to the extent that they experienced role overload. In turn, this role overload may have amplified client-managers' persistent expectations, such that, to cope with the overload, they continued to perceive the contractors as subordinates and expected them to perform duties that fell within a subordinate's role, even though they were no longer in such a position. The relationship between role overload and persistent expectations can be explained by examining the cognitive and motivational biases of the client-managers. In terms of cognitive constraints, increases in role overload result in survivors having limited time and cognitive resources to assimilate and interpret new information. It has been proposed that, when such constraints exist, people make judgments and evaluations based on salient information or available schemas currently in their possession (Anderson and Lindsay 1998). We predict a similar reaction in the IT outsourcing context. Client-managers who experience role overload will be preoccupied with trying to deal with the urgent, day-to-day issues resulting from outsourcing. Consequently, they will not have sufficient time and cognitive resources remaining to gather and analyze new data to develop a new set of expectations for the contractors.

Also, it is well documented that, in times of cognitive stress, people tend to experience threat rigidity and rely on automatic information processing (Louis and Sutton 1991, Staw et al. 1981). This seems to occur independent of the constraints on time and cognitive resources mentioned before. Specifically, in situations in which individuals are under external threat, as when their organization outsources, they feel uncertain about their future in the organization and restrict their search for additional information. They rely on "automatic information processing" instead, evoking past schemas and familiar scripts when relating to others and making decisions and judgments. This tendency is exacerbated by the increase in

cognitive and time constraints to the extent that even when new circumstances warrant active information processing, individuals still rely more on past schemas and automatic information processing (Gollwitzer and Kinney 1989, Koller and Wicklund 1988, Kruglanski 1989). This implies, in the current context, that managers will continue to use old schemas for managing subordinates, which includes the use of mainly micromanagement and behavioral controls, rather than relying primarily on outcome-based controls, which are in fact more appropriate under the new outsourcing relationship.

Other than the cognitive effects described above, motivational forces may also contribute to the persistence of expectations. Anderson and Lindsay (1998) suggests that "motives or needs of the perceiver can influence what information is brought to bear" (p. 22). In the outsourcing context, client-managers with role overload are already overwhelmed with having to cope with the additional duties and responsibilities resulting from outsourcing. This works against their decreasing their expectations of help from others. Hence, client-managers do not have the motivation or reason to expect that contractors will provide fewer services than they did as subordinates. In fact, for client-managers to cope with the increase in workload, they need contractors to offer even more assistance than they did previously.

This suggests that client-managers continue to evoke old schemas of the transplants as subordinates, and expect contractors to perform certain duties and tasks for which they may no longer be responsible under the new outsourcing agreement. Therefore, we hypothesize that:

Hypothesis 1: *Role overload is positively related to persistence of expectations.*

3.2.3 Strength of Ties with Contractors (Antecedent to Persistent Expectations)

Comments by client-managers in the focus groups suggest that the presence of previous ties with the contractors likewise contributes to the persistence of expectations. Client- managers indicated that close ties with former subordinates posed obstacles to building an external client-vendor relationship with the contractors. Apparently, when the ties were familiar and both parties frequently interacted, client-managers persisted in thinking of transplants as subordinates. This situation is succinctly stated:

> I'm too familiar with [the contractors], since we used to work together here. And because of this, it's a tense relationship, since they're not someone from outside. . . . We used to be very close and lunch together in the past, but now we don't do that anymore. And because of the past relationship with them, it's difficult to draw the line. . . . It's difficult to manage the change in role from colleagues to contractors.

It appears that having had strong ties with the contractors not only contributes to persistence of expectations, but also influences client-manager perceptions of the contractors' current service level. One manager said,

> We were one big happy family then [before outsourcing]. Everybody knew everybody; we were a close department. Most of the contractors used to be part of our officers, but the relationship is different now. We have changed from friends to contractors, and their response time is not there anymore. . . They don't provide the previous level of service, and there is a drop in the service level. We are getting much less service than we used to. . . .

Contrasting the comments of client-managers who had past ties with the contractors with those who did not, it is noteworthy that the latter expressed no concerns about treating the transplants as third-party contractors. One such manager described his interactions with the contractors:

> I joined [the client organization] after the outsourcing, so I didn't know the contractors previously, and I can interact with them at an objective level, because they are new to me.

These quotations suggest that client-managers' ties with former subordinates diminished their ability to manage the contractors as external vendors. In fact, the closer client-managers were to the transplants, the more difficulty they had in changing perceptions and expectations from subordinate to contractor. This phenomenon has been documented since the 1960s by researchers such as Thibaut and Ross (1969), who found that the more experience people had with certain expectations, the more resistant they were to changing those expectations. Social cognition research has shown that mere thought, or the act of contemplating or recalling a schema, will fortify expectations or schemas and make schematic changes difficult (e.g., Chaiken and Yates 1985, Millar and Tesser 1986, Myers and Lamm 1976). Schema resilience is further reinforced through frequent interactions with the other party, such that the perceiver would be even less inclined to change even though evidence warrants that a schema adjustment is in order (Mayer and Bower 1986). In fact, the more that schemas are used, the more automatic will be the schema recall, to the extent that the mere presence of those stimuli in the environment will trigger schemas into use (Bargh and Pratto 1986). In the current context, the client-managers' "person-in-organization" schemas (DeNisi et al. 1984, Harris 1994) for transplants before outsourcing were shaped for subordinates. After outsourcing, former subordinates played the role of external contractor instead. However, we theorize that client-managers could not easily alter their previous subordinate "person-in-organization" schemas, especially when the schemas were reinforced through the strength of ties and continuing frequent interactions between the parties. Thus, the presence of strong ties impedes adjustment of "person-in-organization" schemas to new circumstances and increases the likelihood of individuals maintaining schema consistency. Accordingly, client-managers' expectations of transplants as

subordinates should be imposed in the new outsourcing arrangement. Hence, we hypothesize that:

Hypothesis 2: *Strength of ties between client- managers and IT contractors is positively related to persistence of expectations.*

3.2.4 Trust in Contractors (Antecedent to Persistent Expectations)

In addition to experiencing varying degrees of closeness with the contractors, managers also reported having different levels of trust. Some managers had a high level of confidence in the competence and quality of work of the contractors, and this appeared to positively influence client-managers' perceptions and attitudes. For example, a manager noted:

> I think the staff at [the contractor organization] are quite committed and cooperative, and I really appreciate them. Some managers, however, revealed that they did not have confidence in the contractors' ability. This adversely affected their degree of reliance on the contractors. In fact, the lack of trust in the contractors led a manager to state that: I can't delegate the work to [the contractor organization], unless I know that [the contractor organization] can deliver without being monitored. But their track record so far hasn't given me the confidence to let them run on their own, so I'll lose control if work is delegated to them.

Generally, managers who did not trust in the contractors' competence relied less on them and also increased their monitoring and supervision, as indicated by the following observation:

> I know that the project manager at [the contractor organization] is not a thorough worker from my past experience working with this person in [the client organization], so I have to review his work, roles, and responsibilities thoroughly. . . . There's no value added by [the contractor organization], and I don't see the service level growing.

From managers' comments, an often-mentioned consequence of lack of trust and confidence in the contractors is unwillingness to delegate responsibilities to vendors, occasionally going as far as to supervise the minute, day-to-day, behavioral aspects of the contractors' work. Yet, other managers trusted and relied upon the contractors' abilities and intentions, to the extent of expecting them to deliver more than other third-party vendors.

Such behavior is consistent with existing research on trust. Generally understood to be a set of expectations or beliefs that influence behavior and behavioral intentions (e.g., Deutsch 1958, Morgan and Hunt 1994), trust has been studied in multiple disciplines and defined in multiple ways. However, underlying the various definitions of trust are two common themes that constitute its basic concept: a willingness to be vulnerable and the existence of positive expectations

of others (Rousseau et al. 1998). Specifically, from their review of the extant literature these scholars concluded that a widely held definition of trust is "a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another" (p. 395). Prior research has investigated the nature of these positive expectations and, based upon the early works of scholars such as Blau (1964) and Giffin (1967), it is generally accepted that trust consists of three broad sets of expectations or beliefs about the other party, namely the latter's ability, integrity, and intentions (benevolence).

Extending this conceptualization of trust to the context of this study provides a theoretical justification for the pattern of behavior we observed in the focus groups. Specifically, managers who trusted subordinates' abilities and intentions under the old relationship continued to trust in the new relationship. This was so powerful that they were willing to rely on the contractors and persisted in expecting them to act for the good of the client organization and perform their duties as in the past. In fact, this dependence on the contractors is likely to be even more acute subsequent to outsourcing, in which client-managers experience an increase in workload and a concomitant decrease in lower-level support. One method by which these client-managers could cope with outsourcing was to delegate more work to trusted contractors, who they believed were willing and able to contribute to the client organization. Consequently, client-managers' trust (i.e., positive expectations) in selected contractors should lead them to rely on and expect more from these contractors (Strickland 1958). Specifically, we hypothesize that:

Hypothesis 3: *Level of trust in IT contractors is positively related to persistence of expectations.*

3.2.5 Outsourcing Experience with Third-Party Vendors (Antecedent to Persistent Expectations)

The fifth theme that emerged from the focus-group discussions concerns client-managers' outsourcing experiences with other third-party vendors and how these experiences affected the relationship with transplants. It appears that client-managers who had prior experiences with third-party vendors were better able to treat transplants as external contractors. One such manager said,

> I was from [another department] previously, which had a lot of outsourcing projects, so now, there is not much change in dealing with the contractors. Moreover, I was previously in a private consulting firm, and I am used to dealing with vendors and handling new technology.

Another manager concurred, indicating that prior experiences with other third-party vendors allowed client-managers to rely on those experiences to develop new, more realistic expectations of the transplants:

> My department has lots of projects outsourced to other vendors, and is not so dependent on the current contractors. . . . My expectations on the contractors are still the same as those on third-party vendors. I don't see myself demanding more from them.

Our qualitative findings show that client-managers who had prior experiences working with third-party vendors were more likely to deal with ex-subordinates as external contractors and experience less persistence of expectations compared to client-managers who did not have the same experiences. Drawing on similar social cognitive arguments presented earlier, client-managers experienced with third-party vendors should have developed a separate set of event schemas for interacting with and managing vendors. Consequently, when the formal relationship with the transplants changes from one of supervisor-subordinate to the SLA-oriented relationship of client-manager and contractor, these client-managers could access prior event schemas relating to third-party vendors and use these to subsequently relate to the contractors (Bargh and Pratto 1986). In fact, the ease of accessibility of such schemas forms the basis for the development of a new set of expectations with the contractors, thereby reducing the degree of persistent expectations. Hence, we hypothesize that:

Hypothesis 4: *Prior outsourcing experience with third-party vendors is negatively related to persistence of expectations.*

3.2.6 Client-Managers' Perceptions of Contractor Performance (Consequence of Persistent Expectations)

In the final analysis, client-managers' experiences and persistent expectations subsequent to outsourcing affected their judgments of contractor performance. Because client-managers continued to expect contractors to perform as subordinates, contractors were evaluated against this higher standard and, consequently, were more severely judged. One manager noted:

> In the past, the staff will do things without argument, but now, the contractors have other clients and will follow only the SLA, and their manager is very calculative. I still expect the same level of service as was given in the past, but now the same thing involves more costs. . . . And even though they charge like a third-party vendor, they don't act like one. They're not even working towards meeting the SLA, like following the specified procedures and documentation.

However, other client-managers expressed a different viewpoint, noting that contractors were, indeed, performing up to standards:

> We [client-managers and contractors] work very closely, and the relationship between myself and their manager is good, because we understand the priorities.

Due to the change in the formal relationship between the two parties, transplants should be evaluated as external contractors rather than as subordinates. However, the qualitative study indicates that some client-managers continued to regard transplants as subordinates and expected them to perform as such. In general, client-managerial expectations of subordinates are higher than those of external vendors, because the exchange between supervisors and subordinates tends to be more relational, open-ended, and broad, while that between client-managers and contractors tends to be more transactional, specific, and narrow (Robinson et al. 1994, Rousseau and Parks 1993). Subordinates are expected to display greater extra-role behavior and show higher commitment to work. Also, they tend to have a larger "zone of indifference" in their duties and responsibilities as good employees or subordinates (Masten 1991, Simon 1951), because the zone of indifference in an employment relationship is greater than that in an external outsourcing contract.

In the IT outsourcing context, some client-managers continued to impose higher prior expectations on the contractors. Consequently, when they evaluated contractor performance in the outsourcing arrangement, they were likely basing their evaluation on a higher set of expectations and standards, to which contractors were less likely to have performed. Such negative rating would occur even if contractors had actually provided the exact types and levels of service that were laid out in the outsourcing contract, which rightfully should be used as the true (but lower) basis for evaluation.

Resulting biases in evaluations are exacerbated by client-managers' negative personal responses from unmet expectations. Hogan (1987) confirms this in the context of supervisors' evaluation of subordinates. In her study, she found that when supervisors' expectations of subordinate performance were unmet, the former rated the latter more negatively. Such biased evaluation could be explained by hedonic relevance theory (Carlsmith and Aronson 1963), which purports that people dislike being wrong. Consequently, in the current context, when client-manager expectations of contractors are not being fulfilled, we predict, consistent with Hogan (1987), that they will "punish" contractors for disconfirming expectations and lower their performance ratings. Hence, we hypothesize that:

Hypothesis 5: *Persistence of expectations is negatively related to the evaluation of contractor performance.*

Qualitative findings and the derived theoretical model are pictured in Figure 1. In the next section, we describe the second phase of the research, which consists of a quantitative, organization-wide survey designed to validate the proposed model.

4 Study 2: Validation of Theoretical Model

Following qualitative analysis in the first study of client-managers' reactions to outsourcing and their relations with former subordinates, Study 2 involved a quantitative field study that examined persistent expectations and its empirical and statistical relationships to potential antecedents and consequences. Theoretical linkages as well as research hypotheses are shown in Figure 1. We theorize that four major factors, namely, role overload, strength of ties with contractors, trust in the contractors, and prior outsourcing experience, significantly affect the extent of persistent expectations of client-managers. As for the potential consequence of persistent expectations, we postulate that client-managerial assessment of contractor performance is affected by the degree to which they experience persistent expectations.

4.1 Study 2: Method

4.1.1 Participants, Setting, and Procedures

A questionnaire was administered to survivors in the IT department about 10 months after the outsourcing conversion. At that time, there were 289 IT survivors in the department.[4]

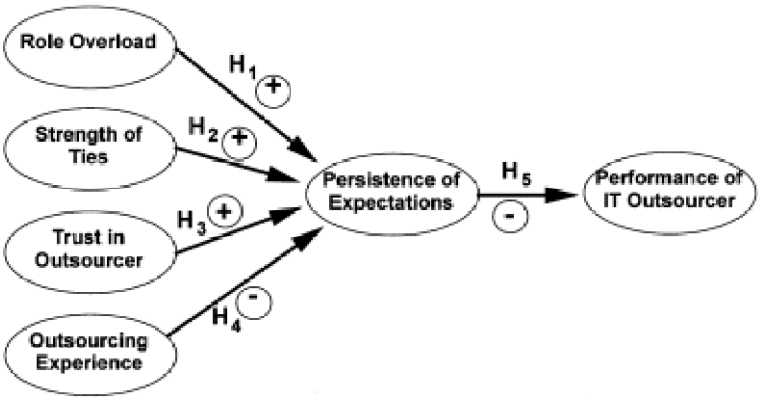


Figure 1: Theoretical and Research Model

[4] Out of 488 survivors, 289 were IT planners and solution providers. The remaining 199 were in the support function, made up of corporate communications, administration, human resource, and finance.

Nineteen participants in the focus-group discussions were excluded from the second study to eliminate priming effects and hypothesis-guessing (Cook and Campbell 1979). Another 104 employees did not interact with the contractors subsequent to outsourcing because they were responsible for the function of promoting IT usage to the users and interacting with user departments rather than the contractors. This resulted in 166 employees being eligible for the study. Participation was voluntary. We administered the questionnaire to the 166 survivors at the different subsidiaries during half-hour meetings in their workplace during work hours. Questionnaires were collected at that time, and respondent confidentiality was assured. For respondents who were not in their offices at the time of data collection, we either collected the completed questionnaires in person, or they mailed them directly to us. One hundred and forty-seven completed questionnaires were received, a response rate of 89%. On average, respondents were 30.9 years old (s.d. 5.0 years) and had 7.3 years of working experience (s.d. 4.5 years), of which 5.4 years were with the client organization (s.d. 4.2 years). Sixty-three of them were male (43%) and 84 were female (57%), with 15% heading the IT divisions of each subsidiary and the remaining 85% working under them as project leaders.

4.1.2 Measures and Pretest

Whenever possible, questionnaire items were adapted from validated measures used in prior research. Except for the respondent's prior experience with third-party vendors, all variables measured the perceptions of client-managers. The instrument was pretested on six survivors, two IS managers, and four project managers/leaders, to ensure the clarity and content validity of the items and that the theory-based items tapped issues of concerns for the client-managers. Based on the pretest, minor modifications were made.

Persistent Expectations of Client-Managers. We measured client-manager expectations of the general population of the newly christened contractors. This scale is perceptual in nature and taps into different aspects of work values that managers typically expect from employees. We selected only those items that were relevant to the nature of the work of IS professionals and included an additional item to measure contractor contributions to technological issues. The resulting seven items are presented in Appendix A, together with items used for the other five variables. Cronbach's α for this construct was 0.95.

Role Overload. Adapted from Peterson et al. (1995), measures for client-managers' perceptions of role overload consisted of five items, as detailed in Appendix A. Cronbach's α for role overload was 0.86.

Strength of Ties with Contractors. Measures of client-managers' perceptions of the strength of ties with the newly designated contractors were adapted from prior research. These items classified the strength of ties into three dimensions: (1)

intensity of relationship, (2) degree of intimacy, and (3) amount of interaction (Granovetter 1973, Marsden and Campbell 1984). Three items, presented in Appendix A, measured this construct, each corresponding to a dimension of the strength of ties. Cronbach's α was 0.79.

Trust in Contractors. Perceptual measures of client-managers' trust in the contractors as a general population were adapted from (Ganesan 1994). Five statements used to measure this variable demonstrated a Cronbach's α of 0.88. Prior Experience with Other Outsourcing Vendors. Prior experience with other outsourcing vendors was measured using a single-item measure (see Appendix A). We felt that a single measure was adequate for this construct because this assessment was straightforward and factual.

Client-Manager Perceptions of Contractor Performance. Client-managers were closely involved in monitoring and evaluating contractor performance on all activities covered by the SLA. Hence, respondents were asked to indicate their perceptions of the performance of the new contractors as a population in terms of the five criteria detailed in Appendix A. Cronbach's α for contractor performance was 0.90.

4.2 Study 2: Results

4.2.1 Instrument Validity

PLS was selected to analyze both measurement validity and linkages in the theoretical model. The advantage of using PLS is that, first, it estimates a measurement model to ascertain construct validity and reliability of measures. Second, using indicators of latent constructs, it yields estimates of the structural model parameters, which test the strength of hypothesized relationships. Finally, it is not restricted by the distribution requirements and sample size limitations of other structural equation modeling tools (Campbell and Fiske 1959). The approach in the PLS analysis in this part of our study was modeled on exemplars such as that of Staples et al. (1998). Table 1 presents the means, standard deviations, intercorrelations, and Average Variable Extracted (AVE) statistics for the six constructs. To ensure that the instrument had reliable measures and reasonable construct validity (see Campbell and Fiske, 1959, for a conceptual discussion of convergent and discriminant validity), we analyzed, respectively, PLS composite reliability coefficients/Cronbach's alphas and Average Variance Extracted (AVE) statistics. Calculated as $[(\sum\lambda_i^2)/((\sum\lambda_i^2) + (\sum(1-\lambda_i^2)))]$, AVE measures the percent of variance captured by a construct by showing the ratio of the sum of the variance captured by the construct and measurement variance (Gefen et al. 2000) and is reflected in the diagonals in Table 1.

Table 1: Means, Standard Deviations, Intercorrelations, and AVE of Variables[1]

Variable	Mean	S.D.	1	2	3	4	5	6
(1) Role overload	4.58	1.09	0.802					
(2) Strength of ties with contractor	4.78	1.05	0.02	0.84				
(3) Trust in contractor	4.00	1.02	-0.11	0.45**	0.798			
(4) Outsourcing experience	2.67	2.95	0.01	0.05	-0.11	-		
(5) Persistent expectations	4.29	1.40	0.35**	0.16	0.10	-0.14*	0.818	
(6) Perceived contractor performance	3.39	0.85	-0.09	0.24**	0.63**	0.02	0.18*	0.833

* $p < 0.05$, one-tailed test. ** $p < 0.01$, one-tailed test.

[1] Diagonal entries are the average variance extracted (AVE), which is the square root of the variance shared between the contructs and their measures. Off diagonals are the correlations between contructs. The diagonals should be larger than any other corresponding row or column entry in order to support discrimant validity.

Table 2 shows the PLS composite reliability statistics and Cronbach's for the measurement model. Based on commonly accepted standards (Nunnally 1967), these results indicate that the constructs are reliably measured and are adequate for hypothesis testing.

Table 2: Internal Consistency of the Constructs

Construct	Number of Items	PLS Composite Reliability	Cronbach´s α
Role overload	5	0.69	0.86
Strength of ties	3	0.74	0.73
Trust in contractor	5	0.69	0.88
Persistence of Expectations	7	0.71	0.71
Perceived Contractor Performance	5	0.73	0.90

With regard to discriminant and convergent validity, Appendix B shows that the item loadings are all significant at the 0.05 level for each construct. Moreover, Table 1 indicates that all AVE statistics on the diagonal cells are larger than the cross-correlations in the same rows and columns. This provides evidence that measures in the constructs discriminate, i.e., are more closely aligned with themselves than with other constructs (Gefen et al. 2000). The magnitude of the AVEs also indicates that the measures for each construct converge, and, given that they are close to unity, we argue that the instrument demonstrates acceptable convergent validity.

4.2.2 PLS Structural Model Tests

PLS was also used to test the hypotheses. Results are presented in Figure 2 and Appendix B. Findings provide support for Hypothesis 1, relating role overload to persistent expectations ($t = 4.08$, $p < 0.01$). With respect to the other hypotheses, Hypothesis 2, i.e., that a positive relationship exists between strength of ties with

contractor and persistent expectations, was supported at the 0.10 level, but not at the 0.05 level ($t = 1.48$, $p < 0.10$).

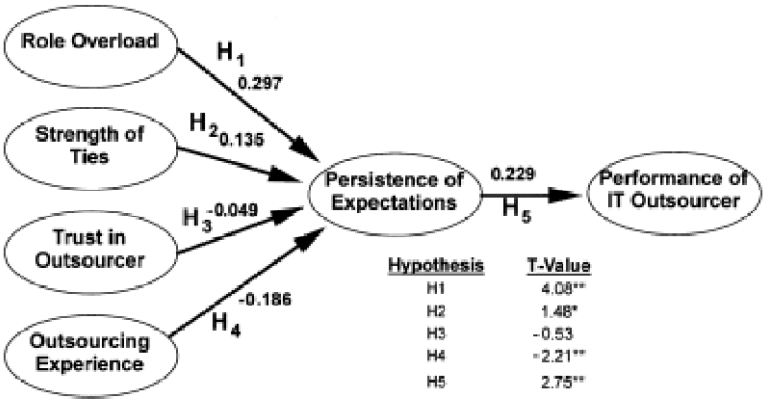


Figure 2: Results of PLS Run

SMC for Persistene = 0.175.

SMC for Performance = 0.03.

** Significance at the 0.05 level.

* Significance at the 0.10 level.

Hypothesis 3 (or trust in the contractor being positively related to persistence of expectations) was not significant ($t = 0.53$, $p < 0.10$). As for Hypothesis 4, we found that, as predicted, prior experience with other outsourcing vendors was negatively associated with persistent expectations ($t = 2.21$, $p < 0.05$). Finally, we hypothesized in Hypothesis 5 that persistent expectations would be negatively related to contractor performance. Contrary to this hypothesis, results indicate a significant, positive relationship between these two variables ($t = 2.75$, $p < 0.05$). Explained variance for persistent expectations was 17%. A much smaller explained variance was associated with contractor performance. There are no community standards for what is an acceptable level of explained variance (Gefen et al. 2000). In the basic research of fields like sociology, indeed, levels under 10% are commonly reported. Nevertheless, we acknowledge that the 17.5% explained variance we found was not high. However, it meets Falk and Miller's criterion (1992) and is close to the range of results found in other IS theory-based empirical studies, especially similar exploratory studies. In the Technology Acceptance Model (TAM) research stream, for example, numerous studies published in top-ranked IS journals explain variance in the 20–30% range (see Igbaria et al. 1995, 1996, and 1997; Gefen and Straub 1997 for a sample of such studies).

4.3 Study 2: Discussion

We examined the concept of persistent expectations and its antecedents and consequences. Our objective was to understand whether expectations and beliefs formed under a previous relationship would persevere despite a change in the formal relationship. We also investigated conditions under which such persistence would exist, and its resulting impacts.

Findings suggest that, although organizations may radically alter the working relationships between supervisors and subordinates, supervisory expectations of subordinates may persist despite the change in relationship. Such expectations are mental schemas— cognitive structures shaped by prior interactions, relationship building, and ingrained routines—and do not change as readily as formal contracts. In the case of an outsourcing exercise in which employees are "sold over" to the vendor and then "contracted back" to the same organization, managerial expectations that were based on the previous supervisor-subordinate relationship, and operated predominantly on behavioral rather than outcome controls, remain in effect even in the new manager-contractor relationship.

The findings also suggest several antecedents that could increase the strength of persistent expectations. First, role overload contributes to the persistence of expectations: Client-managers experienced greater persistent expectations when they were stressed from role overload and, in order to cope with this overload, they continued to rely on their previous schemas in dealing with the new contractors. Second is the amount of prior outsourcing experience of client-managers. Specifically, client-managers with prior outsourcing experience had a lower degree of persistent expectations, which could be attributed to the fact that they already possessed the relevant schemas for relating to third-party vendors and could more easily access these schemas when interacting with their former subordinates. Third, strength of ties to subordinates also played a part in contributing to persistent expectations. Client- managers with strong ties to former subordinates experienced increased persistent expectations, potentially because the strong ties reinforced person-in-organization schemas relating to subordinates. While this relationship was marginally significant at the 0.10 level, the influence is in the predicted direction and therefore should be further examined.

Contrary to our expectations, we did not find that trust in vendors was significantly related to persistent expectations. We speculate that trust did not lead to persistent expectations because although prior theory asserts that trust is akin to having positive expectations of others (Rousseau et al. 1998), such positive expectations may not necessarily translate into higher expectations in the context of this study. Specifically, client-managers may expect trusted contractors to fulfill their contractual obligations better than less-trusted contractors. However, this is not the same as expecting trusted contractors to go beyond the formal contractual requirements and perform duties that are not typically done by contractors but by subordinates. Hence, having positive expectations may not equate to having

persistent expectations, thereby accounting for the lack of relationship between trust and persistence. This potential explanation should be explored in future research.

In terms of the consequences of persistent expectations, the results revealed that persistent expectations were significantly and positively related to perceptions of contractor performance. This positive linkage was unexpected and contrary to the findings of Study 1 as well as to the suggested hypothesis. A methodological explanation for the difference in findings between Studies 1 and 2 is that participants in the focus-group sessions in Study 1 were subject to group polarization, such that initial comments and opinions amplified the inclinations of group members as a whole (e.g., Moscovici and Zavalloni 1969, Myers and Lamm 1976). Possibly, the earlier discussions were dominated by observations that former subordinates were not delivering as much as was expected under the previous relationship and, hence, were not performing up to standard. This could have anchored the attitudes of other group members, so that subsequent comments inclined toward the opinion that the contractors were not living up to previous expectations. However, in Study 2 participants completed the questionnaire individually and were not subject to social influences. Consequently, the questionnaire methodology may have revealed the actual relationship between the two variables, which is positive. This explanation should be studied further.

Even with the low explained variance, that the relationship is positive and significant leads us to believe that the effect of persistent expectations on perceptions of performance is a real phenomenon. Nonetheless, there are many factors that would explain client- managers' perceptions of contractor performance beyond persistent expectations, so it is not surprising that the explained variance is low. But the presence of a relationship that goes beyond chance is worth noting and pursuing in other studies.

Supplementing the previous argument, we offer two potential theoretical explanations for this positive relationship, both drawn from the belief perseverance literature. First, research has firmly demonstrated that perceptions are often influenced by prior expectations; people construct their perceptions to be aligned with their prior expectations (e.g., Lewicki et al. 1989, Slusher and Anderson 1987). In the current context, it is likely that client-managers' prior expectations of subordinates influenced their perception of contractor performance subsequent to outsourcing, so that the contractors' performance levels are perceived to be higher in accord with the managers' higher expectations of these former subordinates. The second explanation lies in research on behavioral confirmation (e.g., Snyder and Haugen 1994, Snyder et al. 1977). Here it was found that people's expectations have an effect on their own behavior which in turn elicits expectation-congruent behavior in others. When applied to the current study, this suggests that client-managers who experienced persistent expectations demanded higher performance from the contractors who, in turn, delivered it.

4.3.1 Post Hoc Analyses of Alternative Explanation of Studied Effects

In this study, we referred to research on social cognition and belief perseverance to explain our observations of persistent expectations after IS outsourcing. However, our observations could also be explained by a lack of contract management skills on the part of the client-managers.[5]

Presumably, managers lacking adequate contract management skills may have ex post-outsourcing problems because they are not as competent in managing the contracting relationship. Specifically, the problems experienced by some client-managers, such as role overload and perceptions of poor contractor performance, may be linked to their lack of contract management skills, rather than their persistent expectations as hypothesized in this paper. Client-managers who lack contract management skills may fail to realize that contractors cannot be effectively managed predominantly via behavioral controls, and instead continue to rely primarily on this type of control mechanism. However, the literature on agency and control theory (Henderson and Lee 1992) proposes that under the new relationship, client-managers should rely predominantly on outcome-based controls, given that a core feature of outsourcing is that client-managers outsource the day-to-day administration and management of contractors to vendor-managers (Ang and Slaughter 2001). Hence, client-managers who lack contract management skills and continue to rely primarily on behavioral controls under the new relationship will reduce the benefits of outsourcing and, concomitantly, face other conundrums such as higher role overload. In other words, the alternative explanation would predict that client-managers with high role overload and difficulties in managing contractors experience these problems because of their lack of contract management skills rather than their persistent expectations.

Although we did not measure the client-managers' contract management skills per se, it is possible to rule out this explanation by using the data at hand to test the relationship between contract management skills and role overload. Assuming that number of years in managing third-party outsourcing vendors (i.e., prior outsourcing experience) serves as a first approximation surrogate for this competency, the alternative explanation would predict a significant negative correlation between the variables of prior outsourcing experience and role overload. However, the data do not support this alternative explanation, as indicated in Table 1 by the 0.01 correlation between these two variables.

In addition, if the alternative explanation were true, we would expect competent managers with prior outsourcing experience to manage contractors better and, consequently, report higher performance levels. To test this, we regressed contractor performance on both outsourcing experience and persistent expectations. If empirical evidence for the alternative explanation exists in this

[5] We thank an anonymous reviewer for offering this alternative perspective.

dataset, outsourcing experience would show a significant positive relationship with contractor performance, whereas persistent expectations on performance would not be significant. Instead, regression reveals a nonsignificant relationship between outsourcing experience and contractor performance. Moreover, persistent expectations had a significantly positive relationship to contractor performance (p 0.05), not a null effect as posited in this alternative line of reasoning. Overall, these post hoc analyses provide empirical evidence that persistent expectations do, indeed, matter, over and above the effect of managerial competence in contract management.

5 Conclusion

This research makes a number of contributions to IT outsourcing research. First, from a theoretical perspective, we introduce a model of persistent expectations in the IT outsourcing context. Specifically, we examine the phenomenon of persistent expectations from the managerial perspective. Spin-offs as a form of outsourcing offer an excellent domain for examining persistent expectations because they present a context in which the formal contract between the supervisor and subordinate changes overnight to a manager-contractor relationship, with both parties to the contract remaining intact.

Second, this work is among the first to study outsourcing and persistent expectations from the point of view of the manager. We believe that examining managerial expectations is as important as studying external contractor expectations, given that outsourcing organizations can more easily influence their own managers' expectations than those of the former subordinates. Former employees are, after all, former employees, no longer under the behavioral control of the client organization. Client-managers, on the other hand, are still employees of the outsourcing organization. Hence, the organization can play an active part in revising their expectations and aiding in the role transition process. For example, literature on attitude change suggests that people's attitudes, including expectations, are changed more effectively when they receive advance notice of the change, when the message promoting attitude change is repeated, when the source of the message has power over the recipients, is credible, and is trusted by them, and when the message comes from multiple sources. In the context of outsourcing, these prescriptions suggest that client-managers' expectations can be effectively changed and managed if the outsourcing organization provides the managers with early notice of the outsourcing arrangement, updates them regularly with details of the new arrangement and how their expectations should in turn be changed, and reiterates these messages frequently. In addition, the organization should disseminate such messages via sources with formal power and authority in the organization, such as the CEO and CIO, and through other

incumbents who occupy vital positions in the informal organizational networks as well, such as the trust and advice networks (Krackhardt and Hanson 1993).

Third, this research adopts a mixed-method, rigorous approach in its empirical examination of the phenomenon, which is unique in this stream of research. Given that the concept of persistent expectations in outsourcing is relatively new and has scarcely been studied, the qualitative study provides a fuller understanding and development of the concept—its antecedents as well as the consequence. The follow-up quantitative questionnaire was useful in empirically testing the derived theory and verifying generalizability of results.

5.1 Limitations and Future Research

Although our study found evidence for the existence of persistent expectations as well as its antecedents and consequence, it is important to note its boundary conditions. First, our results were based on work conducted in the same client organization, thereby opening up the possibility that findings are specific to this organization. In addition, the outsourcing contract with the new vendor organization appears to have been poorly designed and failed to include certain activities that were previously performed by subordinates, thereby inspiring some managers to allege a decrease in service levels provided by the contractors.

These limitations notwithstanding, we feel that it is unlikely that the phenomenon of persistent expectations would arise solely from poor contract design or that the relationships demonstrated here would not hold true in other situations. This is because the concept of persistent expectations is based on evidence in belief perseverance, which supports the notion that people persist in their beliefs, attitudes, and expectations even when presented with evidence that refutes them (Ross et al. 1975). Consequently, one would still expect the occurrence of persistent expectations under a well-designed contract. Future research should compare the persistence of expectations under a well- designed versus a poorly designed contract.

Although the study was conducted in the nonprofit public-sector organization, these IT employees had responsibilities identical to those in a for-profit private organization. They also received wages and benefits comparable to prevailing market rates. This argues that there is no basis for expecting a difference between the public and private sectors. However, we cannot rule out the possibility that our findings may differ with private-sector organizations as well as organizations with well-designed contracts and different outsourcing purposes. Therefore, we encourage others to explore the persistent expectations phenomenon in other conditions, and we welcome further tests of the validity of the research model itself.

Another constraint on the generalizability of the findings is that the data were cross-sectional in nature and were collected 10 months after the outsourcing

exercise. Consequently, we cannot adequately address the issue of causality among the variables. It is also necessary to recognize the possibility that persistent expectations are particularly strong in this study because managers may not have successfully changed their mental schemas in this relatively short period of eight months. We do not claim our results to be definitive or conclusive, but instead we intend to open up a new set of research questions involving individuals' changes in beliefs and expectations subsequent to IT outsourcing. These issues should be addressed in further research, particularly by adopting longitudinal techniques to establish causality effects in the theoretical model.

Although this work focused on client-managerial persistent expectations, we acknowledge that the outsourcing relationship is dyadic and that persistent expectations may, in fact, be experienced by the contractors as well, who could also impose their expectations from the prior employment relationship on the client-managers. If both parties in the relationship experience persistent expectations, it stands to reason that their speed of adaptation will be more aligned with each other and contractors, in particular, will continue to provide services performed in the past. Hence, the problems reported by the client-managers in this study may be alleviated to the extent that both parties continue to perform as they did previously. Notwithstanding, we believe that the persistence of expectations is plausibly experienced more strongly by the client-managers than by the contractors, given that the latter receives stronger and more visible structural and organizational cues on the change in the principal-agent relationship, such as receiving new business cards and pay slips with the vendor organization's name, and having to report to a new supervisor at the vendor organization. On the other hand, the client- managers may receive less, if any, structural or organizational signals indicating the change in the principal-agent relationship, because they still work for the same organization and interact with the same people (even though these people now work in a different capacity as third-party contractors). Hence, client-managers are more likely to experience persistent expectations than contractors, thereby warranting our examination of the phenomenon on the part of client-managers. Nonetheless, this does not invalidate the possibility that persistent expectations could occur on the part of the contractors as well, and we leave it to future research to examine the impact of outsourcing and persistent expectations on contractors.

The alternative explanation that contract management skills affect persistence of expectations should also be investigated. While our post hoc analyses refute this alternative explanation, these were based on outsourcing experience as a surrogate measure of contract management skills. Future research should include specific measures to capture the variable precisely to test this alternative explanation. More generally, it is clear that both parties in a spin-off type of outsourcing relationship must learn to negotiate and make sense of the change in both their formal contracts and their expectations. Managers and workers who experience radical changes in their careers inevitably carry baggage of psychological expectations

from prior employment or short-term engagements, and it is worthwhile to investigate the implications of such persistent expectations on their attitudes, behaviors, and performance.

Acknowledgments: The authors wish to thank the Associate Editor, the anonymous reviewers, Denise Rousseau, and Linn Van Dyne for their valuable suggestions and comments on earlier drafts of this paper.

References

Anderson, Craig A. 1995. Implicit personality theories and empirical data: Biased assimilation, belief perseverance and change, and covariation detection sensitivity. Soc. Cognition 13(1) 25–48.

Anderson, Craig A., Kathryn L. Kellam. 1992. Belief perseverance, biased assimilation, and covariation detection: The effects of hypothetical social theories and new data. Personality and Soc. Psych. Bull. 18(5) 555–565.

Anderson, Craig A., James J. Lindsay. 1998. The development, perseverance, and change of naıve theories. Soc. Cognition 16(1) 8–30.

Anderson, Craig A., Mark R. Lepper, Lee Ross. 1980. Perseverance of social theories: The role of explanation in the persistence of discredited information. J. Personality and Soc. Psych. 39(6) 1037–1049.

Ang, Soon, Cynthia M. Beath. 1993. Hierarchical elements in software contracts. J. Organ. Comput. 3(3) 329–362.

Ang, Soon, Assafa Endeshaw. 1997. "Legal case analysis in IS research: Failures in Employing and outsourcing for IT professionals," in Information Systems and Qualitative Research, London, U.K.: Chapman & Hall. pp. 497–523.

Ang, Soon, Larry L. Cummings. 1997. Strategic responses to institutional influence on information systems outsourcing. Organ. Sci. 8(3) 235–256.

Ang, Soon, Christine Koh. 2000. Psychological contracting in IT contracts. Effective Management of IT Disputes. Butterworths, Singapore, 39–50.

Ang, Soon, Sandra Slaughter. 2001. Work outcomes and job design for contract versus permanent information systems professionals on software development teams. MIS Quart. 25(3) 321 350.

Ang, Soon, Sandra Slaughter. 2002. A taxonomy of employment insourcing and outsourcing strategies in information systems. R. Hirschheim, J. Dibbern, eds. Information Systems Outsourcing in the New Economy: Enduring Themes, Emerging Patterns and New Directions. Forthcoming, Springer-Verlag.

Ang, Soon, Detmar W. Straub. 1998. Production and transaction economics in information systems outsourcing: A study of the U.S. banking industry. MIS Quart. 22(4) 535–552.

Ang, Soon, See-Kiat Toh. 1998. Failure in software outsourcing: A case analysis. Leslie Wilcocks, Mary Lacity, eds. Strategic Sourcing of Information Systems. John Wiley, New York, 351 368. Bargh, John A. Felicia Pratto. 1986. Individual construct accessibility and perceptual selection. J. Experiment. Soc. Psych. 22(4) 293– 311.

Blau, Peter M. 1964. Exchange and Power in Social Life. Wiley, New York.

Campbell, Donald T. Donald W. Fiske 1959. Convergentand discriminant validation by the multitrait-multimethod matrix. Psych. Bull. 56(2) 81–105.

Carlsmith, J. Merrill, Elliot Aronson. 1963. Some hedonic consequences of the confirmation and disconfirmation of expectancies. J. Abnormal and Soc. Psych. 66(2) 677–688.

Chaiken, Shelly, Suzanne Yates. 1985. Affective-cognitive consistency and thought-induced attitude polarization. J. Personality and Soc. Psych. 49(6) 1470–1481.

Colaizzi, Paul F. 1978. Psychological research as the phenomenologistviews it. Ronald S. Valle, Mark King, eds. Existential Phenomenological Alternatives for Psychology. Oxford University Press, New York, 48–71.

Cook, T. D., D. T. Campbell. 1979. Quasi-Experimentation: Design and Analysis Issues for Field Settings. Houghton Mifflin, Boston, MA.

Creswell, John W. 1994. Research Design: Qualitative and Quantitative Approaches. Sage, Thousand Oaks, CA.

DeNisi, Angelo S., Thomas P. Cafferty, Bruce M. Meglino. 1984. A cognitive view of the performance appraisal process: A model and research propositions. Organ. Behavior and Human Decision Processes 33(3) 360–396.

Deutsch, M. 1958. Trust and suspicion. Conflict Resolution 2(4) 265– 279.

DiRomualdo, Anthony, Vijay Gurbaxani. 1998. Strategic intent for IT outsourcing. Sloan Management Rev. 39(4) 67–80.

Eisenhardt, Kathleen M. 1985. Control: Organizational and economic approaches. Management Sci. 31(2) 134–150.

Eisenhardt, Kathleen M. 1989a. Building theory from case study research. Acad. Management Rev. 14(4) 532–550.

Eisenhardt, Kathleen M. 1989b. Agency theory: An assessment and review. Acad. Management Rev. 14(1) 57 74.

Falk, R. F., N. B. Miller. 1992. A Primer for Soft Modeling. University of Akron Press, Akron, OH. Fiske, Susan T., Shelley E. Taylor. 1991. Social Cognition. McGraw- Hill, New York.

Ganesan, Shankar. 1994. Determinants of long-term orientation in buyer-seller relationships. J. Marketing 58(2) 1–19.

Gefen, David, Detmar Straub. 1997. Gender difference in the perception and use of e-mail: An extension to the technology acceptance model. MIS Quart. 21(4) 389–400.

Gefen, David, Detmar Straub, Marie Boudreau. 2000. Structural equation modeling and regression: Guidelines for research practice. Comm. AIS 7(August) 1–78.

Giffin, Kim. 1967. The contribution of studies of source credibility to a theory of interpersonal trust in the communication process. Psych. Bull. 68(2) 104–120.

Gollwitzer, Peter M., Ronald F. Kinney. 1989. Effects of deliberate and implemental mindsets on illusion of control. J. Personality and Soc. Psych. 56(4) 531–542.

Granovetter, Mark S. 1973. The strength of weak ties. Amer. J. Sociology 78(6) 1360–1380.

Harris, Stanley G. 1994. Organizational culture and individual sensemaking: A schema-based perspective. Organ. Sci. 5(3) 309–321.

Henderson, John C., Soonchul Lee. 1992. Managing I/S design teams: A control theories perspective. Management Sci. 38(6) 757–777.

Hogan, Eileen A. 1987. Effects of prior expectations on performance ratings: A longitudinal study. Acad. Management J. 30(2) 354– 368.

Igbaria, Magid, Tor Guimaraes, Gordon B. Davis. 1995. Testing the determinants of microcomputer usage via a structural equation model. J. Management Inform. Systems 11(4) 87–114.

Igbaria, Magid, Saroj Parasuraman, Jack J. Baroudi. 1996.Amotivational model of microcomputer usage. J. Management Inform. Systems 13(1) 127–143.

Igbaria, Magid, Nancy Zinatelli, Paul Cragg, Angele L. M. Cavaye. 1997. Personal computing acceptance factors in small firms: A structural equation model. MIS Quart. 21(3) 279–305.

Koller, Michael, Robert A. Wicklund. 1988. Press and task difficulty as determinants of preoccupation with person descriptors. J. Experiment. Soc. Psych. 24(3) 256–274.

Krackhardt, David, Jeffrey R. Hanson. 1993. Informal networks: The company behind the chart. Harvard Bus. Rev. 71(4) 104–111.

Krueger, Richard A. 1994. Focus Groups: A Practical Guide for Applied Research. Sage, Thousand Oaks, CA.

Kruglanski, Arie W. 1989. Lay Epistemics and Human Knowledge. Pelnum, New York.

Lacity, M., Leslie P. Willcocks. 1995. Interpreting information technology sourcing decisions from a transaction cost perspective: Findings and critique. Accounting, Management, & Inform. Tech. 5(3&4) 203–244.

Lacity, M., Leslie P. Willcocks. 1998. An empirical investigation of information technology sourcing practices: Lessons from experience. MIS Quart. 22(September) 363–408.

Lacity, M., Leslie P. Willcocks. 2000. Survey of IT outsourcing experiences in U.S. and U.K. organizations. J. Global Inform. Management 8(2) 5–23.

Landis, J. R., G. G. Koch. 1977. The measurementof observer agreement for categorical data. Biometrics 22 79–94.

Lewicki, Pawel, Thomas Hill, Irene Sasaki. 1989. Self-perpetuating developmentof encoding biases. J. Experiment. Psych. General 118(4) 323–337.

Lord, Charles G., Lee Ross, Mark R. Lepper. 1979. Biased assimilation and attitude polarization: The effects of prior theories on subsequently considered evidence. J. Personality and Soc. Psych. 37(11) 2098–2109.

Louis, Meryl R., Robert I. Sutton. 1991. Switching cognitive gears: From habits of mind to active thinking. Human Relations 44(1) 55–76.

Marsden, Peter V. Karen E. Campbell. 1984. Measuring tie strength. Soc. Forces 63(2) 482 501.

Masten, Scott E. 1991. The legal basis of a firm. O. E. Williamson, Sidney G. Winters, eds. The Nature ofthe Firm: Origins, Evolution, and Development. Oxford University Press, New York, 196–212.

Mayer, John D., Gordon H. Bower. 1986. Learning and memory for personality prototypes. J. Personality and Soc. Psych. 51(3) 473– 492.

Millar, Murray G., Abraham Tesser. 1986. Thought-induced attitude change: The effects of schema structure and commitment. J. Personality and Soc. Psych. 51(2) 259–269.

Morgan, Robert M., Shelby D. Hunt. 1994. The commitment-trust theory of relationship marketing. J. Marketing 58(3) 20–38.

Moscovici, S., M. Zavalloni. 1969. The group as a polarizer of attitudes. J. Personality and Soc. Psych. 12 125–135.

Myers, D. G., H. Lamm. 1976. The group polarization phenomenon. Psych. Bull. 83 63–66.

Nunnally, Jum C. 1967. Psychometric Theory. McGraw-Hill, New York. Peterson, Mark F., et al., Conrad Viedge. 1995. Role conflict, ambiguity, and overload: A 21-nation study. Acad. Management J. 38(2) 429–452.

Robinson, Sandra L., Matthew S. Kraatz, Denise M. Rousseau. 1994. Changing obligations and the psychological contract: A longitudinal study. Acad. Management J. 37(1) 137–152.

Ross, Lee, Mark R. Lepper, Michael Hubbard. 1975. Perseverance in self-perception and social perception: Biased attribution processes in the debriefing paradigm. J. Personality and Soc. Psych. 32(5) 880–892.

Rousseau, Denise M., Judi M. Parks. 1993. The contracts of individuals and organizations. L. L. Cummings, Barry M. Staw, eds. Research in Organizational Behavior, vol. 15. JAI Press, Greenwich, CT, 1–43.

Rousseau, Denise M., Sim B. Sitkin, Ronald S. Burt, Colin Camerer. 1998. Not so different after all: A cross discipline view of trust. Acad. Management Rev. 23(3) 393–404.

Simon, Herbert A. 1951. A formal theory of the employment relationship. Econometrica 19(3) 293–305.

Slaughter, Sandra, Soon Ang. 1996. Employment outsourcing in information systems. Comm. ACM 39(7) 47–54.

Slusher, Morgan P., Craig A. Anderson. 1987. When reality monitoring fails: The role of imagination in stereotype maintenance. J. Personality and Soc. Psych. 52(4) 653–662.

Snyder, Mark, Julie A. Haugen. 1994. Why does behavioral confirmation occur? A function perspective on the role of the perceiver. J. Experiment. Soc. Psych. 30(3) 218–246.

Snyder, Mark, Elizabeth D. Tanke, Ellen Berscheid. 1977. Social perception and interpersonal behavior: On the self-fulfilling nature of social stereotypes. J. Personality and Soc. Psych. 35(9) 656–666.

Spradley, James P. 1979. The Ethnographic Interview. Holt, Rhinehart, and Winston, New York.

Staples, D. Sandy, John S. Hulland, Christopher A. Higgins. 1998. A self-efficacy theory explanation for the management of remote workers in virtual organizations. J. Comput. Mediated Comm. 3(4), _www.ascusc.org/jcmc/vol3/issue4/staples.html_.

Staw. Barry M., Lance E. Sandelands, Jane E. Dutton. 1981. Threatrigidity effects in organizational behavior: A multilevel analysis. Admin. Sci. Quart. 26(4) 501–524.

Strickland, Lloyd H. 1958. Surveillance and trust. J. Personality. 26(June) 200–215.

Tashakkori, Abbas, Charles Teddlie. 1998. Mixed Methodology: Combining Qualitative and Quantitative Approaches. Sage, Thousand Oaks, CA.

Thibaut, John, Michael Ross. 1969. Commitment and experience as determinants of assimilation and contrast. J. Personality and Soc. Psych. 13(4) 322–329.

Willcocks, Leslie P., Mary C. Lacity. 1998. Strategic Sourcing ofInf ormation Systems: Perspectives and Practices. John Wiley & Sons, U.K.

Appendix

Appendix A

Study 2: Survey Items for Variables Used in the PLS Analysis

Variables were measured using a seven-pointscale, from "1" indicating "strongly disagree"to "7" indicating "strongly agree," unless otherwise indicated. These measures were intended to be "reflective" measures rather than "formative" (Gefen et al. 2000).

Persistent Expectations

Because the contractors were previously part of [the client organization], I expect the contractors to:

PERSIST1: be more willing to work extra hours than other vendors;

PERSIST2: perform their job more reliably than other vendors;

PERSIST3: volunteer to do more tasks outside the Service Level Agreement (SLA) than other vendors;

PERSIST4: invest more than other vendors in improving current skills to serve us better;

PERSIST5: be better at promoting a positive attitude in [client organization] than other vendors;

PERSIST6: be more willing to put in a full day's work for a full day's pay than other vendors;

PERSIST7: suggest more initiatives on technology issues to [client organization] than other vendors.

Role Overload

RO1: In terms of job roles and responsibilities, there is a need to reduce some parts of my role;

RO2: In terms of job roles and responsibilities, I feel overburdened in my role;

RO3: In terms of job roles and responsibilities, I have been given too much responsibility;

RO4: In terms of job roles and responsibilities, my work load is too heavy;

RO5: In terms of job roles and responsibilities, the amount of work I have to do interferes with the quality I want to maintain.

Strength of Ties with Contractors

STRGTH1: We maintain close relationships with the contractors;

STRGTH2: We understand the contractors well;

STRGTH3: We have frequent contacts with the contractors.

Trust in Contractors

TRUST1: The contractors have been frank in dealing with us;

TRUST2: Promises made by the contractors are reliable;

TRUST3: The contractors are knowledgeable regarding their services;

TRUST4: The contractors do not make false claims;

TRUST5: If problems such as delays arise, the contractors are honest aboutt he problems.

Prior Experience with Other Outsourcing Vendors

Please indicate the number of years of experience you have had in managing third-party outsourcing vendors.

Client-Managers' Perceptions of Contractor Performance

This variable was measured with a seven-point scale, ranging from "1" indicating "delivered very much less than what was promised" to "7" indicating "delivered very much more than what was promised."

Respondents indicated how well the contractors had delivered what they promised in terms of:

PERF1: meeting deadlines specified in the SLA;

PERF2: providing applications development specified in the SLA;

PERF3: providing software maintenance specified in the SLA;

PERF4: providing infrastructure support (e.g., facilities management) specified in the SLA;

PERF5: meeting the overall SLA.

Appendix B

Loadings, Jackknife Estimates, and T-Values for PLS Run

	Entire Sample Estimate	Mean of Sub-samples	Jackknife Estimate	Standard Deviation	Standard Error	*T*-Statistic
Persistence:						
PERSIST1	0.7469	0.7469	0.7542	0.5531	0.0428	17.6199
PERSIST2	0.8245	0.8245	0.8215	0.4374	0.0338	24.2734
PERSIST3	0.8006	0.8006	0.8019	0.4938	0.0382	20.9847
PERSIST4	0.7811	0.7810	0.7925	0.6219	0.0481	16.4694
PERSIST5	0.8274	0.8274	0.8249	0.6414	0.0496	16.6211
PERSIST6	0.8709	0.8708	0.8804	0.3646	0.0282	31.2097
PERSIST7	0.8735	0.8735	0.8715	0.2520	0.0195	44.6967
Role Overload:						
RO1	0.8022	0.8022	0.7969	0.4360	0.0337	23.6196
RO2	0.8903	0.8903	0.8875	0.3136	0.0243	36.5786
RO3	0.8011	0.8011	0.8044	0.4348	0.0336	23.9060
RO4	0.7970	0.7969	0.8093	0.7489	0.0580	13.9652
RO5	0.7132	0.7131	0.7235	0.8676	0.0671	10.7776
Strength of Ties:						
STRGTH1	0.9323	0.9323	0.9389	0.7600	0.0588	15.9648
STRGTH2	0.8425	0.8420	0.9221	1.3460	0.1042	8.8535
STRGTH3	0.7337	0.7336	0.7509	1.7914	0.1386	5.4170
Trust:						
TRUST1	0.8026	0.8024	0.8428	2.0676	0.1600	5.2675
TRUST2	0.9244	0.9244	0.9183	1.3021	0.1008	9.1145
TRUST3	0.7735	0.7719	1.0403	2.7386	0.2119	4.9089
TRUST4	0.7432	0.7409	1.1273	3.3152	0.2565	4.3942
TRUST5	0.7681	0.7659	1.1351	2.9783	0.2305	4.9252
Perceived Contractor Performance:						
PERF1	0.8404	0.8403	0.8528	0.5928	0.0459	18.5900
PERF2	0.8890	0.8890	0.8922	0.3829	0.0296	30.1112
PERF3	0.8296	0.8295	0.8401	0.6421	0.0497	16.9092
PERF4	0.7293	0.7292	0.7404	1.0024	0.0776	9.5460
PERF5	0.8962	0.8961	0.9099	0.4010	0.0310	29.3244

Part VI:

Application Service Providing and Business Process Outsourcing

Understanding the 'Service' Component of Application Service Provision: An Empirical Analysis of Satisfaction with ASP Services[1]

Anjana Susarla

University of Washington Business School, asusarla@u.washington.edu

Anitesh Barua, Andrew B. Whinston

McCombs School of Business, The University of Texas at Austin

1 Application Service Providers: Promise and Reality

Dramatically reduced network cost due to the Internet and Virtual Private Networks (VPN), the ever increasing supply of bandwidth, and advances in the security of Internet based transactions have led to the emergence of Application Service Providers (ASP), a new category of IT service firms. The Application Service Provider Consortium defines an ASP as an organization that "manages and delivers application capabilities to multiple entities from a data center across a wide area network (WAN)." User organizations can get access to software applications from one or more ASPs over the Internet for a subscription fee. A key selling point of ASP services involves a shorter time period required to install and implement new software applications (Mears, 2001). For businesses plagued by high turnover of IT staff, inadequate organizational resources to maintain and upgrade existing IT applications, and large capital requirements for major IT implementation projects, the ASP business model could be an attractive alternative with its off-the-shelf IT applications subscription approach (Vizard, 2000). Sophisticated ASPs have gone as far as offering enterprise resource planning, electronic commerce and supply chain applications, which may involve integration with existing information systems in a user organization (Paul, 2000).

---

[1] Another version of this paper appeared as: Susarla, A., Barua, A., and Whinston, A.B. "Understanding the Service Component of Application Service Provision: An Empirical Analysis of Satisfaction with ASP Services," Management Information Systems Quarterly (27:1) 2003, pp 91-123. The current, related-but-different version appears with permission of *MIS Quarterly*.

While the ASP model has the potential to fundamentally change the manner in which IT services are provided to user firms, to date ASPs have had a lackluster record in signing up customers (Caulfield, 2000). Moreover, several customers of ASPs are unsatisfied (Ferengul 2002) with their service, which questions the viability of the ASP business model. Evidence points also to the fact that ASPs themselves have had to rework their service strategies in response to market demand (Pring, 2002). It has been long recognized that market success depends on designing services to match customer needs (Heskett et. al. 1990) and that customer satisfaction has a positive impact on market share and profitability (Anderson and Sullivan 1993). Satisfied customers are more likely to engage in positive word of mouth (Anderson et. al. 1994; Howard and Sheth 1969), thus lowering the cost of attracting new customers (e.g. Anderson et. al. 1994, Fornell 1992). Satisfaction plays an important role inbuilding other important assets for the firm, such as brand equity (Keller 1993) and leads to long-term continuation of relationships (Anderson and Narus 1990). A focus on satisfaction is important for ASPs if they have to retain existing customers as well as attract new customers. This calls for an assessment of the determinants of consumer satisfaction (CS) (throughout the paper we use the terms satisfaction and consumer satisfaction interchangeably) with ASP and an evaluation of the effectiveness of the ASP mode of service delivery over the Internet. This research analyzes the determinants of satisfaction in ASP service provision, which are important to both ASPs and end user organizations in understanding the value drivers in ASP service provision. We combine insights from theoretical traditions such as the literature on IT adoption, outsourcing and CS to develop a conceptual model of satisfaction with ASP services. Besides the theoretical contributions, an understanding of what users value in ASPs as well as the factors contributing to the success of ASP initiatives is vital both for organizations implementing ASP solutions and for the ASPs themselves.

Our analysis shows that the satisfaction with ASP is negatively affected by the disconfirmation effect, positively influenced by the perceived provider performance and prior systems integration, which is a measure of integration of organizational systems prior to using ASP services. Further, perceived provider performance is positively influenced by the functional capability of the ASP, the quality assurance by the ASP and negatively influenced by the prior systems integration. These findings suggest that to be successful, ASPs must strive to reduce the disconfirmation effect faced by adopting organizations and to enhance the perceived quality of their solution, possibly through partnerships with leading IT vendors. Further, ASPs must improve the integration of their offerings with existing applications in user organizations, which may require alliances with IT firms that specialize in integration services.

The balance of the paper is organized as follows. In section 2 we present an overview of satisfaction research and outsourcing, and outline the research hypotheses from the literature on satisfaction. In section 3 we discuss the model

and present the constructs used to analyze the satisfaction process with ASP. Section 4 discusses the data collection and analysis. In section 5 we present a discussion of results and in section 6 we identify future directions of research.

2 Understanding Satisfaction with ASP

2.1 Satisfaction and IT Outsourcing

The IT outsourcing literature has analyzed the outsourcing process in two distinct but related streams: outsourcing success (e.g. McFarlan and Nolan, 1995; Grover et. al. 1996, Lee and Kim, 1999) and the determinants of IT outsourcing (e.g. Chadhury, et. al. 1995, Nam et. al. 1996, Loh and Venkatraman, 1992, Grover and Teng 1993). In analyzing the ASP phenomenon, our research follows the precedent of studies that focus on outsourcing success, in that we evaluate satisfaction with ASP, rather than determinants of end user utilization of ASP services. A study of the determinants of satisfaction in IT outsourcing, and especially in the ASP business model, is relevant for several reasons.

IS research on user satisfaction posits that user satisfaction is one of the most important measures of information systems success (DeLone and McLean, 1992; Ives and Olson, 1984). When implementing a new system, the satisfaction with the system indicates the users' understanding of the system and success (Baroudi and Orlikowski 1988). Satisfaction with a new service forms an important part of the organizational assimilation process (Cronin and Taylor 1992), since the moderating effect of experience with the service can provide an evaluation for making subsequent judgments (Pieters et. al. 1995). Diffusion theorists (e.g. 183) have pointed out that in the early maintenance stage prior to routinization, there is a higher probability of disenchantment leading to discontinuance, and that makes it imperative to examine the satisfaction with a new business model such as ASP. It has been posited that service expectations play a critical role in the evaluation of outsourced IT services (e.g. Teng et. al. 1995). Therefore a focus on the criteria that dictate choice of a specific sourcing option does not adequately reflect expectation initiated performance comparisons and performance judgments and their role in the formation of satisfaction with the IT service provider (e.g. Gardial et. al. 1994 for the case of high technology products). Satisfaction has been found to have a strong link with repurchase intentions (Anderson and Sullivan 1993), customer retention rate (Rust et. al.1995) and customer retention (Bolton 1998); making it imperative for an IT solution provider to understand the determinants of satisfaction of firms outsourcing IT services. As the ASP business model transforms software into a service, the consumer satisfaction paradigm can

provide rich insights into the processes that affect a user's post usage cognitive evaluation of a service (e.g. Oliver 1996).

Satisfaction has been defined in the literature as, "a judgment that a service provided a pleasurable level of consumption-related fulfillment, " (Oliver 1996). Anderson and Sullivan (1993) posit that satisfaction can be "broadly characterized as a post-purchase evaluation of product quality given pre-purchase expectations". The expectation-disconfirmation paradigm (Oliver 1977, 1980) posits that consumer satisfaction results from a comparison of expectations, which are a set of beliefs about desired attributes of a product or service, with the actual consumption experience. However, subsequent research has found that satisfaction is also influenced by a pre-experience comparison standard and the extent to which this is disconfirmed (Woodruff et. al. 1983; Wilton and Tse 1983; Howard and Sheth 1969; Olashavsky and Miller 1972). Research also suggests that in addition to disconfirmation with respect to pre-experience standards, satisfaction is influenced by perceived performance of a product or service (Tse and Wilton 1988; Churchill and Suprenant 1982; Cronin and Taylor 1992). Therefore the satisfaction evaluation arises out of a complex process of simultaneous interactions that involves multiple comparison standards (Tse and Wilton 1988, Oliver 1985, Forbes, et. al. 1986). In our research we look at the influence of expected service and prior experiences as well as the perceived provider performance on satisfaction. We summarize the key constructs and posited relationships from the satisfaction literature in Figure 1.

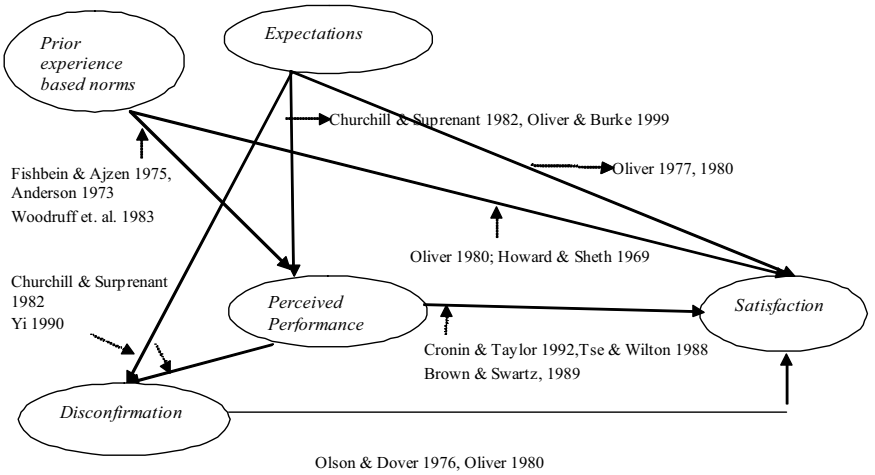


Figure 1: Prior Constructs from Satisfaction Literature

2.2 Satisfaction and the ASP Business Model

Though ASP can be considered another option of outsourcing, there are key differences between the service provision of ASPs and traditional outsourcing. Software development outsourcing discussed in the MIS literature (e.g. Loh and Venkatraman 1992) generally refers to situations where the company contracted with outsourcing providers to develop software or bought generic applications. However in conventional outsourcing of IT the solution is hosted on the company's servers and the corporate IT department had the final accountability for the IT services (Cross 1995, Cross et. al. 1997). An ASP, on the other hand, renders software as a service, providing applications and the IT infrastructure and support services to customers on a subscription basis (Donahue, 1999), and bears the responsibility for efficient provision of these services. Another key differentiator in the ASP mode of IT service delivery is the nature of services that are outsourced. In earlier analyses of outsourcing, the focus was on outsourcing of specific IS functions such as systems development, systems operation, systems management and end user support (Loh and Venkatraman 1992; Brown and Magill 1994). However in the ASP business model the ASP combines several software capabilities and roles such as development, management and support, highlighting the need to study the multifaceted nature of ASP usage. A corporate IT user accessing the IT application hosted by the ASP is therefore in a 'service encounter' (Bitner et. al. 1990), which is defined in the literature as (Shostack 1985) " a period of time during which a consumer directly interacts with a service," with the ASP.

The nature of service provision by ASPs (i.e. hosting software applications over the Internet) necessitates software delivery options unique to the ASP model. ASPs rely on a variety of technical service guarantees to signal the quality of their services (Jude and Meachim, 2000). While these guarantees are important in choosing an ASP in the first place, service guarantees are also used to make attributions for failure or success after service has been experienced (e.g. Kashyap 2001). Similarly the users of ASP may acquire expectation standards about the capability of the software applications hosted by the ASP through the influence of diverse sources such as the business press, other corporate ASP users, external consultants or the ASP's own marketing campaign, and these expectations act as comparative references for performance judgments (e.g. Oliver and Burke 1999).

Another distinguishing feature of the ASP model is that the relationship between the ASP and the end user organization is one that needs to be sustained over a long period of time, akin to a continuous service provider (Bolton and Drew 1991, Oliver 1989) discussed in the services marketing literature. With potentially low switching costs in the ASP business model (e.g. Downes et. al. 1998), users assessment of performance and disconfirmation in the service encounter can be important factors in switching services. The service exchange process should elicit in the ASP's users a commitment towards the service provider, which necessitates

an understanding of the evaluation of the service encounter. It has been posited that in an exchange relationship a comparison level, which is an evaluation of the working partnership in comparison with similar experiences (e.g. Anderson and Narus 1990), dictates the assessment of results. An evaluation of a service encounter is a result of multiple comparisons including the prior experiences of users (e.g. Brown and Swartz 1989).

It is critical therefore to understand several aspects of the service encounter that can affect the user's evaluation of the ASP's service such as expectations, prior usage based norms and disconfirmation in the service encounter, which are constructs discussed in the satisfaction literature. We therefore look at a theoretical framework that evaluates the effect of perceived performance and disconfirmation, which are theoretical constructs derived from the satisfaction literature (e.g. Bitner et. al. 1990 in discussing service encounter satisfaction) on the satisfaction with ASP.

3 A Model of Satisfaction Determinants

3.1 Defining the Satisfaction Construct

There is a substantial body of research on consumer behavior that focuses on testing models of consumer satisfaction (e.g., Oliver 1993; Oliver and DeSarbo 1988; Spreng, et. al. 1996; Tse and Wilton 1988). However, there is also a lack of definitional and methodological standardization (Peterson and Wilson 1992) as to what constitutes satisfaction, including whether satisfaction is a process or an outcome (Yi 1990). We follow the precedent of consumer satisfaction definitions that have either emphasized satisfaction as an evaluation process (e.g., Fornell 1992; Oliver 1980) or a response to an evaluation process (e.g., Howard and Sheth 1969; Tse and Wilton 1988). This is in line with our context of analyzing satisfaction with ASP usage in the organization, which reflects the process aspect of using ASP rather than a one-time end result, such as financial outcomes realized on deploying ASP.

We develop a model of satisfaction with ASP within the service encounter framework developed by Bitner (1990) and the conceptualization of service provider performance (Bitner, et. al. 1990; Churchill and Surprenant, 1982). Satisfaction with ASP is evaluated after the organization has been using the ASP's services. Satisfaction is not a uni-dimensional construct (Oliver 1980) and literature suggests that it be measured as a "latent construct with multiple indicators at the attribute level," (Oliva et. al. 1992). Service encounter satisfaction reflects the consumer's feelings about the interaction with the firm, which can be multiple instances where the customer interacts with the service

provider (Oliva et. al. 1992, Bitner and Hubbert. 1994). Further the service encounter satisfaction results from events and behaviors during that definable period of time (Bitner 1990; Bitner et. al. 1990). Therefore we follow the precedent of defining satisfaction as "a positive affective state resulting from the appraisal of all aspects of a firm's working relationship with another firm" (Anderson and Narus, 1990). We conceptualize satisfaction with ASP as a single construct that is similar to the overall service satisfaction (e.g. Bitner and Hubbert 1994) construct in that we capture the satisfaction of users with the working relationship with the ASP as well as satisfaction with ASP's service. We depict the satisfaction formation process in figure 2.

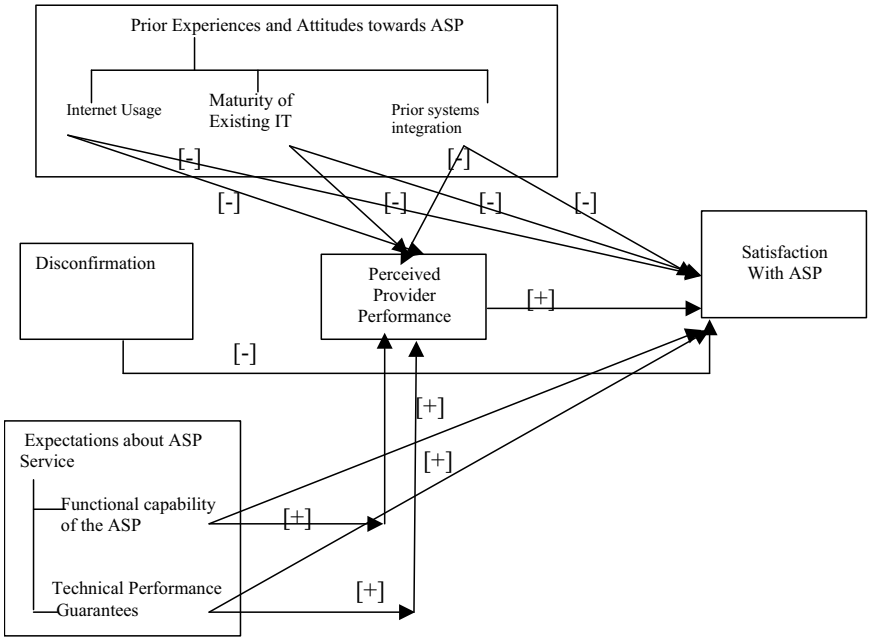


Figure 2: Conceptual Model of Satisfaction with ASP

3.2 The Role of Perceived Provider Performance

The CS literature posits that perceptions of performance are compared with the expectations about a service, and this leads to satisfaction (Rust and Oliver 2000; Zeithaml et. al. 1993). Perceived provider performance is the perception of the user's experience with the service (Spreng et. al. 1996), here the experience with the ASP, and is influenced by expectations of users (e.g. Churchill and Surprenant 182). In the post-usage evaluation, the perceived performance along the dimensions of the desired attributes of the service can have an important role in

mitigating disconfirmation (LaTour and Peat 1979) and thereby will have a positive impact on satisfaction (Cadotte et. al. 1987, Churchill and Suprenant 1982).

In our conceptualization of perceived provider performance, we rely on the attribute-level conceptualization of the perceived performance as an antecedent of satisfaction (Oliver 1993; LaTour and Peat 1979; Gardial et. al. 1994; Mittal et. al. 1999). Perceived provider performance is determined by consumers' beliefs about performance dimensions of the ASP. The perception of an ASP's performance results from an evaluation of the ASP's service along the dimension of desirable performance attributes. Apart from cost savings resulting from using an ASP's service there are other factors that can add value to an organization such as the speed with which the ASP can offer implementation of needed IT services (e.g. Greengard 2000) and access to superior technological capabilities (e.g. Apicella 2001).

In our initial qualitative survey (discussed in section 4.1) we assessed end user perceptions of expected service benefits from using an ASP's service. The construct perceived provider performance was designed with the feedback about desirable performance attributes of ASP from our survey and the construct is intended to measure the perceptions of service after usage along the dimensions of desirable performance attributes. In evaluating new services such as ASP services, learning from experience is an important motive for use and good performance implies satisfaction, regardless of prior expectations and disconfirmation.

Hypothesis 1: *The perceived provider performance has a positive impact on the satisfaction with ASP.*

3.3 Expectations about ASP Service: The Effect of Technical Guarantees and Functional Capability of the ASP

Expectations about performance of a service are derived from expectancy theory (Tolman 1932), and represent consumers' inferences about anticipated performance (Churchill and Surprenant 1982). Prior literature on satisfaction posits that expectations have a positive impact on perceptions of provider performance (Swan and Trawick 1981; Cadotte et. al. 1987; Anderson et. al. 1994). As the ASP model is relatively new, the end user organizations of ASP services do not have sufficient experience with the ASP to form expectations based on the service delivery of the ASP. Literature on new product and service adoption posits that when there is uncertainty regarding the quality of a product or service, the consumer may rely on extrinsic cues, such as reputation (Grewal et al., 1998) or product warranties (Shimp & Bearden 1982), to form an expectation about the service.

In consumer satisfaction literature, expectations have been conceptualized either solely as preusage beliefs about a service (e.g. Olson and Dover 1979) or as a combination of beliefs and evaluation of beliefs. Thus expectations can deal with identification of attributes (Westbrook 1987, Westbrook and Reilly 1983, Bearden and Teel 1983) as well as an evaluative assessment of how good/bad the occurrence is (Churchill and Surprenant 1982, Oliver 1980, Tse and Wilton 1988). We follow the former approach. In conceptualizing expectations, researchers have characterized expectations as 'idealized standards' or adequate expectations (Woodruff et. al. 1983, Tse and Wilton 1988, Teas 1994, Parasuraman et. al. 1991). Desired service expectations represent a combination of a 'can be' and a normative 'should be' standards (Parasuraman et. al. 1991) and adequate service expectations (Zeithaml et. al. 1996), represent the predicted service a consumer thinks she will receive. The former is normative while the latter reflects service expectations specific to a provider. Research suggests that (Parasuraman et. al. 1991) predicted service expectations are more likely influenced by circumstances specific to consumers and therefore more likely to be changeable than desired service expectations. Further, ideals as standard may tend to evoke a contrast effect on the evaluation of experience (Tse and Wilton 1988), whereas an expectation that reflects adequate service or predicted service may evoke an assimilation effect in that users can modify expectations when disconfirmed (Pieters et. al. 1995, Oliver and Burke 1999). Since assimilation effects influence the evaluation of new services, we have conceptualized expectations as idealized expectations.

3.3.1 Technical Service Guarantees

Reliability and performance form important determinants of customer satisfaction with software products (Kekre et. al. 1995). In the ASP model of service delivery, a critical aspect of the ASP service is to ensure reliability, guaranteed availability (Apicella 2001) and application response (Lee and Siewierek, 1998). ASPs need to guarantee performance comparable to client server computing over a local area network (LAN) by designing a multi-user accessible system that is portable for use over the Internet, and can handle security and access control across multiple administrative domains (Kapadia and Fortes 1999). For efficient application service provision over the Internet, the ASPs should have network platforms that support quality of service (QoS) based routing methods and standards (Erfani et. al. 2000). ASPs have to back their solution with effective SLAs that can guarantee network reliability, application reliability, and scalability of the software (Hayes 2000).

Consumer satisfaction literature suggests that consumers form expectations based on their perceptions about whether the desired attributes of the service can be provided (Olashavsky and Miller 1972). The literature on warranties has posited that warranties influence consumers by representing assurances about the quality and value of the product and service (e.g. Shimp and Bearden 1982). Once users

acquire expectations from a standard, these serve as comparative referents for performance judgments (Oliver and Burke 1999). Users similarly make inferences about the ASP's performance based upon the technical service guarantees offered by the ASP, which then serve as an expectation against which performance and disconfirmation judgments are made.

Hypothesis 2a: *The technical service guarantees of an ASP have a positive impact on perceived provider performance.*

Further, CS research suggests that consumers may infer satisfaction from procedures that are set up to resolve customer problems (e.g. Bitner, et. al. 1990), i.e., effective SLAs and service processes of the ASP (Borck 2000). ASPs may use service guarantees to inform users that they are responsible for certain aspects of their service; the service guarantees can therefore serve heighten user awareness and lead the users to attribute service success to the ASPs. It has been posited that there is higher satisfaction with external sources when individuals attribute success to these sources (Oliver and DeSarbo 1988). Research suggests that the concept of fairness is central to customer evaluations of equity in transactions with firms (Oliver and Swan 1989); service guarantees can impact the level of satisfaction of the consumer depending on perceptions of outcome equity (Oliver 1993).

Hypothesis 2b: *The technical service guarantees of an ASP have a positive impact on the satisfaction with ASP.*

3.3.2 Functional Capability of the ASP

Capability of a software provider in terms of functionality of the software has been identified as a factor gauging satisfaction (Kekre et. al. 1995, Krishnan et. al. 1999). At the time of our survey most ASPs were new companies with relatively unproven solutions (Wittman 2000); therefore, the users of an ASP form expectations about the ASP's service based on perceptions about the functional capability of the ASP. The image of a company (Bessom and Jackson 1975; Booms and Bitner 1981) is an integral part of how potential users may view a service company, in this case the ASP. As the ASP is a relatively new model potential users of ASP know that they would be taking a risk transacting with a financially unsound ASP. The stability and financial soundness becomes another component by which consumers can infer the functional capability of the ASP. Consumers form expectations about the ASP's service based on the functional capability of the ASP, which then serves as an expectation standard against which subsequent performance judgments are made.

Hypothesis 2c: *The functional capability of the ASP has a positive effect on perceived provider performance.*

Research on services marketing suggests posits that users of a service make attributions about the nature of service delivery from cues that suggest

competence and efficiency of the service provider (Bitner 1990. Folkes et. al. 1987, Folkes 1988). When users of a service perceive the service provider is stable, competent and in control of the service there attributions cause higher satisfaction from the service (Folkes et. al. 1987, Weiner 2000). In a high contact transaction service such as ASP the expectation inducing cues about the service play a critical role in satisfaction judgments (e.g. Bitner 1990).

Hypothesis 2d: *The functional capability of the ASP has a positive effect on the satisfaction with ASP.*

3.4 Prior Experience of the Firm: The Effect of Prior Internet Usage, the Maturity of Internal IT and Prior Systems Integration

Experience based norms are the standards that consumers rely upon to assess performance, which is different from the 'desired attributes /expectations' in that these norms represent a pooling of prior experiences and represent desired performance and not desirable attributes of the product or service (e.g. Cadotte et. al. 1987). Researchers have posited that experience based norms can be measured through scales that objectively assess the level of an attribute can be used (Cadotte et. al. 1987); a norm could be thus the typical performance of a particular service (i.e. a sampling of performance of a service) or a performance evaluation (Cadotte et. al. 1987). It has also been posited that the experience-based norm is a comparison standard evocative of other situations that the user has experienced, i.e. a comparison of performance across use situations (Gardial et. al. 1993).

Consumers derive a level of comparison from prior experience with similar services, or by a comparison of capabilities of the service with alternative services (LaTour and Peat 1979). Satisfaction involves evaluation, which is the result of a comparison process (LaTour and Peat 1979; Cadotte et. al. 1987) and including experiences with similar services and prior experiences of consumers is illuminating of the 'sequence of judgments leading to choice of standards for evaluating perceived provider performance' (Cadotte et. al. 1987). A user's satisfaction with ASP is a result of her evaluation of the ASP's service as a comparison with prior experiences.

3.4.1 Prior Internet Usage

Prior experience causes consumers to form norms, which serve as frames of reference to evaluate satisfaction (e.g. LaTour and Peat 1979, Cadotte et. al. 1987). The ease with which aan organization could use the ASP's services depends on its familiarity with similar services; prior Internet usage in the corporation will serve as a norm to evaluate satisfaction. Consider for instance, a user who faces problems when transacting on the application hosted by the ASP.

Rather than call the corporate IT department, the user would have to navigate the ASP's automated help desk system, i.e. rely on the Internet for guidance. The ASP business model of service delivery over the Internet implies that the user's experience in using the Internet would help her level of comfort with the ASP.

A consumer's breadth of experience causes her to form standards about the performance achievable (Cadotte et. al. 1987) in a service encounter. A user's increased familiarity with a service results in expertise (Alba and Hutchinson 1987; Russo and Dosher 1983) and results in higher demands upon the service (e.g. Brucks 1985). A higher Internet usage in the organization leads to high familiarity with the Internet and this will impact upon the perception of ASP services. When a user in a corporate accesses IT applications through an ASP's service, therefore, the familiarity with Internet causes a negative impact on the satisfaction with ASP.

Hypothesis 3a: *Prior Internet usage has a negative impact on perceived provider performance.*

Research posits that when a high familiarity user enters into an interaction with a service provider, there is a history of a (potentially) larger number of satisfying experiences (Peterson and Wilson 1992) with similar services, i.e. a larger sample of satisfying experiences that guide future satisfaction judgments. It has been posited that high familiarity users have higher evaluative standards about performance (e.g. Anderson and Sullivan 1993). Satisfaction assumed to be a function of the surprise inherent in consumption (Oliver 1981), so familiarity with similar services can lead to lower satisfaction with the service.

Hypothesis 3b: *Prior Internet usage has a negative impact on satisfaction with ASP.*

3.4.2 Maturity of Internal IT

In evaluating the performance of a product or service consumers rely on standards based on their previous experience (Cadotte et. al. 1987, Woodruff et. al. 1983). A user's attitude towards technology influences the extent to which consumers interact with technology-based services (Dabholkar 1996; Voss et. al. 1998). Further a strong and powerful internal IT group may perceive a loss of control (e.g. Markus 1983, Newman and Sabherwal 1996) and this erodes the support for the ASP initiative. In operationalizing this construct, we have relied on prior literature on satisfaction (e.g. Cadotte et. al. 1987) where the beliefs of the users are elicited on key performance attributes that indicate the user's assessment of the maturity of the internal IT group.

Based on their previous experiences with internal IT, corporate IT users can form expectations on desired performance with a service such as ASP. When the internal IT group has considerable investment in capabilities that lead to maturity in delivering needed IT capabilities, it may be detrimental to the success of the

outsourcing process (Richmond et. al. 1992) since the users have very high expectations about the performance of the ASP. A mature internal IT group leads to higher expected service from the ASP, and a lower evaluation from ASP's service.

Hypothesis 3c: *Maturity of internal IT has a negative impact on the perceived provider performance.*

The resource-based view of the firm posits that a firm's distinctive competencies are a source of competitive advantage (Barney, 1986, Mahoney and Pandian 1992). Information technology is a valuable organizational capability and can be a source of competitive advantage for the organization (Jarvenpaa and Leidner, 1998; Bharadwaj 2000). When evaluating the satisfaction with the ASP, the end users compare the capabilities conferred by the ASP to that conferred by the internal IT. The norms applied to evaluate ASPs is a result of a pooling of prior experiences of the user (e.g. Swan and Oliver 1989; Woodruff et. al. 1983), here the experience with internal IT. The more mature the internal IT group is, and the higher the firm specific resources that they can provide, the more demanding the users in the organization are with respect to the ASP's services. The effectiveness of the ASP in delivering needed IT capabilities is therefore measured against the maturity of the internal IT group.

Hypothesis 3d: *Maturity of internal IT is negatively linked to satisfaction with ASP.*

3.4.3 Prior systems Integration

The modes of IT governance in an organization can be influenced by multiple contingencies such as corporate governance, firm size and external influences (Sambamurthy and Zmud 1999) which impose requirements on the design of information systems. Structural contingencies may dictate a high degree of interconnectedness in the IT infrastructure of an organization (Rathnam et. al. 1995). The mode of IT governance, therefore, introduces the need for operational compatibility (e.g. Torantzky and Klein 1982) within internal IT systems in the organization. When an organization that is using ASP evaluates the performance of the ASP, the the ASP's operational performance (in terms of the prior systems integration) is compared with its prior experience of IT infrastructure required to support integrating capabilities (e.g. Broadbent and Weil, 1999).

Following the comparison level theory (Thibaut and Kelly 1959), it has been posited that comparison level serves as an indicator of perceived performance (LaTour and Peat 1979). ASP users attitude towards systems integration is anchored in their experiences; an organization that values integration within its internal IT systems and has a high degree of prior systems integration (i.e. systems integration in the organization prior to implementing ASP services) will likely apply the same standards in evaluating the ASP services. We conceptualize the

construct 'prior systems integration' as an experience based norm that weighs an organization's need for systems integration, as measured by the internal IT infrastructure designed to integrate capabilities, against the performance of the ASP and influences the satisfaction with ASP.

Hypothesis 3e: *Prior systems integration has a negative impact on the perceived provider performance.*

It has been posited that customers assess a service in terms of normative standards that are the 'desired' service attributes (Parasuraman et. al. 1991; Boulding et. al. 1993); desired service attributes in turn depend on prior experiences of customers (Parasuraman et. al. 1991). Even though companies may find enormous benefits from ASP's services, there may be a significant erosion of the value provided by an ASP if there is a lack of architecture and standards that can enable ASP to easily integrate with internal applications in the organization (Landgrave, 2002), a point that is not often emphasized by proponents of the off the shelf application rental model. It has been well documented that non-integrated systems affect the performance of the organization (Lee and Billington 1993). Prior to implementing ASP services if the organization has a highly integrated IT structure, the introduction of ASP can introduce coordination problems whereby it is difficult to integrate information processed by the ASP into the organizational processes. End users' attitudes towards integrative IT capabilities are anchored in their previous experiences in that the existing technologies in the organization create an experience-based norm that affects the evaluation of satisfaction with ASP.

Hypothesis 3f: *Prior systems integration has a negative impact on the satisfaction with ASP.*

3.5 The Disconfirmation Experience

In the consumer satisfaction framework, the consumer's post purchase response is an evaluation of the discrepancy between prior expectations and actual product performance (Oliver 1980, Woodruff et. al. 1983, Olashavsky and Miller 1972). There have been different ways of operationalizing disconfirmation in the literature; disconfirmation can be the objective discrepancy between the expectation and performance (e.g. Olashavsky and Miller 1972), the inferred disconfirmation calculated as the difference between pre-usage ratings and post-usage ratings (e.g. LaTour and Peat 1979) or perceived disconfirmation which represents a subjective evaluation of the discrepancy between performance and evaluation (e.g. Churchill and Surprenant 1982).

We adopt the view of disconfirmation as a subjective evaluation, while also investigating the multiple standards of comparison in satisfaction formation (Tse and Wilton 1988). The objective approach is considered less appropriate for measuring satisfaction (Yi 1990), since prior empirical research has found that a measuring perceived disconfirmation or subjective rather than inferred

disconfirmation minimizes consistency bias (Swan and Trawick 1981) and does not suffer from methodological problems such as lack of reliability (Prakash and Lounsbury 1983). Subjective disconfirmation represents a distinct cognitive state resulting from the comparison process and preceding the satisfaction judgment and is posited to have an independent effect on the satisfaction of the consumer (Oliver 1980). Therefore we have characterized disconfirmation as an independent variable since specifying (subjective) disconfirmation as a function of the other independent variables may induce overspecification of the model (e.g. Tse and Wilton 1988). Perceived disconfirmation can be measured at an attribute level and measured on a 'better than expected –worse than expected' scale. Therefore higher rating indicates a negative disconfirmation effect, which negatively impacts satisfaction.

Hypothesis 4a: *Disconfirmation has a negative effect on the satisfaction with ASP.*

It has been posited that positive and negative evaluations have an asymmetric effect on satisfaction (Anderson and Sullivan, 1993; Oliver 1993; Mittal et. al. 1998). Prospect theory (Kahneman and Tversky 1979) postulates that peoples' judgments display loss aversion; the alternatives that a person faces are reducible to a series of prospects that are evaluated independently on the basis of an S-shaped value function and the function is steeper in the negative than in the positive domain. Negative information is more perceptually salient than positively valenced information, is given more weight than positive information, and elicits a stronger physiological response than positive information (Peeters and Czapinski 1990). Thus the negative disconfirmation effects should have a stronger impact on satisfaction than positive impact of perceived provider performance.

Hypothesis 4b: *Disconfirmation effects have a greater impact on satisfaction with ASP than perceived provider performance.*

4 Research Method, Data Collection and Analysis

4.1 Initial Qualitative Survey and Instrument Design

4.1.1 Exploratory Investigation

In the first phase of the research, unstructured questionnaires were mailed to firms who had outsourced to ASPs. The objective of the survey was to investigate user experiences with ASPs to understand the following questions:

- What are the key performance attributes of ASPs that are considered desirable by firms?
- In evaluating experience with ASPs, are there any discrepancies between expectations and performance? What are the attributes on which the ASP performs worse than anticipated?
- Before using an ASP's service, what are the criteria that are used to evaluate the ASP?
- What are some of the prior experiences of the firm that are likely to hinder or help the firm's experience in using ASP's services?

The feedback about key performance attributes was used to design the perceived provider performance construct. The disconfirmation construct was designed based on the attributes resulting from worse than expected performance of the ASP. It has been posited that disconfirmation for continuously provided services will not operate unless there are changes that are outside the range of experience based norms (Oliver 1989). Therefore to measure disconfirmation we assessed departures from normal service (e.g. Bolton and Drew 1991) as well as attribute level disconfirmation (e.g. Churchill and Surprenant 1982), which is posited to confirm or contradict the attributes of expectations and performance evaluations. For example one of the items queries the respondents on the implementation period, since a long implementation period erodes the advantages of rapid implementation and low costs of implementation (which are the perceived performance attributes). The common criteria used to evaluate the ASP could be classified into functional capability of the ASP and the technical service guarantees that the ASP provides. The commonly cited prior experiences were prior Internet usage, concerns about prior systems integration and maturity of internal IT, which form the basis of our prior experience based norms construct.

4.1.2 Questionnaire Design

The questionnaire was designed using the feedback from the participants in the user attitude survey according to the accepted principles of survey design (Dillman, 1978). A professional data collection organization was deployed to collect data from the organizations adopting ASP. The questionnaires were mailed to a random sample of 1100 firms. The usable sample contained 256 data points, indicating a response rate of 25%, which is an acceptable rate of response according to the principles of survey design. To address biases in size of the end user companies, the questionnaire was administered only to mid-market companies (businesses with 100 to 1000 employees Worldwide). To minimize respondent bias, the recommended method is that key informants participating in the survey be those who participate in decision making related to the topic of the survey (Phillips and Bagozzi, 1986). We therefore specified that respondents should be individuals who are involved with the corporate IT group or functional

specialists who use IT. To enforce accuracy in reporting, the criterion was that all end-user respondents had to be familiar with the term "Application Service Provider" in order to participate in the survey. We defined an ASP as "*any company that provides access to remotely hosted IT applications over a Wide Area Network (WAN), a Virtual Private Network (VPN) or over the Internet. These services may include Financial and Accounting applications, IT Networking applications, and Customer Relationship Management"* (definition adapted from Wainewright, 1999).

4.2 Analyzing the Measure Validity and Reliability

4.2.1 Reliability of the Measures and Respondent Bias

A confirmatory factor analysis was performed using SAS to establish reliability. Two measures of reliability using confirmatory factor analysis can be the indicator reliability (Long, 1983) and the composite reliability (Fornell and Larcker, 1981). These measures have frequently been used to test model reliability (e.g., Raghunathan et al., 1999). The indicator reliability is measured by the square of the standardized factor loadings, which reflects the percent of variation that is explained by the construct it measures. The indicator reliabilities varied from 0.254 to 0.945, and so the composite reliability of the indicator variables was assessed. The composite reliability (Werts et al., 1974), which reflects the internal consistency of the indicators, was above 0.7 for all the constructs except prior systems integration, which attained the recommended value of 0.6 for newly developed scales (Nunally, 1978). These statistics are shown in Table 1.

Testing for Bias: The survey population was IT departments and senior business managers of companies who had adopted ASP systems. 256 usable responses were obtained. Since the data sample was collected from IT users as well as business users, the sample was tested for bias. The two-sample Kolmogrov-Smirnov Z test (Anderson, 1958) found no bias between the responses of the two samples.

The fact that there is no bias between samples drawn from MIS departments and business users should not be seen as a departure from MIS literature that has identified the critical importance of multiple users or organizational stakeholders need to be involved in organizational systems development **(**Ravichandran and Rai, 2000). Since we are concentrating on the medium sized businesses, there is likely to be less divergence in opinion about IT service attributes. For larger organizations there is a greater diversity in opinion about the execution of various IT functions, and business users will have different objectives and expectations from IT users.

Table 1: Scale Development

Const-ructs	Indicators	Std. loading	Std.Error	T value	P value	Indi-cator relia-bility	Com-posite relia-bility
Perceived Provider Perfor-mance	PERF1	0.670	0.078	11.60	<0.01	0.449	0.87
	PERF2	0.711	0.097	12.56	<0.01	0.505	
	PERF3	0.638	0.066	16.92	<0.01	0.408	
	PERF4	0.898	0.061	17.62	<0.01	0.806	
	PERF5	0.829	0.075	15.60	<0.01	0.687	
Maturity of internal IT	MAT1	0.8807	0.116	17.76	<0.01	0.776	0.94
	MAT2	0.956	0.092	20.42	<0.01	0.914	
	MAT3	0.921	0.107	19.13	<0.01	0.848	
Prior Internet usage	INT1	0.604	0.128	9.89	<0.01	0.365	0.82
	INT2	0.826	0.104	14.81	<0.01	0.682	
	INT3	0.807	0.134	14.40	<0.01	0.648	
	INT4	0.682	0.101	13.06	<0.01	0.457	
	INT5	0.508	0.101	13.06	<0.01		
Prior systems integration	SYSINT1	0.2659	dropped	--------	-------		
	SYSINT2	0.504	0.174	6.08	<0.01	0.254	0.60
	SYSINT3	0.652	0.174	6.89	<0.01	0.425	
	SYSINT4	0.568	0.129	5.62	<0.01	0.323	
Discon-firmation	DISCONF1	0.556	0.111	8.97	<0.01	0.309	0.83
	DISCONF2	0.717	0.113	8.81	<0.01	0.296	
	DISCONF3	0.776	0.108	12.39	<0.01	0.514	
	DISCONF4	0.791	0.097	12.07	<0.01	0.494	
	DISCONF5	0.917	0.107	12.64	<0.01	0.529	
	DISCONF6	0.657	0.110	11.01	<0.01	0.431	
Satisfaction with ASP	SATIS1	0.772	0.113	12.33	<0.01	0.596	0.80
	SATIS2	0.729	0.085	16.04	<0.01	0.532	
	SATIS3	0.770	0.080	10.23	<0.01	0.592	
	SATIS4	0.623	0.109	10.75	<0.01	0.388	
	SATIS5	0.648	0.106	13.12	<0.01	0.420	
Functional capability of the ASP	CAP1	0.972	0.141	13.12	<0.01	0.945	0.76
	CAP2	0.667	0.123	9.76	<0.01	0.445	
	CAP3	0.478	0.124	6.71	<0.01	0.228	
Technical service guarantees	TECH1	0.716	0.083	7.16	<0.01	0.513	0.72
	TECH2	0.621	0.083	7.33	<0.01	0.386	
	TECH3	0.667	0.081	9.78	<0.01	0.445	

4.2.2 Testing for Validity

A recommended method to examine the validity of constructs is by assessing the convergent and discriminant validity, which can be established at the multi-method level of analysis by measuring the degree of agreement in responses of the informants to different survey items (Phillips and Bagozzi, 1986). Convergent validity of an indicator is used to assess whether individual scale items are related. A confirmatory factor analysis was performed to test for validity (Bagozzi 1980). The *t* values for all the factor loadings exceeded the critical value of 3.29, at a p level of 0.01, except one item from the scale 'prior systems integration", which was dropped from the analysis. Thus the measures support convergent validity (Anderson and Gerbing, 1988).

Discriminant validity is used to assess if there is a high correlation between instruments used to measure different constructs. Since we have eight constructs, the Chi-Square test is a satisfactory predictor of discriminant validity (Anderson et. al. 1987). Using confirmatory factor analysis, the Chi-Square of the unconstrained model is recorded, which is 688.2249 with degrees of freedom 469. Constrained models were specified where the covariances across a pair of factors were constrained to be 1. In each case, the difference in Chi-Square values between the constrained model and unconstrained model is greater than 10.827, which at a degree of freedom 1 supports significance at a p value of 0.001, indicating that the survey items demonstrate discriminant validity.

4.3 Assessing Potential Over Identification Issues

If the model being tested is over-identified, we may not be able to estimate the model completely. One approach to deal with this problem is to test the over-identifying restriction as a null hypothesis (Kenny, 1979). Since we were able to estimate the complete model we did not have to eliminate any conditions specified. Another recommended method is to check if removing the over-identifying restriction changes significant predictions of the model (Duncan, 1975). We tested a path model that depicts perceived provider performance as an independent construct but uncorrelated with other independent constructs, while satisfaction with ASP is the only dependent construct. While the estimates were different, the results, i.e. the effects of all the constructs on satisfaction with ASP, were similar to the structural model with perceived provider performance as a dependent construct. This mitigates concerns about possible over-identification in the model.

4.4 Model Estimation and Goodness of Fit

The model investigated had eight constructs. Each of the constructs was measured by at least three indicator variables. The model was estimated using AMOS 4.0 and provides a reasonably good fit for the data.

In most empirical analyses, it is a common practices to look for a model with a relatively low chi-square / degrees of freedom ratio (Raghunathan et. al., 1999), rather than an insignificant value. The discrepancy defined as the Chi-Square /degree of freedom was 1.045, and statistically significant. The Chi-square is N - 1 times the minimum value of the fit function and tends to be large in large samples if the model does not hold.

We therefore considered an incremental fit index, the Tucker Lewis index (Tucker and Lewis, 1973), which is a non-normed index (i.e. which is not constrained to lie between 0 and 1) and represents the improvement in the proportion of total covariance among observed variables explained by the estimated model over that explained by the baseline model. We also estimated a non-centrality based parameter, the comparative fit index, which accounts for the fact that a perfect fit is unlikely in the population since some variables are inevitably left out of the model (Bentler, 1990). The comparative fit index provides an estimate in the reduction in model misfit of the estimated model relative to a baseline model. The Root Mean Square error of approximation (Browne and Cudeck, 1993) is a fit measure that takes account of the error of approximation in the population and the precision of the fit measure itself. The Tucker Lewis index for our model was 0.951, the comparative fit index was 0.953, and the RMSEA 0.013, which are in line with the recommended (Hu and Bentler 1999) values of RMSEA below .06 and Tucker-Lewis Index values of .95 or higher. The estimated path model is depicted in Figure 3.

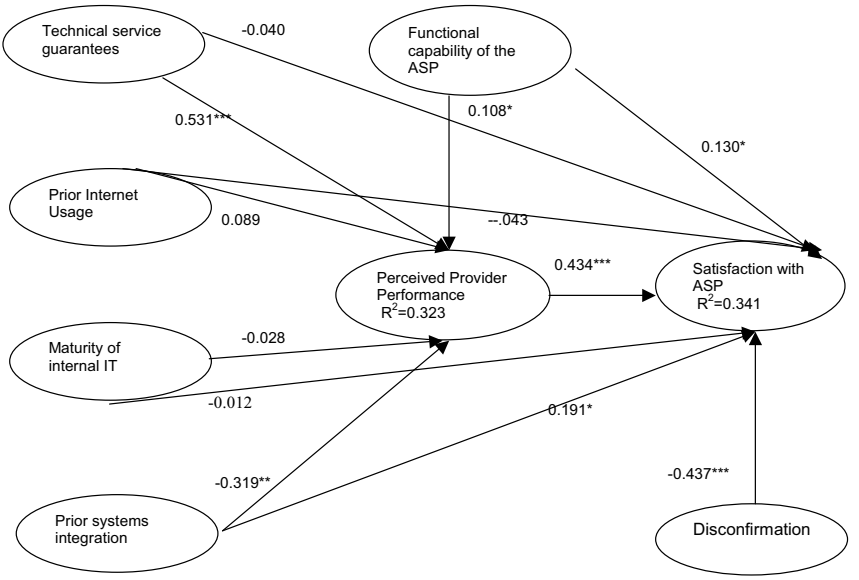


Figure 3: Path Model

Note: Standardized coefficients are reported in the path diagram

* Denotes significance at the 10% level

** Denotes significance at the 5% level and

*** Denotes significance at the 1% level of confidence.

All independent constructs were assumed to be correlated with each other.

4.5 Findings from the Study

The results of the path analysis are listed in Table 2. Our empirical analysis shows that

1. Perceived provider performance has a significant positive relationship with satisfaction, validating H1.
2. Technical service guarantees have a significant positive impact on perceived provider performance, validating H2a.
3. Technical service guarantees do not have a significant impact on satisfaction, contradicting H2b

Table 2: Parameter Estimates of the Path Analysis

Dependent construct	**Independent Construct**	**Coefficient**	**Std. Coefficient**	**Std. Error**	**T**	**P**	**R^2**
Perceived Provider Performance	Prior systems integration	-0.306	-0.319	0.103	-2.986	**	0.319
	Functional Capability of the ASP	0.067	0.108	0.049	1.787	*	
	Technical service guarantees	1.002	0.531	0.228	4.388	***	
	Prior Internet Usage	0.073	0.089	0.065	1.129		
	Maturity of IT	-0.186	-0.028	0.545	-0.341		
Satisfaction with ASP	Perceived Provider Performance	0.626	0.434	0.140	4.465	***	0.355
	Disconfirmation	-0.438	-0.437	0.091	-4.829	***	
	Prior Internet Usage	-0.051	-0.043	0.090	-0.571		
	Maturity of IT	-0.119	-0.012	0.799	-0.149		
	Functional Capability of the ASP	0.117	0.130	0.069	1.704	*	
	Technical service guarantees	-0.109	-0.040	0.297	-0.368		
	Prior systems integration	0.265	0.191	0.153	1.732	*	

*denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level of confidence.

4. Functional capability of the ASP has a significant positive relationship with perceived provider performance, validating H2c.
5. Functional capability of the ASP has a significant positive impact on satisfaction, validating H2d.
6. Prior Internet usage and maturity of internal IT were not found to be significant predictors of either perceived provider performance or satisfaction; our analysis does not find empirical support for H3a, H3b, H3c or H3d.
7. Prior systems integration has a negative impact on perceived provider performance, validating H3e.
8. Prior systems integration has a significant positive relationship with satisfaction, reversing the causality of H3f.
9. Disconfirmation has a significant negative impact on satisfaction with ASP, validating H4a
10. A one tailed t tes-t reveals that disconfirmation has an effect of higher magnitude than perceived provider performance on the satisfaction with ASP, validating H4b.

5 Discussion of Results

5.1 Implications from Findings

In our analysis we have attempted to synthesize the ASP service delivery context with literature on the effects of prior attitudes, expectations, perceived provider performance and disconfirmation on the satisfaction process. Our validation of H1 and H4a can be explained in light of prior literature on CS, which investigates the effect of performance and disconfirmation on satisfaction evaluations. Similarly, our validation of H3e is in line with CS literature on the effect of experience-based norms on performance evaluations.

H2a indicates a need for critical evaluation of software delivery metrics, which can be of importance not only in ASP initiatives, but also in e-commerce and customer relationship management initiatives. In the technological environment that is characterized by uncertainty (e.g., vulnerability to security lapses and network failures, uncertain application delivery over the Internet), even if the ASP offers 99% reliability, at key moments the firm may be unable to access critical applications. It is critical therefore that the ASPs invest in tools and systems that can ensure reliable and adequate service and meet the promised performance to their clients.

H2c reinforces the conclusions of prior literature that has posited that efficient project management (Nidumolu 1996), and reliability and quality (Kekre et. al. 1995) are critical to user firms. The functional capability of an ASP, as inferred by users has an important role in the perceived performance of the ASP, which influences subsequent judgments about satisfaction and reuse of the ASP. H2a and H2c are both significant, a finding that needs to be differentiated from the findings of the consumer satisfaction literature, which has found mixed support for the effect of service expectations on perceived provider performance. H2b is not significant; in line with empirical literature on satisfaction that has found that expectation has weak or insignificant effect on satisfaction ((Oliver 1980, Cadotte et. al. 1987, Tse and Wilton 1988, Pieters et. al. 1995). A likely explanation could be that the expectation effect is being filtered through performance effects on satisfaction outcomes. H2d is significant, indicating that the effect of functional capability on satisfaction points to the importance in understanding attributions made by the consumer on realization of satisfaction.

Our research, in contrast, finds only marginal impact of experience based norms (H3e and H3f are significant, while the others are not) on performance evaluation as well as satisfaction. H3e indicates that the need to be compatible with existing applications limits the extent to which ASP managed IT processes can be integrated with IT the processes in the user organization, and therefore lessens the enhanced technological capabilities that an ASP can confer. The fact that prior systems integration has a positive effect on satisfaction, reversing the causality of H3f has to be interpreted in terms of assimilation effects in the satisfaction process (e.g. Pieters et. al. 1995). The learning implicit in using a new service such as ASP and an understanding of attainable norms in the performance of ASP can lead to a positive impact on satisfaction. Further, users may assign different weights to dimension specific operation of expectancy disconfirmation and perceived performance (e.g. Oliver and Burke 1999). Decomposing attributes along specific dimensions can reveal their differing impacts on satisfaction and performance.

The fact that some experience-based norms are not significant –H3a, H3b, H3c and H3d are not validated- may indicate that ASP users do not consider some of their prior experiences to be appropriate use situations (e.g. Cadotte et. al. 1987) within which an ASP's performance may be assessed. Adopters of innovations experience overt behavior changes favoring the use of the innovation (Agarwal 2000; Rogers, 1983), suggesting that the consumers' evaluate an innovation such as the ASP model of IT service delivery over the Internet, in a manner different from their prior experiences. It has been posited that the implementation process of new technologies spans several stages such as initiation, adoption, adaptation, acceptance, routinization and infusion (e.g. Cooper and Zmud 1990; Kwon and Zmud 1987). However, in a company's transition to ASP services, several different processes such as confirmation and routinization operate simultaneously, which suggests a need for further exploration of referent norms used to evaluate satisfaction with ASP.

We hypothesize (H4b), following prospect theory, that the disconfirmation effect has a higher magnitude than the perceived provider performance on the satisfaction outcome. Our analysis reveals that the disconfirmation effects have a higher magnitude than the perceived performance; and the difference is statistically significant. An explanation can be provided by principles of mental accounting (Thaler 1985) that suggest that consumers use various implicit methods to assign resources to different mental accounts. The disconfirmation that consumers face relates to a process deficiency (Bitner et. al. 1990), i.e. the delivery of the core service may have some flaws. This is different from an outcome failure (Gronroos 1988; Parasuraman et. al. 1985) where the service provider may not fulfill the basic service need. Our finding may indicate a positive perception about the fulfillment of the basic service need but a discontent with the process aspects of service delivery. The services marketing literature does not indicate which types of failures have more influence on satisfaction judgments (Smith et. al. 1999) but it is reasonable to assume that process failures are perceived to be less serious than outcome failures. Thus even though the disconfirmation effects outweigh the effects of performance on satisfaction, our finding implies a degree of satisfaction with the basic service delivered by the ASP. Further, it has been posited that for a continuously provided service, disconfirmation represents an evaluations of disruptions from normal service (e.g. Bolton and Drew 1991). Our finding indicates the need for ASPs to setup efficient service recovery mechanisms, and indeed efficient recovery mechanisms offer a way for providers to convert service failures into opportunities for increasing satisfaction (e.g. Bitner 1990).

Literature has posited that for high involvement products and services performance effects should dominate disconfirmation (Yi 1990; Oliver and Rust 1997). Our finding indicates that this is not so and there is no confirmation effect (Woodruff et. al. 1983, Oliva and Oliver 1995) that can cause a reinforcement of the decision to use the ASP's service. This implication is not very positive for ASPs. Marketing literature suggests that for frequently used services, companies must strive to keep their brands in the forefront of the consumer's mind (Rust and Oliver 2000). Unless ASPs continually provide benefits to their users, the satisfaction with an ASP's service may decay gradually over time, making it likely that consumers switch providers.

5.2 Implications for IS Literature

The functional capability of the ASP is similar to the capability construct of Kekre et. al. (1995) and similar to the competence factor highlighted in service quality literature(e.g. Zeithaml 1990). Reliability has been similarly analyzed in the IS literature but in our discussion we introduce a different dimension of reliability – that of technical service guarantees ensuring service over the Internet. The availability of tools to track performance of SLAs makes it possible for ASPs to

offer technical service guarantees such as SLAs. This suggests that with improved measurement of performance, managers can avail of markets for IT needs, such as using ASP services for needed IT capabilities rather than in-source IT. This contrasts with prior literature (Poppo and Zenger 1998) that argues that changes in measurement accuracy do not affect the choice between firm and market performance.

One of the critical reasons that ASPs may be preferred over internal sourcing is the rapidity of implementation and the ability of the ASP to provide best of the breed IT capabilities, thus reducing the complexity and uncertainty associated with software development. However, organizations also face a lot of external uncertainty that results in volume and behavioral uncertainty in their processes (e.g. Balakrishnan and Wernerfelt 1986), which in turn implies uncertainty in their demands of IT capabilities needed from the ASP. The disconfirmation effect in using ASP services can partly arise from the transaction uncertainty in using the ASP's service. Indeed our conceptualization of disconfirmation reflects this concern for scalability and customer support within the organization. The negative effect of disconfirmation on satisfaction implies the need for a coordinated relationship between the ASP and the organization.

ASPs have internalized specialized IT activities such as maintenance, support and hosting software, which can be a source of routines that yield valuable capabilities (e.g. Kogut and Zander 1992, 1996). The perceived provider performance construct captures the enhanced value to the organization in accessing the specialized IT capabilities of the ASP. Thus our work can provide a knowledge-based explanation for using ASP services.

The literature on contracts stresses the need for vendor reputation as a mechanism to mitigate the asymmetry of information in the outsourcing process. By focusing on the role of SLAs and functional capability of the ASP in the satisfaction with ASP, this research highlights the contracting aspects in the ASP service delivery model. Contracts between ASPs and firms need to be sensitive to the added dimensions of uncertainty and service assurance (e.g. Shavell 1984) apart from other considerations discussed in the outsourcing literature.

6 Conclusions and Directions for Future Research

In this paper, we developed and empirically tested a model of satisfaction with ASP in terms of prior organizational attitudes, expectations about the service, the disconfirmation and perceived provider performance. By positing a service framework of evaluation of IT service initiatives and by analyzing in terms of the consumer satisfaction disconfirmation paradigm we try to look more closely at the service delivery of the ASP solution. Our findings indicate a need for ASPs to

facilitate integration with existing IT in client organizations, ensure superior performance delivery, emphasize rigorous enforcement of SLAs, and ensure that their application meets standards of software capability. The fact that ASPs are not evaluated on some of the prior experiences of the organizations is a favorable finding, since it suggests that firms who are Internet savvy or that have a strong IT department are not going to have unreasonably high expectations from the ASPs.

A related area of exploration is an analysis of how organizational users form expectations about ASP's services. The literature on outsourcing posits that the trade press, discussions with peers, consultants' forecasts and the business strategy pursued by the company (Lacity and Hirschheim 1994) can contribute to the formation of expectations in the outsourcing context. As the IT outsourcing literature has documented, management defines the scope of the outsourcing and the sourcing criteria and the IT department on the other hand, can provide insights on the technological reasons for outsourcing and judge the success of the outsourcing project in terms of performance outcomes that are met (Lacity and Willcocks 1998). Expectations that need to be realized in the outsourcing context may reflect the consensus amongst the different stakeholders in the organization (Lacity and Willcocks 1998). The antecedents and the process of expectation formation are an interesting avenue for future research.

Prior research on customer satisfaction with software products (Kekre et. al. 1995) has posited that concerns about reliability may be stronger at lower levels of satisfaction whereas the capability plays a significant role at higher levels of satisfaction. An empirical estimation of threshold levels in the satisfaction formation can be immensely valuable to ASPs in designing their offerings to improve value to users

The three ring model of service (Clemmer 1992) suggests that consumers may conceptualize the service of the ASP as consisting of basic service, service support and enhanced service. Our conceptualization of expectation based norms focuses on expectations about basic service. As the ASPs mature in their service, we could observe expectations about higher order attributes, such as integration with other applications and expectations about superior performance, migrate into the zone of basic service, raising expectations from ASP services. Future research can analyze the subjective weighting of critical service attributes by means of a longitudinal analysis to determine the process of assigning attribute weights over time.

References

Agarwal, R., "Individual acceptance of information technologies," in Framing the domains of IT Management: Projecting the future through the past, Zmud, R. W. and Price, M. F., eds., 2000, Pinnaflex, Cincinnati: Ohio, pp. 85-104.

Alba, Joseph W. and Wesley Hutchinson, "Dimensions of Consumer Expertise," *Journal of Consumer Research*, 1987, (13:4), 411-54.

Anderson, E. W., C. Fornell, and D. R. Lehman, "Customer satisfaction, Market share and profitability: findings from Sweden," *Journal of Marketing*, 1994, 58, 53-66.

Anderson, J.C. and J. A. Narus, "A model of Distributor firm and Manufacturer Working Relationships," *Journal of Marketing*, 1990, 54 (1), 42-58.

Anderson, E. W., and M. W. Sullivan, "The antecedents and consequences of customer satisfaction for firms," *Marketing Science*, 1993, (12:2), pp. 125-143.

Anderson, T.W., *An introduction to multivariate statistical analysis,* New York: Wiley, 1958.

Anderson, J.C., and Gerbing, D.W., "Structural equation modeling in Practice: A review and recommended two-step approach," *Psychological Bulletin*, (103:3), 1988, pp. 411-423.

Anderson, J. C**,** Gerbing**,** D. W., Hunter, J. E., Kumar, A., Dillon, W. R., "On the Assessment of Unidimensional Measurement: Internal and External Consistency, and Overall Consistency Criteria/Some Further Remarks on Measurement-Structure Interaction and the Unidimensionality of Constructs", *Journal of Marketing Research,* (24:4) 1987, pp.432-444.

Apicella, M., "SLAs: shaking hands is not enough," *Infoworld*, April 2001 (http://www.itworld.com/Man/2679/IWD010430tcsla/).

Bagozzi, R.P., *Causal models in marketing*, New York: Wiley, 1980.

Balakrishnan, S. and Wernerfelt, B, "Technical change, competition, and vertical integration," *Strategic Management Journal*, 1986, 9: 347-359.

Barney, J. B. " Organizational culture: Can it be a source of competitive advantage," *Academy of Management Review*, 1986, (11:3), pp. 656-665.

Baroudi, Jack J. and W. J. Orlikowski, "A Short Form Measure of User Information Satisfaction: A Psychometric Evaluation and Notes on Use," *Journal of Management Information Systems*, 1988, (4: 4), pp. 44-59.

Bearden, W. O. and J. E. Teel, (1983) "Selected determinants of satisfaction and complaint reports," Journal of Marketing Research, (20:1), pp. 21-28.

Bentler, P. M., " Comparative fit indexes in structural models, " *Psychometrika*, 1990, (107: 2), pp. 238-246.

Bessom, R. M. and D. W. Jackson "Service Retailing -A Strategic Marketing Approach," *Journal of Retailing*, 1975, 8, 137-149.

Bharadwaj, A. S., " A resource-based perspective on information technology capability and firm performance: An empirical investigation," *MIS Quarterly*, 2000, (24:1), 169-197.

Bitner, M. J., "Evaluating service encounters: the effect of physical surroundings and employee responses," *Journal of Marketing*, 1990, (54:2), pp.69-82.

Bitner, M. J., Booms, B. H., and Tetreault, M. S., "The service encounter: Diagnosing favorable and unfavorable incidents," *Journal of Marketing*, 1990, (54:1), pp. 71-84.

Bitner, M. J., and Hubbert, A. R., "Encounter Satisfaction Versus Overall Satisfaction Versus Quality: The Customer's Voice," in Service *Quality: New Directions in Theory and Practice*, edited by R. T. Rust and R. L. Oliver (Thousand Oaks, CA: Sage), 1994, pp. 76-77.

Bolton, R. N. "A dynamic model of the duration of the customer's relationship with a continuos service provider," *Marketing Science*, 1998, (17:1), 45-65.

Bolton, R. N. and J. H. Drew, (1991)"A multistage model of customers assessment of service quality and value," Journal of Consumer Research, 17, pp. 375-384.

Booms, B. H. & Bitner, M.J, "Marketing strategies and organization structures for service firms," in J. H. Donnelly and W. R. George (eds.), *Marketing of services*, 1981, pp. 47-51, Chicago: American Marketing Association.

Borck, J. R., "Selecting a good ASP is daunting, but if you find the right factors, the benefits are great," *Infoworld.* (23:12), 2000, pp. 62.

Boulding, W., A. Kalra, R. Staelin, and V. A. Zeithaml, "A dynamic process model of service quality: from expectations to behavioral intentions," *Journal of Marketing Research*, 1993, 30, 7-27.

Broadbent, M., and Weill, P. "The Implications of Information Technology Infrastructure for Business Process Redesign," *MIS Quarterly*, 1999, (23:2), 159-182.

Brown,M.W. and Cudeck, R. 'Alternative ways of assessing model fit,' in K.A.Bollen and J.S.Long eds, *Testing structural equations models*, Newbury Park, CA :Sage Publications Inc, 1993, pp.136-162.

Brown, C. V., and Magill, S. L., "Alignment of the IS functions with the enterprise: Toward a model of antecedents," *MIS Quarterly*, 1994, (18:4), 371-405.

Brown, S. W. and T. A. Swartz, (1989), "A gap analysis of professional service quality," Journal of Marketing, (52:2), pp.92-98.

Caulfield, B. "Cover your ASP," *eCompany Now*,2000, (2:1), pp. 138-139.

Cadotte, E. R., Woodruff, R. B., and Jenkins, R. L., "Expectations and Norms in Models of Consumer Satisfaction," *Journal of Marketing Research*, 24, 1987, pp. 305-314.

Chaudhury, A.; Nam, K., Raghav Rao, H., "Management of information systems outsourcing: a bidding perspective", *Journal of Management Information Systems*, (12:2), 1995, pp.131-160.

Churchill, G. A. and C. Surprenant, "An Investigation into the Determinants of Customer Satisfaction," *Journal of Marketing Research*, 1982, 19, 491-504.

Clemmer, J., *Firing on all cylinders: The service/quality system for high powered corporate performance*, Business One Irwin, Homewood, IL, 1992.

Cooper, R., and Zmud, R., "Information Technology Implementation Research: A Technology Diffusion Approach," *Management Science*, (34:2), 1990, 123-139.

Cronin, Jr. J. J., and S. A., Taylor, "Measuring service quality: A reexamination and extension," *Journal of Marketing*, 1992, (56:3), 55-68.

Cross, J., "IT outsourcing: British Petroleum's competitive approach," *Harvard Business Review*, 1995, (73:3), 94-102.

Cross, J., Earl, M. and Sampler**,** J.L. " Transformation of the IT function at British Petroleum, "*MIS Quarterly*. (21:4), 1997, pp. 401-423.

Dabholkar, Pratibha A (1996), Consumer Evaluation of New Technology-Based Self-Service Options: An Investigation of Alternative Models of Service Quality," *International Journal of Research in Marketing*, 13(1), 29-51.

DeLone, W. H., and E. R. McLean, "Information System Success: The Quest for the Dependent Variable," *Information Systems Research*, 1992, (3:1) pp. 60-95

Dillman, D. A., *Mail and Telephone Surveys: The Total Design Method*, New York: Wiley, 1978.

Donahue, S. "Outsourced and out of mind, " *Business 2.0*, June 1999.

Downes, L, C. Mui and N. Negroponte, *Unleashing the killer app: digital strategies for market dominance*, Cambridge: Harvard Business School Press, 1998.

Duncan, O.D. *Introduction to structural equation models*, New York: Academic Publishers, 1975.

Erfani, S., V. B. Lawrence, and M. Malek, "The management paradigm shift: Challenges from Element management to service management," *Bell Labs Technical Journal*, 5(4): October-December 2000.

Ferengul, C. "Best practices in Web hosting service-level agreements," Meta Group document, January 2002 (http://techupdate.zdnet.com/techupdate/stories/main/0,14179,2843179,00.html).

Folkes, V. S. (1988), "Recent attribution research in consumer behavior: A review and new directions," *Journal of Consumer Research*, 14, pp. 548-65.

Folkes, V. S. S. Koletsky and J. L. Graham, (1987), "A field study of causal inferences and consumer reaction: The view from the airport," *Journal of Consumer Research*, (13: 4), p534-39.

Fornell, C.," A national consumer satisfaction barometer: the Swedish experience," *Journal of Marketing*, 1992, 56, 6-21.

Fornell, C., and Larcker, D.F. "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error," *Journal of Marketing Research,* 1981, 18, pp. 39-50.

Gardial, S. F., D. S. Clemons, R. B. Woodruff, D. W. Schumann, M. J. Burns, "Comparing consumers' expectations of prepurchase and post purchase product evaluation experiences," *Journal of Consumer Research*, 1994, 20, 548-60.

Gardial, S. F., R. B. Woodruff, M. J. Burns, D. W. Schumann and S. Clemons, (1993) "Comparison standards: exploring their variety and the circumstances surrounding their

use," *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, 6, pp. 63-73.

Greengard, S., "What the doctor ordered," Industry Week.Com, June 2000.

Grewal, D., Krishnan, R., Baker, J., & Borin, N. "The effect of store name, brand name and price discounts on consumers' evaluations and purchase intentions," *Journal of Retailing*, 1998, (74:3), 331-52.

Gronroos, C. "New Competition in the Service Economy: The Five Rules of Service," *Internation Journal of Operations and Production Management*, 1988, (8:3), 9-19.

Grover, V., Cheon, M.J., and Teng, J.T.C. "The Effect of Service Quality and Partnership on the Outsourcing of Information Systems Functions," *Journal of Management Information Systems*, 1996, (12:4), pp 89-116.

Grover, V., and Teng, J.T.C. "The Decision to Outsource Information Systems Functions," Journal of Systems Management (44:11) 1993, pp 34-38.

Girishankar, S., "Making it all work," Information Week Online, 2000 (http://www.informationweek.com/790/sstechno.htm).

Hayes, I. S., "A Guide to Implementing an ASP Solution," SoftwareMag.Com, (http://www.softwaremag.com/archive/2000dec/ASP.html December 2000/January 2001).

Heskett, J. L., E. Sasser, and C. Hart, *Service breakthroughs: Changing the rules of the game*, The Free Press, New York, NY, 1990.

Howard, J. and J. N. Sheth, *The Theory of Buyer Behavior*, 1969, Wiley: New York.

Hu, L. and P. Bentler, "Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria Versus New Alternatives" Structural Equation Modeling, 1999, (6:1), 1-55.

Ives, Blake and Margrethe Olson, "User Involvement and MIS Success: A Review of Research," *Management Science*, 1984, (30:5), pp. 586-603.

Jarvenpaa, S. J., and Leidner, D. E., "An information company in Mexico: extending the resource-based view of the firm to a developing country context," *Information Systems Research*, 1998, (9:4), pp. 342-361.

Jude, M. and N. Meachim, "Cleopatra had an ASP," Network World ASP Newsletter, April 5th, 2000 (http://www.nwfusion.com/newsletters/asp/0403asp1.html).

Kahneman, D. and A. Tversky, "Prospect Theory: An Analysis Of Decision Under Risk," *Econometrica*, 1979, 47, pp. 263-291.

Kapadia, N. H., and J. A. B. Fortes, " PUNCH: An architecture for web-enabled wide-area network computing," Cluster Computing: The Journal of Networks, Software Tools and Applications, 1999, (2:2), pp. 153-164.

Kashyap, Rajiv. 2001. "The Effects of Service Guarantees on External and Internal Markets." *Academy of Marketing Science Review (Online).*

Kekre, S., M. S. Krishnan, and K. Srinivasan, "Drivers of customer satisfaction for software products: Implications for design and service support," *Management Science*, 1995, (41:9), pp. 1456-1470.

Keller, K., 1993, "Conceptualizing, measuring, and managing customer-based brand equity," *Journal of Marketing*, (57:1), pp. 1-22.

Kenny, D. *Correlation and causality* New York: Wiley, 1979.

Kogut**,** B. and Zander, "Knowledge of the firm, Combinative Capabilities, and the replication of technology", *Organization Science*, 1992, 3, pp. 383-97.

Kogut**,** B. and Zander, U., "What firms do? Coordination, identity, and learning," *Organization Science* 1996, (7:5), pp. 502-518.

Krishnan, M. S., V. Ramaswamy, M. C. Meyer, and P. Damien "Customer satisfaction for financial services: the role of products, services and information technology," *Management Science*, 1999, (45:9), pp. 1194-1209s.

Kwon, T.H. & Zmud, R.W, "Unifying the fragmented models of information systems Implementation," in *Critical Issues in Information Systems Research*, 1987, Boland, R.J., and Hirschheim, R.A., eds, John Wiley & Sons, pp. 227-251.

Lacity, M. C. and R. A. Hirschheim, (1994), "Realizing outsourcing expectations," *Information Systems Management*, (11:4), pp. 7-18

Lacity, M. C. and L. P. Willcocks, (1998), "An empirical investigation of information technology sourcing practices: Lessons from experience," *MIS Quarterly*, (22:3), pp. 363-408

Landgrave, T., "Understanding the ASP evolution," *CIO Magazine*, February 2002, (http://www.techrepublic.com/article_guest.jhtml?id=r00520020221lan01.htm).

LaTour, S. A. and Peat, S. C., "Conceptual and methodological issues in consumer satisfaction research," *Advances in Consumer Research*, 1979, W. L. Wilkie, Ann Arbor, 431-437.

Lee, H. L. and C. Billington, (1993) "Material Management in Decentralized Supply Chains," *Operations Research*, (41: 5), pp. 835-847.

Lee, J.-N., and Kim, Y.-G. "Effect of Partnership Quality on IS Outsourcing: Conceptual Framework and Empirical Validation," *Journal of Management Information Systems* (15:4) 1999, pp 29-61.

Lee, C. and D. Siewiorek" An Approach for Quality of Service Management", Working Paper, Computer Science Department, Carnegie Mellon University, 1998, CMU-CS-98-165.

Loh, L. and Venkatraman, N, (1992)"Determinants of information technology outsourcing: A cross-sectional analysis", *Journal of Management Information Systems* (9:1), pp.7-24.

Long, J. S. C*onfirmatory factor analysis: A preface to LISREL*. Sage university paper series on quantative application in social sciences, Beverely Hills: Sage, 1983, pp. 7-33.

Mahoney, J. T; Pandian, J. R., " The Resource-Based View Within the Conversation of Strategic Management," *Strategic Management Journal*, 1992, (13: 5), pp. 363-380.

McFarlan, F.W., and Nolan, R.L. "How to Manage an IT Outsourcing Alliance," *Sloan Management Review* (36:2) 1995, pp 9-23.

Mears, Jennifer, " Net provider sold on ASP model, " *Network World* (18: 14), 2001, pp.29-30.

Mittal, V., P. Kumar, and M. Tsiros, "Attribute-level performance, satisfaction and behavioral intentions over time: A consumption system approach," *Journal of Marketing*, 1999, 63, 88-101.

Nidumolu, S. "The effect of coordination and uncertainty on software project performance: Residual performance risk as an intervening variable." *Information Systems Research* (6:3), 1995, pp.191-219.

Nunnally, J. C., *Psychometric Theory*, McGraw Hill, New York, 1978.

Olashavsky, R. W., and Miller, J. W., "Consumer expectations, product performance and perceived product quality," *Journal of Marketing Research*, 1972, 9, 19-21.

Oliva, T. A., and R. L. Oliver, "The relationships among customer satisfaction, involvement and product performance: A Catastrophe Theory Application," *Behavioral Science*, 1995, (40: 2), pp. 104-132.

Oliva, T. A., Oliver, R. L., and MacMillan, I. C. "A Catastrophe Model for Developing Service Satisfaction Strategies," *Journal of Marketing*, 1992, (56:3), pp. 83-95.

Oliver, R. L., "Effect of expectation and disconfirmation on postexposure product evaluations: an alternative interpretation," *Journal of Applied Psychology*, 1977, 62, 480-6.

Oliver, R. L., "A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions," *Journal of Marketing Research*, 1980, (17: 4), pp. 460- 469.

Oliver, R. L. (1989), "Processing of the Satisfaction Response in consumption: A suggested framework and research propositions," Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior, 2, 1-16.

Oliver, R. L., "Cognitive, affective and attribute bases of the satisfaction Response," *Journal of Consumer Research*, 1993, (20: 3), pp. 418-30.

Oliver, R. L., "Varieties of value in the consumption satisfaction response," *Advances in Consumer Research*, 1996, 23, pp. 143-47.

Oliver, R. L and Burke, R., R, "Expectation Processes in Satisfaction Formation: A Field Study," *Journal of Service Research*, 1999, (1: 3), pp. 196- 214.

Oliver, R. L., and DeSarbo, W. S., "Response Determinants in Satisfaction Judgments," *Journal of Consumer Research*, 1988, 14, pp. 495-507.

Oliver, R. L., and R. Rust, "Customer Delight: Foundations, Findings, and Managerial Insight, " *Journal of Retailing*, 1997, (73: 3), pp. 311-36.

Oliver, R. L. and Swan, J. E., (1989), "Equity and Disconfirmation perceptions as influences on merchant and product satisfaction," Journal of Consumer Research, (16:3), pp 372-383.

Olson, J. C. and Dover, P. "Effects of expectation creation and disconfirmation on belief elements of cognitive structure," *Advances in Consumer Research*, 1976, 3, Anderson, B. B. ed, Association for Consumer Research: Chicago.

Parasuraman, A. Berry, L. L., and Zeithaml, V. A., "Understanding customer expectations of service," *Sloan Management Review*, 1991, (32:3) pp. 39-48.

Parasuraman, A. Zeithaml, V. A and Berry, L. L, "A Conceptual Model of Service Quality and Its Implications for Future Research," *Journal of Marketing*, 1985, (49:4), pp. 41-50.

Paul, L.G., "The ASP Phenomenon," *Network World*, Feb 7th, 2000 (http://www.nwfusion.com/research/2000/0207asp2.html).

Peeters, G. & Czapinski, J. (1990). Positive-negative asymmetry in evaluations: The distinction between affective and informational effects," In W. Stroebe & M. Hewstone (Eds.), *European Review of Social Psychology* (pp. 33-60). New York: Wiley.

Peterson, R. A. and Wilson, W. R., "Measuring consumer satisfaction: fact and artefact," *Journal of the Academy of Marketing Science*, 1992, (20:1), 61-71.

Phillips, L.W. and Bagozzi, R.P. 'Assessing Measurement Error in Key Informant Reports: A Methodological Note on Organizational Analysis in Marketing," *Journal of Marketing Research*, 1986, 18, pp.395-415.

Pieters, R. Koelemeijer, K. and H. Roest, "Assimilation processes in service satisfaction formation," *International Journal of Service Industry Management*, 1995, (6:3), pp. 17-33.

Poppo, L., and Zenger, T. "Testing Alternative Theories of the Firm: Transaction Cost, Knowledge-based, and Measurement Explanations for Make-or-buy Decisions in Information Services," *Strategic Management Journal,* 1998, (19:9), pp 853-77.

Prakash, V. and W.J. Lounsbury, "A reliability problem in the measurement of disconfirmation of expectations," in Advances in Consumer Research, ed. P. R. Bagozzi and M. A. Tybout, Ann Arbor: MI, Association for Consumer Research, 1983, 10, pp. 244-249.

Pring, B. "Commentary: Jamcracker's ASP vision," Gartner Viewpoint, CNet News, February 11, 2002 (http://news.com.com/2009-1017-834582.html?tag=st.ne.ni.gartnerbox.gartnercomm).

Raghunathan**,** B., Raghunathan**,** T S. Tu, Q. "Dimensionality of the strategic grid framework: The construct and its measurement, *Information Systems Research*. (10:4), 1999, pp. 343-55.

Ravichandran, T. Rai, Arun, "Quality management in systems development: An organizational system perspective," *MIS Quarterly.* (24:3), 2000, pp. 381-415.

Rathnam, S. Mahajan, V. and Whinston, A.B. W., "Facilitating coordination in customer support teams: A framework and its implications for the design of information technology," *Management Science*, 1995, (41:12), pp. 1900-1921.

Richmond, W. B., Seidmann, A., Whinston**,** A. B. **"**Incomplete Contracting Issues in Information Systems Development Outsourcing, "*Decision Support Systems.* (8:5), 1992, pp. 459-77.

Rogers, E., *Diffusion of innovations,* The Free Press, New York, 1962.

Russo, J. E. and B. Dosher, "Strategies for Multiattribute Binary Choice," Journal of Experimental Psychology: Learning, Memory and Cognition, 1983, 9, 679-696.

Rust, R. T. and Oliver, R. L., "Should we delight the customer," Journal of the Academy of Marketing Science, 2000, (28:1), 86-94.

Rust, R. T., A. J. Zahorick, and T. L. Keiningham, "Return on quality (ROQ): Making service quality financially accountable," Journal of Marketing, 1995, (59:2), pp. 58-70.

Sambamurthy, V., and Zmud, R., "Arrangements for Information Technology Governance: A Theory of Multiple Contingencies," *MIS Quarterly*, (23:2), 1999, pp.261-90.

Shavell, S., "The Design of Contracts and Remedies for Breach, " *Quarterly Journal of Economics*, (99:1), 1984, pp. 121-48.

Shimp, T.A. & Bearden, W.O.," Warranty and other extrinsic cue effects on consumers'.

risk perceptions, " *Journal of Consumer Research*, 1982, 9, 38-46.

Shostack, L., "Planning the Service Encounter," in J. Czepiel, M. Solomon and C. Surprenant, eds. *The Service Encounter*, Lexington Books, New York, 1985.

Smith, A. K., R. N. Bolton and J. Wagner, (1999)," A model of customer satisfaction with service encounters involving failure and recovery," *Journal of Marketing Research*, (36:3), pp. 356-72.

Spreng, R., Mackenzie, S. and Olashavsky, R."A reexamination of determinants of customer satisfaction," *Journal of Marketing*, 1996, 60, pp. 15-32.

Swan, John E. and Richard L. Oliver, "Postpurchase Communications by Consumers," *Journal of Retailing*, 65, 1989, pp. 516-33.

Swan, J. E., and Trawick, I. F., "Disconfirmation of Expectations and Satisfaction with a Retail Service," *Journal of Retailing*, 1981, (57:3), pp. 49-67

Taylor, S. and Todd, P. "Assessing IT Usage: The Role of Prior Experience," *MIS Quarterly* 1995, (19:4), pp.561-570.

Teas, R. K. (1994), "Expectations as a comparison standard in measuring service quality: an assessment of a reassessment," Journal of Marketing, (58:1), pp. 132-139.

Teng, J.T.C., Cheon, M.J., and Grover, V. "Decisions to outsource information systems functions: testing a strategy-theoretic discrepancy model," Decision Sciences, 1995, (26:1), pp 75-103.

Thaler, R "Mental accounting and consumer choice," *Marketing Science*, 1985, (4:3), pp 199-213.

Thibaut, J. W., and Kelly, H.H., *The social psychology of groups*, John Wiley and Sons, New York, NY 1959.

Tolman, E. C, *Purposive behavior in animals and man*, 1932, New York: Century.

Tornatzky, L. G. and K. J. Klein, "Innovation Characteristics and Innovation Adoption-Implementation: A Meta-Analysis of Findings." *IEEE Transactions on Engineering Management* 1982, (29:1), pp. 28-45.

Tse, D. K., and Wilton, P. C., "Models of Consumer Satisfaction formation: An extension," *Journal of Marketing Research*, 1988, 25, pp. 204-12.

Tucker, L.R. and C. Lewis, 'A reliability coefficient for maximum likelihood factor analysis,' *Psychometrika*, 1973, (38:1), pp.1-10.

Vizard, M., "EDS looks to extend reach with ASP model, " *Infoworld.* (22:46), 2000, pp. 16.

Voss, G. B., Parasuraman, A. and Grewal, D. "The roles of price, performance and expectations in determining satisfaction in service exchanges," *Journal of Marketing*, 1998, (62:4), 46-61

Wainewright,P. "ASP Insider: an application service primer", April 22, 1999, *ASPNews.com* .

Werts, C.E., Linn, R.L, and Joreskog, K.G., "Interclass reliability estimates: testing structural assumptions," *Educational and Psychological measurement*, (34:1), 1974, pp. 25-33.

Westbrook, R. A. (1987) "Product consumption-based affective responses and post purchase processes," Journal of Marketing Research, 24: 258-270.

Westbrook, R. A. and M. D. Reilly, (1983), "Value-precept disparity: An alternative to disconfirmation of expectations theory of consumer satisfaction," in Advances in Consumer Research, 10, pp. 256-261

Wilton, P. C. and T. K. Tse, "A model of consumer response to communication and product experiences," in *Advertising and Consumer Psychology*, A. Woodside and L. Percy, eds, 1983,Lexington, MA, pp. 315-32.

Wittmann, A. "The survivor's guide to 2001: Service Providers and Outsourcing," *Network Computing*, December (http://www.networkcomputing.com/1125/1125service1.html).

Woodruff, R. B., Cadotte, E. R., and Jenkins, R. L., "Modeling Consumer Satisfaction Processes Using Experience-Based Norms, " *Journal of Marketing Research*, 1983, (20:3) pp. 296-304.

Yi, Youjae, "A Critical Review of Consumer Satisfaction," in *Review of Marketing* 1990, V. A. Zeithaml, ed., Chicago, IL: American Marketing Association, 1990, pp. 68-123.

Zeithaml, V. A., L. L. Berry, and A. Parasuraman, "The Nature and determinants of Customer Expectations of Service," *Journal of the Academy of Marketing Science,* 1993, (21:1), pp. 1-12.

(1996) "The behavioral consequences of service quality," Journal of Marketing, (60:2), pp. 31-46

APPENDIX

Survey Instruments

Initial unstructured questionnaire

Q.1: Are you familiar with the term application service provider (ASP)? How would you define an ASP?

Q.2: Is there a common set of criteria that your company uses to evaluate ASPs, regardless of the specific application being considered for outsourcing? (IF YES) What is that criteria?

Q.2: Is the Return on Investment (ROI) strictly financial, or are there other benefits that justify the decision to outsource an application to an ASP?

Q.3: What are the internal factors that constitute a barrier to outsource to an ASP?

Q. 4: Does your company currently use the Internet to transact with customers and / or suppliers?

Q. 5: Does your company currently use the Internet in organizational processes?

Q. 6: What do you perceive to be the drawbacks in outsourcing to ASPs?

Q. 7: When did you decide to outsource to an ASP? Do you intend to continue outsourcing to an ASP for the next 12 months? (IF YES) Why do you want to continue using ASP services?

FINAL QUESTIONNAIRE

Question 1: Are you someone who works for or involved in decisions regarding the business applications for your company?

Question 2: Are you familiar with the term 'Application Service Provider?'

Question 3: How would you define an application service provider?'

Question 4: How would you describe your current occupation? Choose from below:

MIS: IT, Computer, Networking

Non- MIS Executive

Director, Manager, Supervisor,

Staff (Describe the department associated with and job title) _____

When did your organization implement ASP services?

I Perceived Provider Performance

How much do you agree or disagree from your experience with an ASP that the following objectives have been achieved?

Questions	Strongly Disagree	Disagree	Slightly Disagree	Neither disagree nor agree	Slightly Agree	Agree	Strongly Agree
Low implementation and service costs	1	2	3	4	5	6	7
Access to best technology	1	2	3	4	5	6	7
Better maintenance support	1	2	3	4	5	6	7
Ability to implement IT solutions rapidly	1	2	3	4	5	6	7
Ability to integrate information from various functional applications	1	2	3	4	5	6	7

II Satisfaction with ASP

How much do you agree or disagree with the following statements indicating your company's satisfaction with the ASP and indicate your desire to continue using an ASP?

	Questions	Strongly Disagree	Disagree	Slightly Disagree	Neither disagree nor agree	Slightly Agree	Agree	Strongly Agree
1	My company's senior management is satisfied with security and privacy offered by the ASP	1	2	3	4	5	6	7
2	My company's senior management is willing to share workload and information with an ASP	1	2	3	4	5	6	7
3	My company's MIS department is satisfied with the security and privacy offered by the ASP	1	2	3	4	5	6	7
4	Our MIS is willing to share workload and information with an ASP	1	2	3	4	5	6	7
5	Overall, I am satisfied with the ASP's way of implementing IS projects	1	2	3	4	5	6	7

III Prior Internet Usage of the Organization

Please answer these questions about the Internet capabilities of your organization prior to implementing ASP services.

Please choose between these responses

0%	1
1 – 25%	2
26 – 50%	3
51 – 75%	4
76 – 100%	5

	Questions	Value				
1	Of your company's revenues, what percentage is generated from direct online orders?	1	2	3	4	5
2	What percentage of your procurement of MRO items (e.g., supplies, maintenance, etc.) is done online?	1	2	3	4	5
3	What percentage of your production goods (e.g., raw materials or components for manufacturers, finished goods for distributors and retailers) is procured online?	1	2	3	4	5
4	What percentage of service requests is resolved electronically?	1	2	3	4	5
5	What percentage of your new customers was acquired online?	1	2	3	4	5

IV Prior Systems Integration

How much do you agree or disagree with the following statements about your company's installed technological systems, prior to outsourcing?

	Questions	Strongly Disagree	Disagree	Slightly Disagree	Neither disagree nor agree	Slightly Agree	Agree	Strongly Agree
1	Our systems allow continuous monitoring of order status at various stages in the process	1	2	3	4	5	6	7
2	Our systems can easily transmit, integrate, and process data from suppliers, vendors, and customers	1	2	3	4	5	6	7
3	Employees can easily retrieve information from various databases for decision support	1	2	3	4	5	6	7
4	Data is easily shared among internal systems in my company	1	2	3	4	5	6	7

Note: The first item was dropped since it did not have a significant t value

V Maturity of Internal IT

How much do you agree or disagree with the following statements about the advantages of internal development of IT systems as opposed to ASPs?

	Questions	Strongly Disagree	Disagree	Slightly Disagree	Neither disagree nor agree	Slightly Agree	Agree	Strongly Agree
1	Internal development offers a better way than ASP to get needed IT functionality	1	2	3	4	5	6	7
2	Internal development is better than ASP if we want to be less vulnerable to network failures	1	2	3	4	5	6	7
3	Internal development offers less of a threat of IT solution being obsolete than ASP	1	2	3	4	5	6	7

VI Disconfirmation

From your experience with ASP, how much do you agree or disagree that outsourcing to an ASP was better or worse than expected for the following factors? Strongly disagree indicates better than expected and strongly agree indicates worse than expected experience with ASP

	Questions		Strongly Disagree	Disagree	Slightly Disagree	Neither disagree nor agree	Slightly Agree	Agree	Strongly Agree
1	Long implementation period	1	2	3	4	5	6	7	
2	Overlap of existing capabilities	1	2	3	4	5	6	7	
3	Obsolete IT solution	1	2	3	4	5	6	7	
4	Vulnerability to network problems	1	2	3	4	5	6	7	
5	Security record of ASP	1	2	3	4	5	6	7	
6	Loss of control over information	1	2	3	4	5	6	7	

VII Functional Capability of the ASP

How much do you agree or disagree that the following factors are important when you decide to outsource business applications to a specific application service provider?

	Questions	Strongly Disagree	Disagree	Slightly Disagree	Neither disagree nor agree	Slightly Agree	Agree	Strongly Agree
1	ASPs should support all our business application outsourcing needs	1	2	3	4	5	6	7
2	ASPs should be profitable and stable companies	1	2	3	4	5	6	7
3	ASPs should have experience in my industry or vertical market	1	2	3	4	5	6	7

VIII Technical Service Guarantees

How much do you agree or disagree the following technical service guarantees are important for you when you decide to contract out services to a specific application service provider?

	Questions	Strongly Disagree	Disagree	Slightly Disagree	Neither disagree nor agree	Slightly Agree	Agree	Strongly Agree
1	ASPs should have tracking tools and systems to prove SLA (Service Level Agreements) achievement	1	2	3	4	5	6	7
2	ASPs should have SLAs on network reliability and security.	1	2	3	4	5	6	7
3	ASPs should have SLAs on application response time	1	2	3	4	5	6	7

Developing a Sustainable Value Proposition in Web Services: Lessons from Strategic Management

Wendy L. Currie

Warwick Business School, University of Warwick, Coventry, CV47AL, UK, Wendy.currie@wbs.ac.uk, +44 (0) 24 7652 4262, +44 (0) 24 7652 4539

Mihir A. Parikh

Department of Management Information Systems, University of Central Florida, 4000 Central Florida Blvd., BA-1:320, Orlando, FL 32816-1400, USA, mihir.parikh@bus.ucf.edu, (407) 823-5374 (Tel), (407) 823-2389 (Fax)

1 Introduction

One of the salient lessons from the dot.com era was the realisation that the business rules of the 'new' (Internet) economy were no different from the 'old' economy, even though many pundits claimed otherwise. Despite large venture capital funding of eBusiness start-ups, many of which stylising themselves as software-as-a-service firms (i.e. application service providers), very few achieved business success, measured by revenue generation and profit maximisation (Cassidy, 2002). In fact, many of these start-ups concentrated instead on developing their 'brand' by spending large sums of money on advertising campaigns, with little emphasis on whether their products or services were attractive to potential customers. As the dot.coms began to fail, not having won enough paying customers to sustain their business models, venture capital firms decided not to offer second-round funding. This resulted in the dot.com crash with many investors becoming sceptical about the business potential of the Internet and associated emerging technologies.

Following the fallout of the dot.coms, attention has focused upon more practical issues of how to develop and sustain eBusiness models (Currie, 2004). With the convergence of the telecoms and software industries to develop a service-oriented architecture (SOA) where firms will increasingly source their software applications from external service providers, the lessons from the dot.com crash will become more relevant. In this chapter, we explore these issues by examining

the emerging technology of Web services. Our interest is on a vendor perspective with the aim of evaluating how Web service firms design and develop their eBusiness models to compete in this fast changing and dynamic marketplace. We suggest that, rather than restricting our analysis to the technical imperatives of Web services, a more fruitful approach is to relate our discussion to the strategic management literature. Our intention is to demonstrate the complexities of the Web services model by undertaking a market and firm analysis, rather than the narrow focus on specific key performance indicators. We develop a conceptual model, which incorporates three important elements of competitive advantage: market leadership, strategic differentiation, and revenue generation. We suggest that, in the absence of one or more of these elements, Web services firms are unlikely to survive. The means of achieving them will depend upon the careful design and execution of a business strategy, which will involve strategic choices related to market positioning, products and services, and cost structure. The transition from strategic choice to market leadership, however, will depend upon how the firm leverages its business through developing partnerships/alliances, integration and pricing models, which are attractive to its customers. The purpose of this conceptual model is to offer a template for Web services firms for competing in this volatile marketplace. How they develop their market, business and technical strategies will depend upon a complex balancing act between competing and conflicting factors. For example, the choice between developing a relationship building business where software products and services are customised for the client, or one which is purely a commodity-driven business, with distant relationships with customers (Carr, 2003).

This chapter is divided into four parts. We begin with an overview of the Web services model and ask whether it offers a new paradigm for business. Next, we introduce our conceptual model, which links the strategic management, eBusiness and IT literature streams. We then introduce the three pillars of competitive advantage: market leadership, strategic differentiation, and revenue generation. Finally, we conclude by offering some new research directions for investigating how Web services firms can generate business value for their customers.

2 Web Services: A New Paradigm for Business?

Web services are emerging as a novel paradigm for connecting business processes independent of their underlying implementation. They promise to tackle the perennial problem of integrating disparate software applications within and across geographical and organizational boundaries. In the past, consistent implementation was necessary to enable distributed application interactions. Now, Web services enable the construction of new composite applications using business functions from other internal or external applications without being dependent on an

implementation. Built upon existing web protocols and open standards, Web services could integrate disparate technology platforms and applications relatively cheaply. So the benefits for organizations undergoing business process changes and mergers & acquisitions could be significant.

Web services offer business value to customers in many unique ways. First, they enable organizations to move from traditional vertical corporations, which control their own supply chains, to networked organizations relying on upstream and downstream connectivity with other organizations. This will facilitate the outsourcing of business processes. This new IT outsourcing model is based upon an extended enterprise view of industry and commerce, where customers will procure software applications using a utility based pricing model. Second, based on open standards for integration, Web services enable organizations to connect new and legacy applications seamlessly, providing smooth and fast flow of information across the organization and its supply-chain. This service-oriented architecture (SOA) will offer the next-generation of Internet applications using a distributed computing architecture, which will be an improvement upon the first phase of the ASP model where limitations to connectivity (i.e. the absence of broadband technology) meant that many potential customers rejected the ASP model. Third, Web services enable greater integration between existing 'legacy' software applications and 'new' Internet technology. Enhanced integration will help reduce the costs by eliminating the need to develop separate interfaces among systems. Some commentators have estimated savings of up to 20 per cent (Hagel 2002). Falling interaction costs and greater operational flexibility enabled by Web services may lead to the unbundling of business processes as specialist firms offer more attractive options for business process outsourcing (BPO) than is the case by retaining the work in-house.

IDC analysts estimate the market for Web services to grow to $21 billion by 2007 in the US and $7 billion by 2007 in the Western Europe (Martinez and Weir 2003; Picardi and Seymour 2002). Yet for the Web services firms to develop and prosper in an intensely competitive environment, where potential customers remain cautious about the promises of IT services firms, suggests that numerous challenges lie ahead. The most significant challenge will be to develop a sustainable value proposition, which offers significant business benefits for customers, while securing their own medium to long term survival. In the next section, we address the inter-linking factors that help build a sustainable value proposition in Web services.

3 Key Factors for Sustaining Value in Web Services

As many entrepreneurial and established firms rise to take advantage of opportunities in Web services, we believe a considered approach is necessary in

the light of recent fallouts in the IT applications outsourcing services industry. The first-phase of the software-as-a-service business model saw the emergence of ASPs, which offered web-hosted software applications on a one-to-many model, priced on a subscription basis. Unfortunately, this business model was inherently flawed, as potential customers were reluctant to procure mission-critical software applications over unsecured networks and did not perceive any real business benefits in deploying commodity-based applications (i.e. travel and expenses, etc). Research studies further reported many shortcomings of the ASP model, such as, poor customer satisfaction from ASPs (Susarla et al. 2003); the failure of ASPs to penetrate the intended small and medium enterprises markets (SMEs) (Hagel 2002); few customer reference sites or market leaders in the ASP space (Currie et al. 2004); the lack of strategic differentiation among ASPs (Kern and Willcocks 2002); customer perceptions about the relative lack of economic benefits from the ASP model (Currie et al. 2004); concerns about service level delivery and integration of legacy systems with ASP offerings (Susarla et al. 2003); questionable short to medium term viability of ASPs (Kern and Willcocks 2002); and a failure of ASPs to achieve sustainability through their inability to generate revenues from the pay-as-you-go pricing model (Currie and Seltsikas 2001). Whilst these studies pertain to the ASP model, current and future IT services firms must learn from the mistakes of past failures, if they are to avoid experiencing the same fate. This is even more crucial in an environment of poor returns to customers from their e-business investments, coupled with the public demise of numerous dot.coms.

Developing a sustainable value proposition from emerging technology-based Web services is a complex phenomenon. It involves simultaneous presence and inter-working of various endogenous and exogenous business factors. While Web services offer to fundamentally transform traditional vertical firms to networked firms through the integration of disparate external and internal IT systems, Web services firms will need to develop their business models to achieve three important goals for sustainability: market leadership, strategic differentiation and revenue generation. Potential customers will need to be convinced that software-as-a-service, as opposed to a product offering, is an attractive solution with identifiable business benefits. While some Web services firms tout the revolutionary nature of their business models and services, in light of the failure of ASPs, we believe an evolutionary approach to developing a value proposition based on a combination of time-tested elements and underlying business needs is more appropriate and sustainable.

Through our extensive research, we identify six key determinants—market positioning, partnerships/alliances, products/services, integration, cost structure, and pricing models—that influence three important business outcomes which are essential for competitive advantage in Web services—market leadership, strategic differentiation, and revenue generation (Currie and Parikh 2005). We borrow from three inter-related literature sources – strategic management, e-business, and IT

management – to gain a deeper insight. We primarily adopt a supply-side perspective using the business model as the main unit of analysis. In doing so, we evaluate the value creation from a vendor perspective. It has been shown that research in IT services has primarily concentrated on the client side (Levina and Ross 2003), leaving the vendor perspective largely under-examined. The value for clients in IT services is partly realized through the strategies and actions of the service providers. A focus on this critical aspect in the provision and management of an emerging technology is necessary.

Our conceptual model is presented in Figure 1. This model may be viewed as a heuristic device to enhance our understanding of the complex array of competing and conflicting factors, which comprise an eBusiness model.

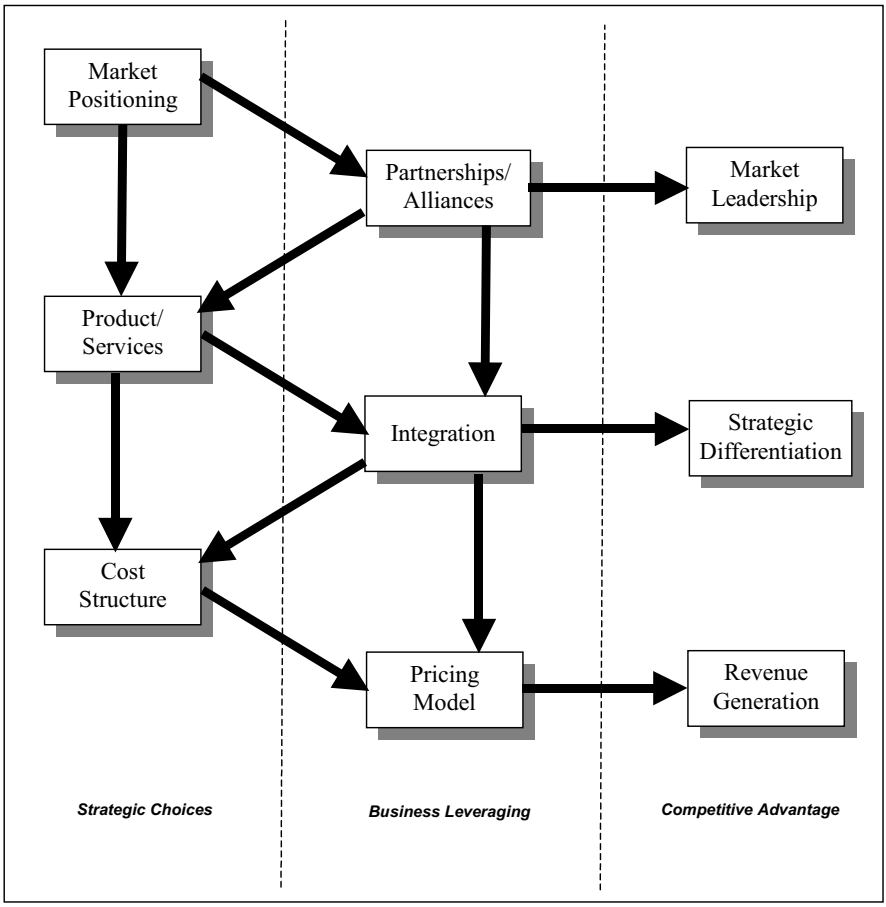


Figure 1: Inter-linking of Factors for Sustaining Value (Currie and Parikh 2005)

Although our discussion is related to the Web services sector, our model is generic and therefore adaptable to other business model scenarios. Even within the Web services sector, the importance of each attribute of the model may vary according to market and firm characteristics. For example, partnerships and alliances may be more important for a start-up firm to enhance strategic differentiation of products and services than a large firm which may already have established partnerships. The large firm may therefore be more concerned to evaluate its portfolio of products and services to make adjustments to its cost structure. One such strategy may therefore be to engage in more outsourcing with a view to reduce costs and enhance revenue generation. So while the conceptual model offers a template for building and evaluating a Web services business, each firm will need to prioritise the range of decision options available.

4 Three Pilars of Competitive Advantage

Our observations of the dot.com boom show that hype and optimism obscured sound business judgement about the potential of many start-up and established firms to develop eBusiness initiatives. Venture capital firms rushed to invest in 'silver bullet' emerging technologies, and this was echoed by institutional and individual investors, believing that Internet-based firms would be more profitable in the short to medium term than large, established firms. Coupled with this, many individuals resigned from their relatively secure employment with existing firms to join the dynamic and exciting world of the dot.coms. In Silicon Valley, people came from all over the United States and beyond to join the 'get rich quick' eBusiness initiatives. This activity was at its height between 2000 and 2001, increasingly the price of real estate for both commercial and residential property. Whilst many people were caught up in the optimism of this period, a more rational and realistic analysis of the business potential of the dot.coms suggested that supply exceeded demand by a wide margin. Firms such as ASPs, with the message that customers would increasingly demand software-as-a-service, priced on a subscription (i.e. pay-as-you-go) model, found few customers willing to adopt the ASP model. Yet potential demand suggested otherwise. On a closer examination, the service providers were failing in three important areas.

First, there were no identifiable market leaders in the software-as-a-service domain. Large firms like Microsoft, Sun Microsystems and others had not fully committed to the Internet as a channel through which the majority of software applications would flow. Equally, large Enterprise Resource Planning (ERP) vendors had built their business models on selling packaged enterprise software applications. To move to a hosted model was a significant change to their established business model. While these firms (i.e. SAP, Peoplesoft, JD. Edwards, etc) all developed eBusiness offerings, the real challenge was to convince

potential customers they had a business need for 'vanilla ERP' software applications delivered via a hosted (remote) channel.

Alongside these firms, numerous start-ups emerged within the software-as-a-service space. These firms believed they could overtake the more established firms through agility and Internet-related capabilities. Whereas the large firms would find it difficult to adapt their business models to the Internet, the start-ups would be developed around the 'pure-play' model, i.e. where all their products and services would be Internet-based. Despite the hype surrounding the Internet, and all its potential to change the way customers would procure and use software applications, the software-as-a-service business model failed to take off. By 2001, there were no market leaders among the numerous firms occupying this space. Many large firms, i.e. Cable & Wireless, which had set up a subsidiary called a-Services™ to offer web-enabled software applications, decided to close down. Similarly, J.D. Edwards terminated its JD sourcing venture, and many of the start-ups, i.e. Aristasoft, Wyzdom.com, eCarisma.com, went out of business. The dot.coms appeared to close down almost as quickly as they had set up, i.e. overnight. The failure to develop market leadership was largely because few established firms had fully committed to supporting the software-as-a-service model. Equally, the convergence between the telecoms and software industries was still occurring, which meant that the technical impediments of delivering web-enabled software applications needed to be overcome. Potential customers were also confused about the mixed messages about the benefits and risks of software-as-a-service, with many believing that transporting data over the Internet amounted to a serious security problem. To some extent, this was a legitimate concern as many start-ups focused upon their marketing campaigns rather than convincing potential customers that the hosted software delivery model could be offered at minimum risk.

Second, the software-as-a-service market was characterised by a failure of service providers to strategically differentiate their products and services from those of their competitors. While some service providers attempted to develop domain expertise (i.e. within a specific vertical sector like health or retail), others adopted a strategy to become full service providers (i.e. firms offering a range of hosted software applications). Whereas some firms gained traction from their selected strategy, none successfully managed to differentiate themselves from their competitors.

Third, the failure to generate revenues was a major shortcoming of most firms, whether start-up or established firm. To a large extent, the venture capital firms were remiss in evaluating the business plans of many start-ups, focusing too much attention on how the brand would be developed rather than on how these firms would generate revenues and profits. In the case of commodity businesses, the accent was on scalability (i.e. offering a one-to-many service with little or no customisation). Unfortunately, many potential customers were more interested in evaluating the scope of products and services (i.e. how hosted software

applications would generate business value through integration with existing IT). The tensions between scale and scope proved difficult to overcome, particularly as the one-to-many model simply became 'same-for-all', with no discernable business benefits to customers.

These three pillars of competitive advantage, we argue, are critical success factors in building and sustaining an eBusiness model. In this chapter, we concentrate our attention on the Web services model, which offers a more recent and technically superior model compared with the first phase of the ASP model. Our interest is on the software applications, which comprise Web services, rather than on the infrastructure and platforms on which Web services run. In the next three sections, we examine the three pillars of competitive advantage specifically in the context of Web services.

4.1 Building Market Leadership

The Web services industry based on the technologies emerging through the recent convergence of the software, computing, and telecommunications is highly fragmented and evolutionary in nature. Many firms in this industry are small-and medium enterprises (SMEs), each trying to achieve leadership in a dynamic environment. They attempt to develop a unique strategic position, but few firms have significant market share to enable them to shape industry events and influence industry outcome. Market leadership is yet to be defined in this space, though the important characteristics are the ability to provision network-based applications and services as core business activities; demonstrate a substantial and active end-user customer base; have proven revenue generation streams; demonstrate innovation in online delivery of software-as-a-service; and be with the recognized leaders within the originating industries (software, computing, and telecommunications).

One strategy for achieving and sustaining market leadership is through partnerships and alliances (Hamel et al. 1989; Henderson 1990; Venkatraman and Henderson 1998). A firm enters into co-operative ventures with expectation of gaining competitive advantage that would be difficult to achieve in isolation. Such a strategy enables a firm to increase their market reach to co-opt customers or suppliers within their value stream activities. However, in fragmented industries, few market leaders emerge and any competitive advantage developed by a firm is often temporary and unsustainable. Unless a firm creates pre-emptive capabilities and develops a defensible position through relationships and trust with partners, a follower can build on its complementary assets and dislocate the firm from its early lead market position.

Within the Web services market, two types of firm predominate. First, service '*enablers*' are likely to be leading software or infrastructure providers, such as IBM, Cisco, Hewlett Packard and BEA. These firms already have a substantial

and active customer base. Second, service '*providers*' are likely to be service firms who work with the enablers in provisioning network-based applications and/or services as their core business. Partnerships and alliances between these two types of firms is born out of necessity, as provider firms offering a range of semi-customized and commodity products and services must align with enabler firms to deliver an end-to-end solution (Currie and Seltsikas 2001). These synergistic relationships help enabler firms develop new channels for their technical products and services and provider firms achieve technologically strong bases to build and offer their own products and services.

For Web services providers offering software applications as commodity products, achieving market leadership without strong partnerships and alliances with leading industry players will be difficult. Examples of successful firms are rare, though two firms are noteworthy. Concur.com which offers automated expense management solutions claims to be '*the undisputed world leader in the field of automated expense management.*' Similarly, Salesforce.com claims to be *'the worldwide leader in on-demand customer relationship management (CRM) solutions.*' While these firms claim market leadership through the superiority of their products and services, the risk of competition from larger industry players is significant. As markets mature, consolidation through mergers, acquisitions and takeovers increases. The longevity of Web services providers will therefore depend upon their ability to develop viable and sustainable partnerships and alliances with leading industry players. Strong partnerships and alliances, in turn, will build market leadership of the firm.

Strategic partnerships and alliances are not easy to achieve (Henderson 1990). The strength of these relationships is variable, depending upon the perceived importance of, and commitment to, the relationship by each firm within a relationship. The firm's market positioning is a critical factor that may enhance or constrain its ability to achieve stronger relationships. The logic of positioning demonstrates the extent to which the firm executes its strategic position through an integrated system of activities to achieve superior firm performance. The basic premise is that the firm has multiple options in positioning itself in the marketplace and it chooses one based on its strategic choices (Child 1972). Notwithstanding the antecedent paths and positions of the firm, which may enhance or inhibit its efforts to achieve market leadership firms can strengthen their position through partnerships and alliances.

Market positioning is relevant to our understanding of the evolutionary paths of IT services firms. For large infrastructure providers, partnerships and alliances are sought to create a channel to market for the provision of software-as-a-service for new customer markets like SMEs. For start-up Web services vendors, partnerships and alliances are critical as they may lack the necessary IT infrastructure assets, resources and capabilities to provision their products and services (Kern and Willcocks 2002). The strategic management research emphasizes that the relationship between positioning and partnerships/alliances is perennial. Web

services firms will therefore need to consider how they can leverage their partnerships/alliances to benefit their customers and to develop their own business. Market position will determine the scale and scope of partnerships and alliances. A firm with strong market positioning may find many firms keen to establish partnerships. However, both large and small firms should be conscious of the fact that attempts to engage with too many partners is fraught with risk; particularly where one party perceives the partnership to be less important than the other. Many start-ups which were victims of the dot.com found that 'strategic partnerships' between themselves and their larger counterparts proved unrewarding, as risk-asymmetries evolved through differing commitments.

4.2 Creating Strategic Differentiation

Strategic differentiation between competing firms is achieved through developing, mobilizing and deploying a complex mix of firm assets, resources and capabilities (Barney 1991; Grant 1991; Montealegre 2002). Resource-based view indicates that firms compete on the basis of unique corporate resources that are valuable, rare, difficult to imitate, and non-substitutable (Barney 1991). These resources lead to sustainable competitive advantage when they are heterogeneously distributed across firms in an industry and remain stable over time. While it is possible to delineate between tangible, intangible and personnel-based resources as specific units of analyses, a firm can even develop strategic differentiation by mixing or bundling resources to create organizational capabilities (Grant 1991). Capabilities are the antecedent organizational and strategic routines, which influence how firms develop, acquire, integrate and eliminate resources to create strategic value.

Web services firms need to develop strategic differentiation by developing valuable assets, resources, capabilities and competencies, which are not easily imitated by rival firms. In the first phase of the ASP market, most firms failed to achieve strategic differentiation as commodity-type offerings ignored the integration requirements of potential customers (Susarla et al. 2003). Integration is perceived as the critical 'missing link' between product/service portfolios and the ability to obtain strategic differentiation among IT services firms. Strategic differentiation may be achieved through the integration of disparate applications across organizations and supply-chains. Previously, the cost of integration has precluded many client firms from undertaking this activity. But with Web services, many trading partners can use open standards to connect their internal systems to a public exchange or a private exchange located on their extranet. This enables each trading partner to invoke the unique software functionality offered to provide smooth participation in market settings. Vertically-focused Web services firms with industry-specific knowledge and expertise will be able to leverage their integration capabilities more effectively through their in-depth understanding of the customer market (an example in healthcare is Trizetto.com which serves only

this sector). Strategic differentiation will emerge and re-emerge as software applications are combined and recombined into new commercial offerings. Web services firms with low integration capabilities may end up offering commodity products/services that are unlikely to enhance their strategic differentiation, unless they develop a strong brand image and achieve scale economies from commodity offerings. Otherwise, intense competition within a commodity market will drive down prices resulting in little strategic differentiation among competitors and poor revenue generation.

Even though firms can accumulate a large stock of valuable physical, organizational and human resources, they may fail to develop useful capabilities (Teece et al. 1997). In Web services, a firm's capability to integrate depends on two key factors: its partnerships and alliances and the breadth and depth of its product/service portfolio. Stronger alliances and closeness in partnership increase trust among the partners and lead to high degree of cooperation (Ring and Van de Ven 1992). In fragmented and immature industries, like Web services, firms have to collaborate with partners to develop strategies, methods, tools and techniques for enhancing business leverage through maximizing the value of combinations of physical, human and organizational resources.

In Web services, large-scale implementation of enterprise systems imposes tightly coupled relationships between customer and supplier. This situation may result in lock-in for the customer or supplier (depending on their power), as the cost of moving to alternative customers or suppliers with different technology is too complex and costly to undertake (Shapiro and Varian 1999). A strategy of Web services firms should be to integrate existing enterprise systems with open standards based Web-hosted modules that enable smooth integration across different technological platforms. Only strong partnerships or alliances with complementary IT services *providers* and *enablers* with established brands and reputations will facilitate such enhanced integration.

Web services firms collaborating with complementary *providers* and *enablers* may seek to enhance their integration capabilities through a strategy of full service provisioning that combines mission critical pre-integrated enterprise software with additional vertical solutions offered on a modular basis. A modular approach to infrastructure and applications deployment creates business value from scalable, end-to-end solutions. Additionally, customers derive value from a hosting model by eliminating costly integration development and efforts. Yet this is complicated by the issue of asset specificity, which refers to the degree to which firm software applications are specialized to the specific business processes. The greater the degree of asset specificity, the less likely a customer will enter into an outsourcing contract with an IT services supplier. The less asset specific the software application, the more likely it will be outsourced at reduced risk to the firm (Nam et al. 1996).

Clients selecting a Web services solution will base their decision on how asset specific their software applications are in relation to their external and internal business processes and IT products/services portfolios that offer optimal integration among them. Unlike a point solution involving the integration of two applications, the integration of multiple applications is not a linear increase but an exponential one depicting exponentially growing costs of complexity associated with integration. A client must therefore select the types of products and services according to the integration demands imposed by its business processes. Web services firms, in turn, will therefore have to develop and offer products/services that enable levels of integration to meet the specific integration needs of their clients. A Web services firm with a wide variety of products/services will be better positioned to provide higher levels of integration for clients with different integration needs.

Product/Services portfolios of firms arise from R&D activities or through partnerships and alliances (Grant 1991). In high velocity markets, products and services face accelerated obsolescence, resulting in the erosion of a firm's competitive position. This dynamic and unstable situation means that the only real source of competitive advantage is the ability to detect and respond consistently to changing markets by offering new products and services (Peteraf 1993). A firm with strategic market position can leverage its position to develop a wide variety of products/services for its clients.

Web services firms operate in an unpredictable and unstable environment. They need to recognize that product and service lifecycles have become increasing time-compressed. Time-compression requires a radical rethink of product and service portfolios from their market positioning perspective (Cusumano and Yoffee 1998). Many Web services providers have entered into partnerships and alliances with large independent software vendors (ISVs) to become, self-styled enterprise IT services providers. Examples are BlueStar, Corio and USi. These firms offer network-based enterprise applications and services as their core business and enhance and develop resources and capabilities by working with leading ISVs. ISVs benefit by developing a new channel to market (Weill and Vitale 2001) by converting their best-in-class software products into a software delivery service aimed at the SME market (Currie and Seltsikas 2001).

ISVs such as SAP, Oracle, Seibel, and Peoplesoft all partner with IT services firms to extend their product and services portfolios, either on a one-to-one model (where customer data is hosted on a single server) or one-to-many model (where economies of scale are achieved through hosting customer data on shared servers). Differentiation is also obtained through exploiting these relationships by expanding customer choices; or through developing unique, valued added features built into products/services. As Web services firms face intense rivalry and time-to-market pressures, their choice of partnerships and alliances with other industry players will influence their ability to seize market opportunities with speed. This, in turn, will influence the types of products and services offered to customers.

Therefore, a Web services firm with greater numbers of strong partnerships/-alliances will enhance their products/services offerings to customers.

4.3 Enhancing Revenue Generation

The ubiquitous infrastructure of the Internet has produced a dynamic environment where increased industry competition, unstable partnering/alliances, a proliferation of commodity-type products and services, and confusing pricing models has resulted in poor revenue generation for many ASP firms (Currie et al. 2004). The fallout of dot-coms and ASPs revealed faulty pricing models with limited scope for generating medium or even short-term revenue streams. The hype surrounding the benefits from Internet-based software was not shared among potential customers, many of which distrusted a remote delivery model (Currie et al. 2004; Susarla et al. 2003). A serious shortcoming was the failure of vendors to recognize that provisioning customized products and services at prices close to the maximum customers were willing to pay was critical for revenue generation (Grover and Ramanlal 1999). Their pricing models did not offer the flexibility to accommodate varying numbers of customers. The one-to-many model of remote software delivery was largely a same-for-all model, where commodity software products and services returned low economic rents and no surplus value for the vendor.

The complex interplay between buyer price sensitivity and buyer bargaining power are important considerations. The extent to which buyers are sensitive to pricing models depends on four main factors. First, the higher the cost of a product or service as a proportion of total cost, the more sensitive buyers will be about the pricing model. Second, the less differentiated the product or service of the supplier, the more willing the buyer is to switch suppliers on the basis of price. Third, the greater the competition among sellers, the more buyers will demand price reductions. Fourth, the relative importance of the industry's product or service to the quality of the buyer's product or service, the less sensitive buyers are to the pricing models. Keeping these factors in consideration, Web services firms need to develop flexibility in their pricing models to cater for a wide range of customers.

Within the Web services market, another dilemma is apparent. While the proliferation of undifferentiated, commodity products and services keeps prices low, this results in poor revenue generation. Yet enhancing product and service offerings through higher levels of customization increases revenues but leads to fewer customers. Web services firms therefore should recognize the need for price flexibility since it is critical in a highly dynamic and turbulence industry sector with low barriers to entry. The greater the flexibility in the pricing model, the higher the potential for revenue generation.

Despite the perceived business advantages inherent in the software-as-a-service or 'utility computing' business model, setting pricing models has proved to be complex and unpredictable for Web services firms (Currie et al. 2004); especially the provision of enterprise software on a hosted delivery model has proved particularly problematic. Like most markets, the Web services market falls between two extremes of a spectrum: perfect price discrimination and perfect competition (Grover and Ramanlal 1999). In perfect price discrimination, suppliers extract the entire surplus and markets are least effective. In perfect competition, clients extract the entire surplus and markets are most effective. The balancing act of these conflicting forces determines the eventual market structure. For example, in Web services, commoditization enhances product substitutability and lower search costs permitting price comparisons and rational choice. Conversely, information asymmetries between vendors and customers and cost differentials for acquiring information result in devising pricing models based on supporting the internal cost structure of both vendor and customer rather than one based around market forces.

This situation is sustained where there are inhibitors to pure competition in which buyers can easily search for alternative suppliers and compare product offerings (Grover and Ramanlal 1999). Both Web services firms and its potential customers are facing such inhibitors. For example, Web services firms may be committed to product/service offerings over the short to medium term, which may preclude them from making changes to their cost structures. Similarly, customers may forgo carrying out a market search for new products/services if they experience 'lock-in' with their existing IT supplier. In an unbundled market, Web services firms will need to ensure that customer retention strategies form part of their strategic decisions in regard to product/service offerings and integration capabilities.

In the example of customised or commodity-based products/services, customer demands for integration and customization may offer little scope for transferring to a Web services model unless existing enterprise systems can be integrated with hosted software. Equally, undifferentiated software applications priced on a per-person-per-month basis may not be attractive to customers, and equally fail to generate sufficient revenues to ensure the survival of the vendor. Web services firms therefore need to develop their pricing models according to scale (the number of potential users) and scope (the type of software applications offered). Their ability to provide various levels of integration options will influence their ability to develop appropriate pricing models, which match the integration needs of customers. As integration needs change, the pricing model will have to be flexible enough to accommodate such changes without significant increases to the cost structure resulting in a loss of revenue for the Web services firm.

Potential customer benefits from Web services are lower total cost of ownership (TCO), increased revenue through enhanced customer service and satisfaction, access to improved technical capability (infrastructure, applications, IT staff),

unparalleled high levels of performance, reliability, availability and scalability from hosted software applications, faster time-to-market, and improved quality of service. Like large-scale ERP outsourcing, some Web services contracts involving traditional and hosted models requiring large-scale integration, multiple partners, long-term contracts, and complex service level agreements (SLAs) will inflate costs, both for the vendor and customer. The Web services firms may also find that the increased cost structure of providing integrated solutions prevents them from using TCO and other cost models as criteria for business benefits to the customer. These higher and often hidden costs will have to be recuperated from customer projects for the long-term survival of the Web services firm. Thus, they will have to develop pricing models by reducing their own costs, rather than imposing the burden on individual customers. However, higher cost structures impose constraints on the flexibility in dynamically and competitively pricing products and services. With the increase of offshore IT outsourcing, pricing models in Web service firms will need to take into consideration external factors which lead to price differentials, than simply setting prices based on the cost of produce/service development. This situation will result in some firms concluding that their business is not viable in a global market.

Complexities surrounding integration, cost structures and pricing models are intensified by the necessity for Web services firms to partner with other business and technology providers (Kern and Willcocks 2002). Such a complex scenario invariably plays out with one partner deciding to withdraw from the relationship as expected revenues fail to accrue. This may produce devastating effects for the most vulnerable partner; likely to be a start-up Web services firm. The higher the integration need of a customer, the more partners are involved in the customer project, and the higher the vulnerability and risk for the service provider. The cost structure of the Web services firm will have to absorb such risk. Additionally, the higher the integration needs of a customer, the greater the complexity involved in the customer project. Such complexity often requires development of specific tools and plug-ins, which will also affect their overall cost structure. Further cost burdens can be imposed by customers demanding additional business and IT services, such as customization, consultancy, training and security. Thus, higher level of integration will negatively impact on the cost structure of the Web services firm.

The costs incurred by Web services firms are also inextricably linked with the types and numbers of products and services offered to their target clients. In the first wave of the ASP market, many ISVs preferred to sell software licences to ASPs, who would then re-sell them to the customer. This scenario greatly increased the cost structure incurred by the ASP, with many firms becoming economically unviable. Web services firms need to calculate the extent to which an expansion in their product and service portfolios enhances their strategic differentiation among rivals firms; or alternatively simply imposes additional constraints on their internal cost structures.

5 Conclusion and Future Research Directions

Prior work on Web services has largely focused on the technical dimension of developing web-based products and services with an emphasis upon security and standards. By contrast, this research adopts a business perspective by focusing upon the development of a sustainable value proposition in Web services. Though service providers promise business value from web-enabled technologies, most e-business start-ups went out of business. This resulted in an overall lack of confidence about the business value of emerging technology, and the service providers more generally. It also led to a situation where venture capital firms became increasingly risk averse to Internet-related business start-ups. The technology industry therefore went into freefall from 2001 as investors decided not to purchase shares in an industry which had been severely over-hyped and yet had failed to deliver on its promises.

As a consequence of declining confidence, many large firms, such as ISVs and telecommunications firms scaled down their e-business activities, recognising that customers were keen to maximise the returns from existing (legacy) applications. While Web service firms promise to offer a new value proposition - one designed to enhance software application integration and create the networked organization – significant challenges remain. A complex array of potential contradictory and conflicting factors will force Web services firms to carefully develop strategic choices that leverage business benefits to achieve and sustain a competitive advantage over rival firms. The ability to achieve market leadership, strategic differentiation, and revenue generation will impose hard choices on business executives, as the one-size-fits-all mentality of failed ASPs proved that customer priorities were broader than simply accessing web-enabled commodity-based software applications. Rather, customers will demand greater freedom in selecting Web service firms, which means that those with the ability to offer flexibility and agility are more likely to succeed than those with rigid business models.

In proposing a conceptual model of a sustainable value proposition for Web services, we believe that potential and existing Web services firms will need to carefully balance each of the six determinants, which are precursors to achieving competitive advantage. The success with which firms undertake this activity will not be easy in a global environment, which is both turbulent and immature. Yet the failure to recognise the complexities of developing a sustainable value proposition evident in past dot.com failures will mean that some Web service firms will fail at the first hurdle.

By presenting our generic conceptual model, we suggest that future research on emerging technologies and eBusiness needs to focus upon both a market and firm level of analysis. Whereas a market level is necessary to evaluate factors such as, potential rivals, barriers to entry, competitors, supplier relationships, and bargaining power of buyers (Porter, 1980), a firm level analysis enables the

delineation of specific eBusiness models (Currie, 2004; Weill and Vitale, 2001) enabling a resource-based view analysis which considers assets, resources and capabilities.

Future research studies may therefore explore the relationships between two or three constructs in our model (i.e. partnerships, integration, and market leadership) rather than treating the model as the basis for a much larger research project. In this way, researchers may be able to undertake longitudinal process-oriented case study research which tracks how the development of partnerships may enhance a firm's integration capabilities which will, in turn, help it to become a market leader. While this appears to be straightforward on face value, we suggest that relatively little is known about the partnership arrangements of Web services firms and how these partnerships may differ from those developed in other industry sectors.

Other research may explore the relationship between service providers and their customers. Whereas much of the application outsourcing literature has adopted a customer-oriented perspective, little is known about the relationship between service providers and their customers in developing a mutually beneficial value proposition. Whilst the dot.com era was overshadowed by hype and optimism, the extent to which the customer would benefit from eBusiness models was often ignored, even by the venture capital firms who were evaluating the potential of these business plans. Equally, survey-based studies may track the life-cycle of Web services firms to determine how their business models undergo change over time. Following the dot.com downturn, many firms which had initially labelled themselves as ASPs, began to discard this label[1]. Our model may therefore be used to explore specific changes to business models, such as, the decision to move towards a commodity-based IT business rather than one which is based upon long term customer relationships. Also, how services providers adopt offshore outsourcing strategies to enhance their customer offerings to compete with industry rivals. Offshoring may therefore be based upon a cost reduction strategy or one designed to take advantage of the growing competencies of offshore vendors.

In summary, we suggest that our generic conceptual model offers a more comprehensive approach to understanding the Web services phenomenon. While this sector is still in its infancy, we argue that the false dichotomy of 'old' and 'new' economies is inappropriate for understanding how services providers deploy emerging technologies to develop new business opportunities. As we have sought to demonstrate, the lessons from the strategic management literature are highly relevant for understanding the Internet era, and more specifically, how Web

[1] The website, ASPnews.com now labels ASPs in two broad categories: service providers and enablers. The service providers are largely called 'software-as-a-service' providers, with the term ASP discarded. www.aspnews.com.

service providers must develop their business strategies with a view to enhancing their competitive position.

References

Barney, J. "Firm Resources and Sustained Competitive Advantage," Journal of Management (17: 1), March 1991, pp. 99-120.

Cassidy, J. Dot.con. Perenial, 2002.

Child, J. "Organizational Structure, Environment and Performance: The Role of Strategic Choice," Sociology (6: 1), 1972, pp. 1-22.

Currie, W.L. (ed) Value creation from eBusiness Models. Butterworth-Heinemann, 2004.

Currie, W.L., Desai, B., and Khan, N. "Customer Evaluation of Application Services Provisioning in Five Vertical Sectors," Journal of Information Technology (19: 1), 2004, pp. 3-20.

Currie, W.L., and Parikh, M.A. "Value Creation from Web Services: A Multiparadigmatic Evolutionary Model," Journal of Strategic Information Systems (forthcoming), 2005.

Currie, W.L., and Seltsikas, P. "Exploring the Supply-Side of It Outsourcing: Evaluating the Emerging Role of Application Service.," European Journal of Information Systems (10: 4), December 2001, pp. 123-134.

Cusumano, M.A., and Yoffee, D.B. Competing on Internet Time: Lessons from Netscape and Its Battle with Microsoft, New York Free Press, 1998.

Grant, R.M. "The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation.," California Management Review (33: 3), Spring 1991, pp. 114-135.

Grover, V., and Ramanlal, P. "Six Myths of Information and Markets: Information Technology Networks, Electronic Commerce, and the Battle for Consumer Surplus," MIS Quarterly (23: 4), December 1999, pp. 465-495.

Hagel, J. Out of the Box: Strategies for Achieving Profits Today and Growth Tomorrow through Web Services, Harvard Business School Press, 2002.

Hamel, G., Doz, Y.L., and Prahalad, C.K. "Collaborate with Your Competitors -- and Win.," Harvard Business Review (67: 1), Jan/Feb 1989, pp. 133-139.

Henderson, J.C. "Plugging into Strategic Partnerships: The Critical Is Connection.," Sloan Management Review (31: 3), Spring 1990, pp. 7-18.

Kern, T., and Willcocks, L.P. "Service Provision and the Net: Risky Application Outsourcing?" in Information Systems Outsourcing, R. Hirshheim, A. Heinzl and J. Dibbern (eds.), Springer, 2002, pp. 513-534.

Levina, N., and Ross, J.W. "From the Vendor's Perspective: Exploring the Value Proposition in Information Technology Outsourcing," MIS Quarterly (27: 3), Sept 2003, pp. 331-364.

Martinez, N., and Weir, J. "Western Europe Web Services Market Analysis, 2002-2007," IDC Report # WS02K.

Montealegre, R. "A Process Model of Capability Development: Lessons from Electronic Commerce Strategy at Bolsa De Valores De Guayaquil," Organization Science (13: 5), Sep/Oct 2002, pp. 514-531.

Nam, K., Rajagopalan, S., Rao, R.H., and Chaudhary, A.A. "A Two-Level Investigation of Information Systems Outsourcing. (Cover Story)," Communications of the ACM (39: 7), July 1996, pp. 36-44.

Peteraf, M.A. "The Cornerstones of Competitive Advantage," Strategic Management Journal (14: 3), March 1993, pp. 179-192.

Picardi, A.C., and Seymour, L.A. "U.S. Web Services Market Analysis, 2002," IDC Report # 28493, IDC.

Ring, P.S., and Van de Ven, A.H. "Structuring Cooperative Relationships between Organizations," Strategic Management Journal (13: 7), October 1992, pp. 483-498.

Shapiro, C., and Varian, H.R. Information Rules: A Strategic Guide to the Network Economy, Harvard Business School Press, Boston, 1999.

Susarla, A., Barua, A., and Whinston, A.B. "Understanding the Service Component of Application Service Provision: An Empirical Analysis of Satisfaction with Asp Services," MIS Quarterly (27: 1), March 2003, pp. 91-124.

Teece, D.J., Pisano, G., and Shuen, A. "Dynamic Capabilities and Strategic Management.," Strategic Management Journal (18: 7), 1997, pp. 509-533.

Venkatraman, N., and Henderson, J.C. "Real Strategies for Virtual Organizing.," Sloan Management Review (40: 1), Fall 1998, pp. 33-48.

Weill, P., and Vitale, M. Place to Space: Migrating to Ebusiness Models, Harvard Business School Press, 2001.

Business Process Outsourcing, Knowledge and Innovation – A Study of Enterprise Partnership

David Feeny

Templeton College, Oxford University, David.feeny@templeton.ox.ac.uk

Leslie Willcocks

Warwick University, Willcockslp@aol.com

Mary C. Lacity

University of Missouri, Mary.Lacity@umsl.edu

1 Introduction

In this Chapter we report on our research into four case studies of Business Process Outsourcing (BPO). The outsourcing of so-called back office support processes is now seen as a potential strategy by even the largest of corporations, fuelling forecast growth rates of 10%-15% per annum over the next five years. Our own more recent estimates suggest that by 2007 the figures are on target to be ITO 34%, IT-intensive BPO 15% and offshoring 9% of the average corporation's IT budget. Thus, incrementally, outsourcing will form 58% of the average corporation's IT budget by that date. If we take into account the rising general BPO market, use of external IT/BP services combined is likely to move from a 2005 average of 12% to 20% of the corporation's total costs by 2008. Our calculations here are conservative.

On our estimates, ITO global revenues will exceed $200 billion by the end of 2005. After, and indeed partly because of, the slowdown between 2001-2004 this figure will rise by at least 7% per annum for the next five years. Of this, offshoring ($US 7 billion in 2004) will probably rise to over $20 billion by 2010. There are many hyped figures on the size of the future BPO market. On our estimates the market for mainstream BPO expenditure is likely to grow worldwide by 10% a year from $140 billion in 2005 to over $220 billion by 2010, BPO expenditure will be in areas such as the human resource function, procurement,

back office administration, call centres, legal, finance and accounting, customer facing operations and asset management (Willcocks and Cullen, 2005).

Potential beneficiaries on the supply side include both new and familiar names. The well established providers of IT outsourcing are increasingly targeting BPO: for example, Accenture chairman Joe Forehand reported in January 2002 that 50%-60% of his company's new business pipeline was in the area of BPO- this has turned out to be the case; EDS claims to have more than 22,000 employees dedicated to BPO, supporting nearly 4,000 clients in 29 countries. They have been joined by new specialist BPO companies such as EXULT, bought by Hewitt in summer 2004, and the beneficiary of the HR Services contracts placed by BP and Bank of America. Below the mega-contract level we find the burgeoning growth of 'offshore' specialists – BPO revenues in India for example increased by 70% in 2003 to $1.5 billions, a trajectory that continued into 2005.

So what are the keys to BPO success? Is the IT outsourcing experience of an Accenture or EDS an advantage, or is BPO significantly different? How important in the overall scheme of things are the low labour costs of offshore providers? What is the learning to date? BPO has historically been a topic of little interest for journalists or academic researchers, receiving very little attention in the general management press (in marked contrast to the extensive coverage of information technology (IT) outsourcing[1]). We have brought to this research study our extensive prior experience in the field of IT Outsourcing (Lacity et al. 1995, 1996; Lacity & Willcocks 1998, 2001). Based on that experience, we have particularly wanted to explore whether the Xchanging approach to BPO, as a new organizational form, successfully addresses four recurring difficulties in other models of outsourcing:

1. **The Lack of Partnership** between client and provider. We are conscious that all the early large IT outsourcing deals were loudly proclaimed as 'Strategic Partnerships'[2] – but in reality they were structured as win/lose relationships and performed accordingly. Typically the client muscle ensured that contracts were initially skewed in their favour; but massive potential switching costs allowed the vendor to exploit changing business and technology contexts to reap the future rewards. Even shared risk/reward deals in the IT outsourcing field have typically struggled as the interests of the client (better/cheaper services) have diverged over time from the goals of the vendor (to concentrate on gaining additional external revenues).

---

1 For example, in the past ten years Harvard Business Review and Sloan Management Review have between them published nine articles which have 'IT Outsourcing' within the title; by contrast the search term 'business process outsourcing' produces no relevant articles in the same period/publications.

2 For discussion of prominent early IT Outsourcing deals see: Lacity and Hirschheim (1993); McFarlan & Nolan (1995)

2. **The Lack of Sustainability in Performance and Innovation** A common experience in IT outsourcing has been that the vendor has indeed reduced costs on baseline services, but at the expense of the service quality experienced by end users – that there is no 'added magic' from the vendor. Even more regularly have we heard the client complain that there has been 'no innovation', that they are experiencing a period of 'mid-contract sag' in which the vendor has lost energy and enthusiasm. In the IT domain we have found that the client needs to retain in-house a range of 'core capabilities' to effectively manage the evolution of the function in line with the needs of the host business (see Feeny & Willcocks 1998).
3. **The Lack of Fit between homogeneous provider solutions and heterogeneous client contexts.** In the IT outsourcing domain, we see increasing recognition by businesses that no single provider – or single contracting form – is appropriate across their whole range of IT activity. Selective IT sourcing is increasingly prevalent (see Lacity et al. 1996).
4. **The Failure to Create, Share and Leverage Knowledge.** Again, in the IT outsourcing domain, a common client complaint is that, despite promises of applying world class expertise, superior management practices and leveraging their experience curve, suppliers rarely seem to share knowledge, create new knowledge, or apply existing knowledge in ways that result in real business value for the client.

Individually each of the four Xchanging Partnership deals we researched provides a rich picture of BPO experience; each has been documented as a separate case study[3], with its own specific findings. In this chapter we look across the case studies for a composite understanding of the Xchanging approach, and we will assess the overall evidence to date against these four areas, that Xchanging has developed a distinctive and viable approach to Business Process Outsourcing.

2 Research Scope and Methodology

The research study gave us access to the Xchanging company's first four major deals:

- An HR Services Partnership with BAE SYSTEMS which provides services to the client's 150,000 employees and dependents, worth £250 millions over 10 years.

[3] See the following Templeton Research Papers: Lacity et al. (2002); Willcocks et al. (2003); Lacity et al. (2003), (2003)

- A subsequent 10 year Partnership with BAE SYSTEMS to manage £800 millions of procurement in indirect spend categories.
- An Insurance Services Partnership jointly formed with Lloyd's of London and the Insurance Underwriters Association, which settles more than £20 billions of business each year within a network of some 180 companies.
- A subsequent Claims Services Partnership with Lloyd's of London, which manages more than 250,000 claims per year to a combined value of £8 billions

For each of these deals we interviewed a cross section of stakeholders. These included the key executives from the client and on the Xchanging team; sample users of the service being provided; representatives of those who had transitioned from the client to Xchanging as part of the deal. A total of 38 interviews were conducted in the first half of 2002, and 12 of the respondents were re-interviewed during 2004, and six in mid-2005. In addition we had access to a range of documentation, including contractual documents, partnership business plan material, Xchanging Methodology Manuals.

3 Background: Creating the Xchanging Company

When he founded Xchanging in 1998 David Andrews was convinced that the market for business process outsourcing was set for major expansion, and that, through his experiences as partner in charge of outsourcing for Andersen Consulting in Europe, he had identified an approach that was, in terms of governance, implementation process, and core competencies superior to currently prevailing offerings. Xchanging's target would be the 'back office' functions and processes of major corporations, the 'cinderella' activities which typically had suffered from years of relative under-investment and ad-hoc expansion. For Xchanging to succeed with such clients it needed the resources to go with its ideas. General Atlantic Partners, the leading US based private equity investment firm, agreed to an investment of £50millions[4]. With GA's backing, Andrews set out to recruit the top level team which would turn Xchanging's business model into operational reality. As the team came together, one priority was to capture in detail the Xchanging approach, to start building the intellectual property in the form of manuals or bibles for each Xchanging competency. The other task was to win some business. Inevitably this represented something of a rollercoaster ride for a start-up company, with disappointments along the way. But by the beginning of 2002 Xchanging had in place the four contracts we have had the opportunity to research.

[4] The £50millions was later increased to £60millions. GA announced a further £50millions investment in Xchanging in November 2002

- An HR Services Partnership with BAE SYSTEMS which provides services to the client's 150,000 employees and dependents, worth £250 millions over 10 years. Essentially, the 'transactional' HR activity is transferred to Xchanging, the 'strategic' HR activity is retained within BAE SYSTEMS
- A subsequent 10 year Partnership with BAE SYSTEMS to manage £800 millions of procurement in indirect spend categories.
- An Insurance Services Partnership jointly formed with Lloyd's of London and the Insurance Underwriters Association, which settles more than £20 billions of business each year within a network of some 180 companies. The respective settlement offices of Lloyd's and the IUA – known as the Lloyd's Policy Signing Office (LPSO) and the London Processing Centre (LPC) – transfer to Xchanging
- A subsequent Claims Services Partnership with Lloyd's of London, which manages more than 250,000 claims per year to a combined value of £8 billions

In practice Xchanging signed a further partnership in late 2004 for the back office of the Frankfurt Stock Exchange, but this deal is at time of writing at too early a stage to make a detailed assessment.

4 The Distinctive Business Model: Enterprise Partnership

All four of the deals studied are structured as 'Enterprise Partnerships', the first implication of this being that each has resulted in the creation of a new Business Unit within Xchanging. They are respectively called Xchanging Human Resource Services (XHRS), Xchanging Procurement Services (XPS), Xchanging Insurance Services (XIS), and Xchanging Claims Services (XCS). All have been successful up to mid-2005, while XIS and XCS have merged because they provided similar services to different parts of the London Insurance Market. The Xchanging company has full operational control of each business unit, and appoints its Chief Executive and management team. The contractual framework for each of these Enterprise Partnerships is similar and includes the following features:

- **Financial accounting**. 'Profits' of the business unit are shared between Xchanging and its Client Partner, usually on a 50/50 basis. Profits are generated through cost efficiencies achieved on baseline services; through introduction of new services, which are priced at an agreed mark-up over cost; through sale of services to third parties. Accounting is on an open book basis.
- **Baseline service guarantees**. While details vary, there are commitments on cost and quality improvements over time. For example in the XHRS deal, BAE

SYSTEMS are guaranteed minimum levels of cost savings in the early years; the contract also commits XHRS to improve baseline service to 'world class upper quartile' performance by the end of year 5.

- **Human Resources**. All those who have been responsible for service provision within the client partner transfer to the Enterprise Partnership on agreed terms. Xchanging becomes responsible for their employment and benefit costs, and for any redundancy costs incurred. Xchanging commits to assign some of its key talent into the partnership
- **Investment**. Xchanging commits to a minimum level of investment into the partnership, for identified purposes. For example, the XIS contract identifies £15millions of investment in various categories; within the XHRS contract £17millions are committed, primarily for the implementation of a new technology base.
- **Governance**. The contract establishes joint governance bodies for the partnership: a Board of Directors; a Service Review Board; and, if a significant technology investment is committed, a Technology Review Board.

The simplicity of means embodied in these arrangements has a remarkable elegance to anyone who has waded through the waist-deep documentation of more typical major outsourcing deals. It reflects the ability, within a partnership deal, to defer detailed due diligence to the post-contract Realignment phase; and to focus instead on what is required to deliver the performance ambitions of the contract. It goes back to the diagnosis by Andrews and Bramley of what would enable a superior model of outsourcing:

> 'First a mechanism for maintaining active involvement from senior management, on both sides…'. – John Bramley

The governance provisions establish the mechanism for the involvement of both sides. Each Enterprise Partnership has a Service Review Board (SRB) with equal membership from Xchanging and the client partner. It meets regularly to monitor performance of existing services, and to sign off on the specification and pricing of any proposed new ones. It has contractual powers to impose financial penalties if persistently poor service performance is being experienced. It also has a crucial role in the sign-off of detailed service definition, specification, and baseline cost which marks the end of the Realignment phase. Kim Reid who, as HR Director for BAE SYSTEMS Customer Solutions and Support Group, is one of the client-side members of the XHRS Service Review Board sees the Board as one of the instruments of partnership:

> 'If this was a traditional customer/supplier relationship I think you would get the customer blaming the supplier for not delivering a service. For me the partnership means that the accountability for delivering service into the business is mine. I have to make sure it is delivered as a seamless service so that myself and my other HR Directors will not say "this went wrong

> because XHRS did this". If something goes wrong it is because we did it. It is very much a partner type relationship.' – Kim Reid

The joint **Board of Directors** established for each Enterprise Partnership takes governance arrangements a step beyond Andrews's previous experience. The idea was triggered by his perception that client management attention begins to wane once an outsourcing deal has progressed beyond its early stages:

> 'Could I get sponsors to continue to turn up for meetings? Well maybe, but it was hard work. So when we formed Xchanging we put enterprise partnership into a standard commercial structure. It's a breakthrough because you have got rules there. You have got rules like you have a Board of Directors and you have non-executive Directors, and they have to turn up for meetings. And you have certain duties as Board Members, you have to act in the best interest of the business whether you are from the outsourcer or the clienl.' – David Andrews

While the real test of this idea may not come until later years of the partnerships, it is easy to see its symbolic power. For example, the first Annual Report of XHRS was introduced by non-executive Chairman Tony McCarthy – whose 'day job' is Group HR Director of BAE SYSTEMS.

The Enterprise Partnership structure we have studied is not the only business format offered by Xchanging. In particular, each of the Enterprise Partnership business units is charged with pursuing external clients for their services, with a number of 'wins' into 2004 for XCS, XPS and XIS. The logic of such deals is that they add economies of scale to each of the businesses, to the potential advantages of all parties. While detailed study of these 'add-on' deals was beyond the scope of our research, the documentation we have seen shows that these additional external clients experience most of the elements of the Xchanging business model – four phases of implementation, deployment of Xchanging's Competencies, establishment of joint Service Review Boards. However, there are two important contractual differences:

- These clients do not have representation on Boards of Directors, since no new business unit, or Board, is being established.
- For the same reason, the new clients receive guarantees on service costs but do not share in any further cost efficiencies achieved.

Our overall understanding of Xchanging's emerging practice is that a 'partnership ethos' is embedded in their approach to all deals; but the level of client participation in governance and profits will vary pragmatically as a function of the size and complexity of the deal .

5 A New Implementation Model

In a true Partnership relationship aligned incentives make possible a very different process. To reinforce alignment over time Xchanging devised a new four phased implementation approach which not only recognizes the need to manage transition in transferees and service users, but also captures the objectives and expectations of the partner organizations over time:

- As soon as a Letter of Intent is signed, the partnership enters a ***Preparation*** phase in which, in parallel with contract negotiations, a first level mapping of the 'as-is' service and process is achieved. This provides the information base for creation of the Business Plan which the Enterprise Partnership will pursue.
- With the signing of the contract, the Partnership moves into ***Realignment***. While service may show some improvement in cost and/or quality through implementation of quick and obvious opportunities, the main emphasis is on service stability during successful induction of the transferees; and on detailed due diligence through creation of a full service definition and service specification. These two sets of activity are crucial in establishing the sought-for trust and behaviors in both transferees and service customers, required for the success of the Partnership. The Realignment phase concludes with the sign-off of the detailed service definition. The Win/Win structuring of an Enterprise Partnership allows any resultant re-basing of costs to be absorbed into a revised business plan.
- The planned major improvements in service cost and quality are now implemented during the ***Streamlining*** phase, at a time when both transferees/service providers and customers have become prepared for them. The Partnership can operate on a viable financial basis because benefits are being passed on to the client business as and when they are being achieved, within an open book operating regime.
- Future benefits in the final phase of ***Continuous Improvement*** are seen to depend on the Partnership's success in further service and process innovation, targeted at both existing and additional end-user customers.

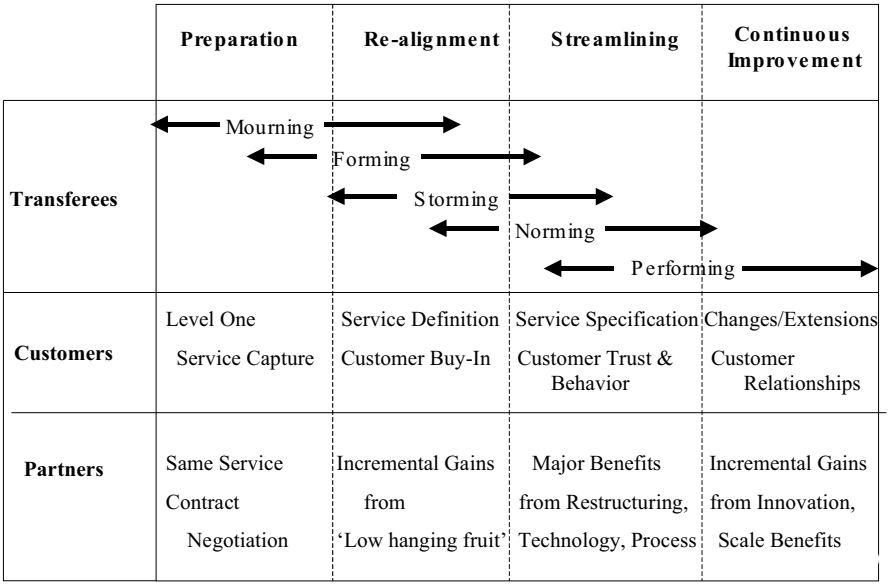


Figure 1: Conceptual Summary of the Logic of the Implementation Model

6 Competencies – 'The DNA of Xchanging'

The third building block of the new Enterprise Partnership model were key Competencies. When David Andrews first assembled his business plan for Xchanging, the business model featured five Competencies that would be critical to success – in the areas of **People**, **Service**, **Process**, **Technology**, **Environment**. These he had assembled from his experiences working on Accenture deals. Richard Houghton's recruitment as CEO of XHRS alerted Andrews to a sixth – **Sourcing** – based on Houghton's own experience of the impact of highly professional procurement skills while at the company Caradon. Finally the need identified in the business plan for strong programme management skills was translated into establishment of a seventh Competency – **Implementation**. Collectively these Competencies came to known as the 'DNA of Xchanging'. By permeating the activity of every Xchanging deal they would deliver the second requirement of a superior approach to business process outsourcing:

> '…coupled with that joint senior management involvement, supporting that really, the availability within the supplying company of the necessary range of skills, some of which were deficient in previous outsourcing models' – John Bramley

Our research confirmed the centrality of Competency deployment to the Xchanging approach. The following sections include some of the many examples we experienced.

6.1 The People Competency

The People Competency Manual captures the tool set which its Head, John Attenborough, has built up over the years to take transferees progressively from **Mourning** through the stages of **Forming**, **Storming**, and **Norming** to **Performing** as 'champion teams'. It provides, for each stage, guidance to management on what will be appropriate and inappropriate behaviours; the tools that will be most relevant to helping individuals through that stage; a standardized format for assessing individual progress.

For the transferees, who have previously been working far from the spotlight within corporate back offices, it represents a new level of management attention. Alan Bailey, himself a management transferee from BAE SYSTEMS, recalled the impact of the XHRS launch event which marked the start of the Forming stage:

> 'So these guys had never been talked to like that before, and it's exciting for them because they are profit generating, not the overhead cost we had always been referred to in the past.' – Alan Bailey

The momentum was then increased through a series of three day induction sessions, which all transferees attended within six weeks of the contract being signed. The People Competency operates on the basis that a great deal of potential resides in people buried in back offices. One key to the future success of the partnership business is to find ways to release their energy, talent and commitment:

> 'I have a fundamental belief that inside each of these vertical back office functions if you just screw the lid off and put some water in, people just go oomph and grow'. - John Attenborough

We found that those transferred at the management level were the first to experience this sense of new potential. From BAE SYSTEMS, Alan Bailey and colleague David Bauernfeind were revelling in their roles as members of the XHRS executive team. Darren Fisher, transferred from Lloyd's into the XCS executive team, spoke of a similar effect:

> 'One of the reasons for the behavioral change I think is that the whole silo thing has quite rightly been broken down, and people have been given different responsibilities to what they had in Lloyd's. If you had asked me six months ago if the management team could gel and blend and operate the way it does, I would have said there was no way. I think we all feel much more empowered than we felt before.' – Darren Fisher

6.2 The Service Competency

Bryony Moore, recruited as Practice Director of the Service Competency, faced the challenge of establishing the formal tool set for her area, of translating her accumulated personal learning into documented best practice. The Service Competency Manual shows (Figure 1) a four pronged approach to the achievement of '1st Class Service'.

The critical start point is the creation of a detailed Service Definition, a task which Bryony Moore led personally in 2001/2 on secondment to the executive team of the XHRS partnership.

> 'In BAE SYSTEMS which had just gone through this massive merger, they have got over 70 sites. On each of those sites, there are often multiple BAE SYSTEMS businesses, a history of conjoined businesses and different cultures; and everybody thought that their bit of HR was different from everybody else's. We now have one operating HR Service specification for the whole of the BAE SYSTEMS in the UK'.- Bryony Moore

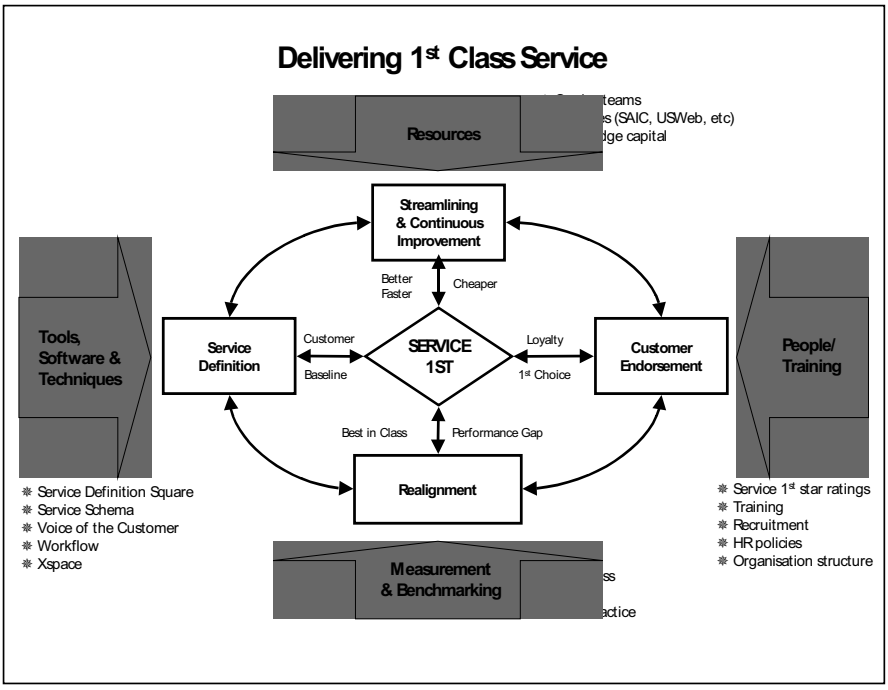


Figure 2: Delivering 1st Class Service (Source: Xchanging Service Manual)

Using a web-based tool developed by Xchanging, the team mapped more than 400 specific services within eight categories:

- Reward and Recognition
- Learning and Development
- Resource Management
- Employee Documentation
- HR Information Services
- International Resources
- Pension Management
- Advisory and Support Service

The completed service definition showed for each service which of the ten stakeholders within BAE SYSTEMS were the target customers: current employees, past employees, future employees, the company, BAE SYSTEMS' suppliers, BAE SYSTEMS' customers, the community, external governing bodies, joint ventures, and trustees. Once approved, it made available online as a common reference point. Creation of a detailed service definition serves multiple purposes. It is a key component of the due diligence which, in the Xchanging model, is completed after the contract is signed. It establishes for the Service Review Board the base for future measurement and progress towards the achievement of external benchmarks of world class service quality – the second prong of the Service Competency model. And the extensive exposure to customers which its creation requires is critical to the building of trust.

At this stage the Service Competency had prepared the ground for the third element of the Service model, restructuring to a new organization in the Streamlining phase of implementation. In the case of XHRS this involved the creation of seven Service Streams, each operating as a mini service business; and the appointment of five Customer Relationship Managers, aligned to the major business groupings of BAE SYSTEMS. A further training programme helped all transferees to move from a 'back office' to a 'front office' mindset, the fourth strand of the model.

Kim Reid, HR Director for BAE SYSTEMS Customer Solutions and Support Group, reported in 2003 on the Service progress being made by XHRS:

> 'I guess some of my colleagues wouldn't say this but I do think that the service from a process, control point of view has improved extraordinarily. I think Xchanging really does have the right processes in place, they really know what they are doing on that. Some of the transformation that I have seen in some of the people that are in XHRS, especially the customer relationship managers, one or two of them, they never would have

> interacted with the business in the way that are doing now, they have become a lot more professional.' - Kim Reid

6.3 The Process Competency

Paul Ruggier saw the creation of Xchanging's Process Competency as *'an opportunity to take the best of my learnings from Procter & Gamble, Texaco, and GE, and do it the way I felt was right.'* One step was to bring together a best practice methodology and tool set for process improvement under the label CMADIS – Contracting projects, Measuring data, Analysing data, Developing solutions, Implementing solutions, and Sustaining benefits. While CMADIS incorporates tried and tested tools from his Six Sigma experience, he wanted to extend previous methodologies in three of these stages: projects would be 'contracted' rather than merely 'defined; and he brought new emphases and ideas to the implementation and sustaining stages. He then identified as particularly important to the Xchanging approach the full time assignment of people from within the business:

> 'In the past, we have all been there, you have had your process improvement project but you have also had your day job to worry about. We take people full time from the business and train them, I think that is the key. Nobody knows the business better than those actually doing it.' – Paul Ruggier

The XIS partnership business, to which Ruggier himself was seconded, provided the clearest evidence of the Process Competency in action. During the pre-contract Preparation stage for XIS, Ruggier carried out extensive process analysis. Based on this work, he was able to advise that an XIS business plan which called for 50% cost reduction over five years was realistic. Working with Adrian Giles – another external recruit experienced in Six Sigma techniques – he identified 37 projects that could be tackled immediately. At the same time he was selecting potential project leaders from those who would transfer from the client side.

When the XIS contract was signed in May 2001, six of these transferees were assigned full time to process improvement work. They received intensive training in the CMADIS methodologies and became certified 'Black Belts' within the generic language of Six Sigma (see figure 3).

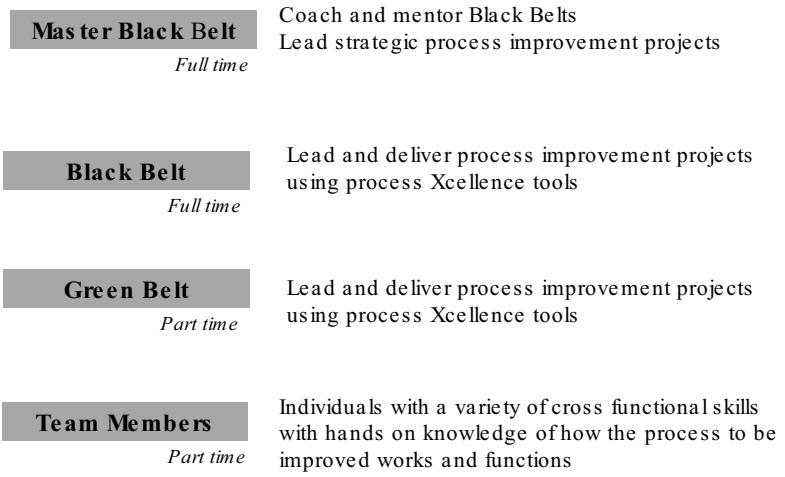


Figure 3: Xchanging's Six Sigma Infrastructure

In June 2001 the Black Belts were handed their projects. Each was required to complete within three months, without required technology change; and each was to deliver £200,000 of cost savings. They succeeded. Whereas the XIS business plan had a Year 1 objective of saving 16 full time jobs, the first wave of process work identified a headcount reduction of 84 people - equivalent to a £2 millions annual saving in a £7 millions cost base. The team moved on to a second wave of projects, continuing to reflect the Ruggier approach:

> 'You do 'bite size' projects that you can get results from in three months. You analyse the process at level 4 where it becomes actionable. You take people from the businesses, train them thoroughly in the techniques and let them do process improvement full time – full time people, full time results. Six Sigma is also enormously useful as a discipline, and a benchmark to measure process performance against…also choosing the right people for Black Belt training – people willing to challenge existing paradigms, intelligent, analytical skills, influencing and conflict resolution skills, respect in the organisation.' – Paul Ruggier

The Process Competency's approach of selecting transferees from the 'grass roots' of the business and training them as Black Belts fits very well with Attenborough's belief – cited earlier – that those 'buried within back offices' often have great inherent development potential. The Black Belts we interviewed were clearly excited by their experiences:

> 'At first I was reticent about coming forward. But it has been the first time I have been able to go through a whole process and implement something

that makes a – significant is too small a word for it – a fundamental change to the business. You do feel good about it!' – John Morris

6.4 The Technology Competency

Practice Director for the Technology Competency, Steve Bowen, joined Xchanging after a ten year career in Accenture where he described himself as having been *'focussed on technology architectures, big architectures.'* He shared David Andrews's belief in the power of component driven architectures, and welcomed the challenge of shaping Xchanging's technology capability:

' The essence of the brief was quite simple: Xchanging had to be able to scale as a business without the bottomless pit of money required to reinvent the wheel every time. What we had to do was come up with a technology platform that would be a beating heart at the centre of every partnership business. Invest once and implement many times.' – Steve Bowen

At the heart of Bowen's solution is a four box architecture which captures the generic requirements of any service business (figure 3).

- The Reference box captures the 'static' information of the business – for the XHRS business this would include Health and Safety policies, Employment Law, and so on; for XPS, the contracts set up with suppliers; for XCS the policy documents and claim registration requirements. The relevant tools are those of knowledge and content management.
- The second box is labeled Performance because it captures both the detailed Service Definition and the performance data relevant to each service component.
- The Relationship box is the source of information about both customers and suppliers of the service business – the tracking of contacts made, follow-up committed and so on.
- The fourth box is the gateway to the transaction systems underpinning the business activity over time – the claims processing systems, the trading platform for procurement for example

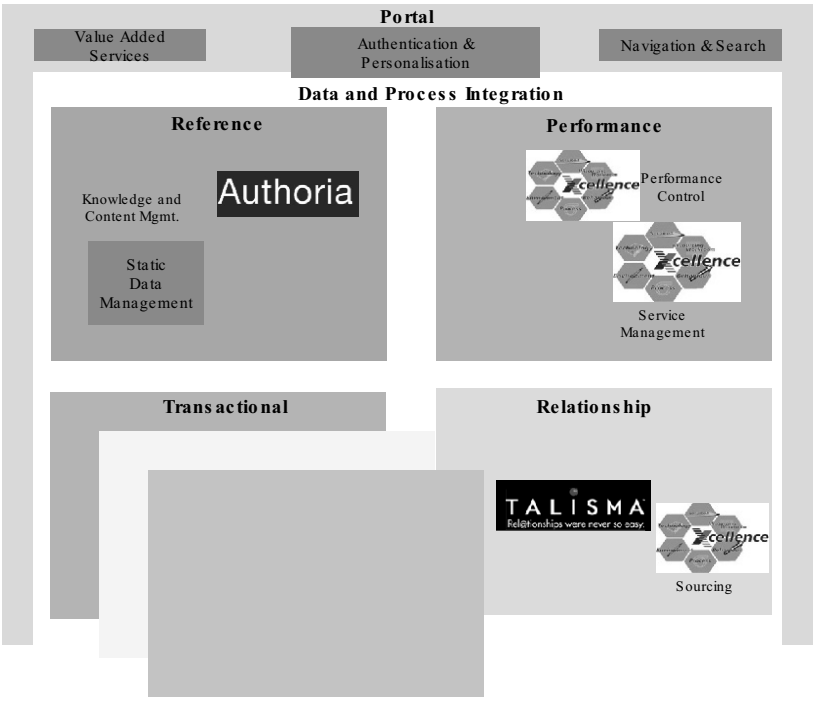


Figure 4: Xchanging's Technology Architecture Framework

Wrapped around these boxes is the software required to deliver the services through an internet portal – the log-on authentication and personalization, navigation and search, and other value added services. The architecture is designed to provide a scalable model to support Xchanging's growth over time, and to provide the flexibility of decision making about legacy system replacement which had proven so important in Andrews's experience.

The first test of the technology approach came in the XHRS business, where provision of an 'e-HR' system to end users had been specified as a key requirement by BAE SYSTEMS. The test was passed when XHRS launched the first version of **peopleportal** at the beginning of October 2001, five months after contract signature. Three further releases each provided new functionality over the next five months. The impact was considerable:

> 'I think they were absolutely astonished that we delivered on that, I don't think they expected it for one minute.' - Richard Houghton, CEO, XHRS

> 'I think the **peopleportal** has been the first sign from within the business that something has changed, something has actually happened. I think the first time it was used, it was used for the senior leadership population, we were doing an

> exercise on pay review so each senior leader within the business (650) of them had access to that people portal. We had a lot of very good feedback, it was very good, the technology was great, it was web based, but we've had some very good feedback but we've also had people who just can't get the hang of using the technology.' - Kim Reid, HR Director, BAE SYSTEMS Customer Solutions and Support Group

In the XIS partnership business, the technology competency was presented with a different set of problems. The immediately challenging issue was what to do about inherited outsourcing contracts. XIS CEO John Benjamin reflected ruefully that:

> 'If I had our time again we would have looked much harder at the IT contracts we had inherited. If IT is 40% of your costs, and you aim to dramatically reduce overall business costs, it gets in the way if you are hemmed in by seven year IT contracts, not negotiated with very much flexibility. You know there are going to be problems if you don't have methods for reconciling change within them.'

Clearly these issues had to be sorted before XIS could move on to a higher level IT agenda. In April 2001 Xchanging had headhunted, and seconded to the XIS IT post, David White - a highly experienced IT executive with a background in large-scale manufacturing, retail, and insurance organisations, and in managing the IT aspects of mergers. White got written into the contract with Lloyd's and IUA that if need be, the outsourcing contracts could be broken, albeit by paying penalties, even though the contracts still had between 5-6 years to run. This gave XIS some negotiating strength. The way forward, then, was to attack the substantial IT cost base of £12 million a year. This was possible, because, in David White's experience, IT outsourcing suppliers had not always managed their cost base that well, often having inherited their own IT from an inefficient company they had taken over the assets of in a previous deal.

White skilfully leveraged the obligations of the supplier under the contract to benchmark and deliver best practice cost-effective service. On the development contract, in a very short time, he achieved an agreed 28% cost reduction on £5.4 millions by attacking variable costs like customer liaison charges, and inflationary clauses. In the £5.7 million a year Lloyd's facilities management contract, he leveraged the supplier's contractual obligation to utilise cost effective mainframe and data warehousing environments to save £1.5 million in the first year. Further savings were targeted for later years.

Subsequently significant technology investments – based on the same platform were made in each of the partnership businesses, under the direction of the 'technology solution architect' embedded in each business. Bowen and others pursued a pragmatic mix of external procurement and in-house development by small fast cycle teams. He reflected on what he felt was the distinctiveness of the Xchanging approach:

> 'I think we do have a unique approach to information architecture, but uniqueness does not last very long. We now tend to rely more on our implementation credentials. As one potential client expressed it, "you know what you want to do, the speed at which you do it is incredible, you have incredibly bright people working for you, and you are delivering."' – Steve Bowen

6.5 The Environment Competency

This is charged with providing a threefold contribution to the success of Xchanging's Enterprise Partnerships:

- To reinforce in the minds of both transferees and Xchanging's service customers that something has changed, that the old back office has become the front office of a service business – the 'business surfboard' effect
- To help build the 'look and feel', the brand of the Xchanging company
- To improve the cost efficiency of Xchanging's real estate

The potential tension between these elements – particularly the first and the third – is addressed by the techniques developed by Environment Practice Director Andrew Chadwick. Chadwick claims to have pioneered the use of CAD in architecture, inventing the idea of 'organizational modeling' to capture an understanding of how people actually use office space. He combined this with the concept of the non-territorial office to design what he calls the 'space time office' – the space you need for the time you need it. Chris Main, who worked with Andrews and Chadwick on Accenture's HQ Georges Cinque project in Paris and now represents the environment competency on the XCS team. Space time office design delivers Chadwick's philosophy of '*less/better rather than more/mediocre*' real estate. It meets the challenge of cost efficiency by moving the business closer to the target of 'virtual estate':

> 'I define virtual estate as the space you need if you could wave a wand and change everything tomorrow and move into the space that fits you. Actual real estate is always bigger than virtual estate. The difference between the two is what I call trapped value.' – Andrew Chadwick

By mid 2002, the environment competency had completed three projects for the Xchanging partnership businesses:

- New offices in London's Billiter Street for the management teams of XIS, and Xchanging as a whole
- A purpose built shared service centre for XHRS in Preston, north west England, which also accommodated XPS staff

- Offices for XCS in Gallery 6 of the spectacular building created for Lloyd's some years ago by Richard Rodgers

All these facilities feature share some common 'look and feel' – the same range of furniture, and a distinctive and ubiquitous blue carpeting with the Xchanging logo; but there are significant differences reflecting their separate purposes. For example the Preston building meets the low cost objective while simultaneously transporting XHRS transferees from '*the porta-cabins of BAE SYSTEMS at Wharton*' to their own 'front office' facilities.

The XCS offices in Gallery 6 on the other hand symbolize the partnership business's presence in the heart of the insurance market. But in marked contrast to the conventional layouts you find throughout the rest of the Lloyd's building, it features a variety of spaces, shapes, and moods – small cost efficient workstations within an open area, enclosed quiet rooms, a 'combination space' modeled on '*the University Common Room where Dons read their newspapers, get their letters from pigeon holes, and talk about nuclear physics – a space that is informal and formal at the same time*'. The objective is to allow a choice of environments for meetings with customers, the Brokers and Underwriters who may be dealing with anything from straightforward modest claims to the massive consequences of the attack on the World Trade Towers.

6.6 The Sourcing Competency

When Richard Houghton convinced David Andrews of the significance of Sourcing as an additional competency, David Rich-Jones was recruited into Xchanging. His experience included a period in SmithKlineBeecham, where he created a global purchasing function to manage the company's £7 billions annual spend across 140 countries; as well as corporate purchasing roles in NatWest Bank, and more recently Caradon. However, when Xchanging won the XPS deal to manage procurement of indirect categories for BAE SYSTEMS Rich-Jones was the obvious person to lead that new Enterprise Partnership. His former Caradon colleague John Doherty joined Xchanging as Practice Director for Sourcing.

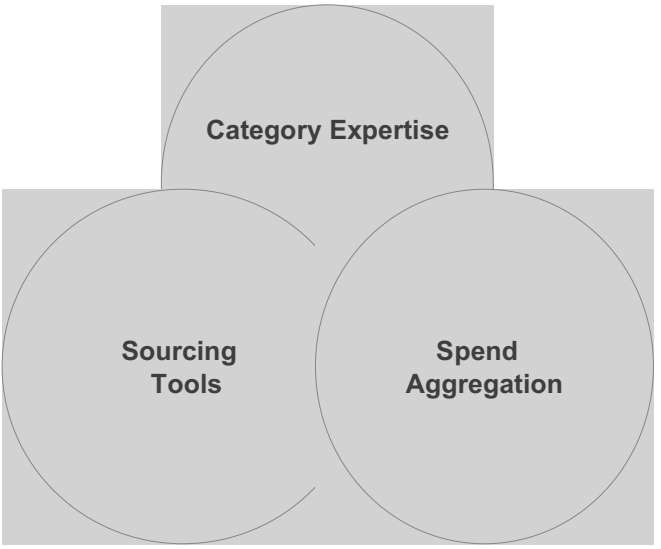


Figure 5: The High Level Model of the Sourcing Competency

The Sourcing Competency brings three sources of leverage to the task of reducing procurement spend:

- The category expertise of the best procurement professionals
- A set of tools and techniques to support those professionals, including software tools for modeling procurement strategies, and a technology based trading platform
- The ability to aggregate demand into volumes more attractive to suppliers

While these may be familiar ideas, at least in outline, Doherty points out that they are not commonly found within Xchanging's target customer domain:

> 'In a nutshell we are bringing the ideas of strategic commodity management, which hitherto have been typically applied to direct materials or core procurement, into what is normally a fragmented and disparate and neglected area of indirect procurement. We are building specific expertise in a relatively narrow range of commodities, rather than offering ourselves as procurement consultants who can consult on anything.' – John Doherty

Not surprisingly the Sourcing Competency has to date been most strongly linked with the XPS partnership business, which has taken over the management of seven categories of indirect procurement for BAE SYSTEMS – remuneration and benefits, vehicle fleets, learning and development, non-technical contract labour, stationery, and recruitment. A base-lining process for each category creates a

definition of standard units that make up that category and their existing costs. Modeling processes identify appropriate strategies for the future management of that category.

Xchanging has three broad strategies for category management:

- An arm's length strategy in which the end user trades directly with Xchanging's chosen supplier, who passes an agreed margin to Xchanging. Stationery procurement, for example, is managed in this way.
- A middle level strategy in which Xchanging actively manages the accounts payable and receivable processes. The vehicle fleet category follows this strategy.
- A 'thick involvement' model in which Xchanging acts as a market-maker between multiple customers and suppliers. This is the strategy for the non-technical contract labour category.

XPS moved towards the end of a hectic period of base-lining, and by mid-2003 the Sourcing Competency was starting to promote its contribution to the other partnership businesses.

6.7 The Implementation Competency – Grit in the Oyster?

> 'A key differentiator of the implementation team is that overall it is agnostic as to whether a particular approach is used or not, or as to the order in which one approach is used relative to another. Whatever is fit for purpose is key. Fitness for purpose overrides dogma, and outcome is more important than process.' – Xchanging Implementation Manual, Principles section

The basic role of this competency is to orchestrate the impact of competencies to best effect within each enterprise partnership. While there is an expectation that Service and People will be the early competency levers, followed by the application of Process and Technology during the Streamlining phase, Implementation is expected to support each Enterprise Partnership CEO in identifying the actual deployment which will yield the most effective business plan. Thus while XHRS has followed the 'typical' plan fairly closely, Process work dominated the Realignment phase of XIS, and Environment made an early contribution to XCS.

The Implementation Competency Practice Director, Mike Margetts, is another who spent his early professional career in Andersen Consulting - but a subsequent job as European Head of Project Services at Credit Suisse First Boston underlined some contrasts which have shaped his values:

> 'The approach at Andersens was all about structure and being very deterministic about the way things are done. CSFB was an environment where it did not really matter what you were going to do in six months. If you didn't do it in three months then you didn't do it. That was fantastic!' – Mike Margetts

The underpinning philosophy which Margetts looks for in the Implementation Competency reflects this emphasis on speed and results:

> 'Implementation is a beacon of pragmatism. I understand best practice, and I do my best not to follow it – I do my best to cut corners from it. It is a difficult thing to systematize that approach, because it is an anti-approach.' – Mike Margetts

We experienced in the research a number of examples of pragmatic problem solving action, particularly in projects to roll-out new technology and new user services in the XHRS partnership to which Margetts was seconded. But the proper measure of the implementation competency's success in action must be a function of enterprise partnership progress towards achievement of goals and milestones.

7 Progressing the Enterprise Partnerships Through Four Phases of Implementation

To re-cap for a moment, the Xchanging approach is to manage each Enterprise Partnership through four phases of implementation. This is seen as a critical and distinctive component of the Xchanging business model, enabling an orderly and successful transition to partnership for the transferees, the end user customers, and for Xchanging's client organization overall. Each of the phases has well defined entry and exit points, and certain key activities.

Table 1 shows the implementation status of Xchanging's Enterprise Partnerships in late 2002. It shows that the first two partnerships – XIS and XHRS – took much longer at the Preparation stage than Xchanging's target of three months. This is attributed to protracted negotiations with Clients who were wrestling with what they saw to be an unfamiliar and as yet unproven model. The follow-on deals with each client partner proceeded more smoothly through Preparation. From Realignment onwards, progress was seen to be good, with – most critically – the expectations set by the business plan for each partnership being met. The success of the partnerships in meeting the milestones of their business plans – with evidence that is shared transparently between Xchanging and the client – builds the confidence and momentum for further progress.

Table 1: Progress of Enterprise Partnerships Through Implementation Phases

	Xchanging Insurance Services XIS	**Xchanging HR Services XHRS**	**Xchanging Claims Services XCS**	**Xchanging Procurement Services XPS**
Preparation Dates	May 2000 – April 2001	June 2000 – April 2001	August 2001 – October 2001	July 2001 – October 2001
Realignment Dates	May 2001 – September 2001	May 2001 – October 2001	November 2001 – February 2002	November 2001 onwards: base-lining by Category
Streamlining Dates	October 2001 – August 2002	November 2001 – December 2002	March 2002 – December 2002	Transition by Category
Cost Efficiency Examples	***-30% productivity improvement*** -25% reduction in contract IT costs	-33% productivity improvement	-60% productivity improvement targeted through volume growth	-12% average cost reduction achieved across categories managed
Service Improvement Examples	'e-repository' service launched	-Four releases of 'peopleportal' achieved -Performance improvements in several critical services	-Enhanced Claims Review Service launched -Two new external clients signed -'Claimsportal' implemented	-'Sourcing Workroom' and 'Sourcing Portal' implemented -Improved relationships with suppliers

By mid-2005 all four enterprise partnerships had been several years into the continuous improvement phase. From the Xchanging perspective all the enterprise partnership businesses were trading profitably. XIS made a significant profit in its first full year, and in subsequent years and continued to win new clients into 2005. XCS had won two early external clients, a critical step in their aggressive growth plan. These two were combined in early 2004 into a jointly managed business unit, and delivered significant technology to the London Insurance Market. XHRS made a small profit, in line with plan, after the guaranteed first year cost savings were passed to BAE SYSTEMS, made a 'decent profit' in the second year, and was on target for profit and cost savings in its fourth year. Much the bumpiest ride had been experienced by XPS: the business plan was predicated on BAE SYSTEMS transferring spend equivalent to £80 millions/annum in 7 identified categories; it became apparent that the actual spend transferred in these categories was closer to £35 millions. This challenge to partnership was resolved when BAE SYSTEMS transferred another 8 categories, bringing the total rate of spend transferred to £100 millions/annum. Since XPS had been successful in winning control of a further £100 millions spend by customers external to the partnership, 2002 was completed on a high note, and 2003 and 2004 also saw profits.

8 Transforming The Back Office: Summary of Five Approaches

In the four Xchanging cases we have studied, the client companies rejected three viable options for back office transformation: do-it-yourself, management consultants, and fee-for-service outsourcing before selecting the enterprise partnership model. Tables 2 and 3 consolidate the learning on benefits and risks of the transformation models from all the research we have done on applying all these alternatives. It can be seen that the Enterprise Partnership emerges quite strongly. Table 2 and Table 3 include a fifth model: joint ventures. Although Xchanging clients did not consider joint ventures, it is useful to establish the differences between these and an enterprise partnership. The first difference is the primary purpose for joining together. With a joint venture, the primary purpose is revenue generation through external sales to third parties. Essentially, the customer views their function as world class and believes they can gain more revenues by selling to competitors than keeping the advantage to themselves. They seek a supplier to help with commercialization. With an enterprise partnership model, the main focus is delivering cost cuts and better services to the customer investor. A customer's back offices are certainly not yet world-class, and they seek a supplier to help transform the function through better management, better IT systems, and better processes. External sales are merely a bonus.

Table 2: Major Benefits of Five Back-Office Transformation Approaches

Do-it-Yourself	**Management Consultants**	**Fee-for-service Outsourcing**	**Joint Venture**	**Enterprise Partnership**
Realize all cost benefits internally Easiest model to sell to internal organization Under complete in-house control	Infusion of external energy and capabilities Ability of outsiders to bypass political resistance Clear indication that management is committed to transformation Most scalable solution among transformation approaches involving outsiders	Infusion of external energy and capabilities Ability of outsiders to bypass political resistance Clear indication that management is committed to transformation Guaranteed cost and service improvements for predefined baseline services One-time savings achieved upfront Potential for upfront investment by supplier	Infusion of external energy and capabilities Ability of outsiders to bypass political resistance Clear indication that management is committed to transformation Joint Board of Directors promotes customer participation and oversight Customer shares in any additional revenues obtained from external sales	Infusion of external energy and capabilities Ability of outsiders to bypass political resistance Clear indication that management is committed to transformation Guaranteed cost and service improvements for 5 years on both identified baseline services and discovered services Guaranteed cost-plus pricing on new services Upfront investment made by supplier Joint Board of Directors, Service Review Board, and Technology Review Board promote customer participation and oversight Customer shares in any additional revenues obtained from external sales

Table 3: Major Risks of Five Back-Office Transformation Approaches

MAJOR RISKS	Do-It-Yourself	Management Consultants	Fee-for-service Outsourcing	Joint Venture	Enterprise Partnership
Senior management will not make the investment in a non-core area to complete the transformation	HIGH, must obtain internal funding for entire transformation	MED, must obtain consultant's fee	VARIES by how much investment is negotiated by parties	VARIES by how much investment is negotiated by parties	LOW, supplier makes most of the investment
Lack of empowerment or skills to complete transformation	HIGH, lack of empowerment and skills of internal staff to make the quantum changes required	LOW, supplier experts manage the transformation	MED, depending on how much expertise supplier devotes to contract (typically customer only has approval of supplier account manager)	LOW, customer and supplier select management team	LOW, customer and supplier select management team; supplier experts manage the transformation
Cost escalation due to unbridled demand, power asymmetries allowing the supplier to premium price add-ons, and discovery of previously hidden spend.	LOW, demand restricted by amount of internal resources;	HIGH, mostly from premium add-ons	HIGH, one of biggest risks realized among fee-for-service customers; all sources of cost escalation evident	MED/HIGH, one of biggest risks realized among JV customers but Joint Board of Directors helps to mediate power asymmetries	MED, cost savings on undiscovered spend guaranteed; Joint Board of Directors, Service Review Board, and Technology Review Board help bridle demand; add-ons are pre-priced at cost-plus percentage and monitored with open-book accounting
Internal resistance from business units to centralize back office to achieve cost cuts	HIGH, easy to sabotage projects led by back-office managers	MED, depending on whether momentum is lost once consultants have vacated	LOW, resources now owned by supplier	LOW, resources now owned by the venture	LOW, resources now owned by supplier
Internal resistance from business units to standardize back office to achieve cost cuts	HIGH, easy to sabotage projects led by back-office managers	MED, depending on whether momentum is lost once consultants have vacated	MED, users can request customization, which supplier will gladly grant for additional price	MED/LOW, users can request customization for additional charge; but Joint Board of Directors should ensure customer oversight that requests are value-added	LOW, supplier can only meet P&L targets through standardization; all requests to customize must be approved by Service Review Board

Table 3: Major Risks of Five Back-Office Transformation Approaches (continued)

Supplier has no/little accountability or ownership of outcome	N/A	HIGH, time and materials contracts require little accountability	LOW, if service levels and penalties for non-performance are well-defined and measured	MED, service levels are frequently defined but penalties often are not	LOW, if service levels and penalties for non-performance are well-defined and measured
Supplier maintains key knowledge that is not transferred to customer	N/A	HIGH, suppliers vacate	MED, top talent may not remain on customer account	MED, top talent may not remain on customer account	LOW, transferees are fully trained in new culture, services, and processes
Customer and supplier incentives are not truly aligned	N/A	HIGHEST risk, but consequences are smaller due to project work	HIGH, every dollar from customer's pocket is a dollar in supplier's pocket	MED, conflicts can arise between maximizing venture's profits and minimizing customer investor's costs	MED, conflicts can arise between maximizing enterprise's profits and minimizing customer investor's costs
Inability of customer to manage long-term relationship with supplier	N/A	N/A	HIGH, one of the major problems experienced with this approach, relationship often deteriorates into us/them mentality.	MED, governance structure requires long-term joint customer and supplier participation, decision making, and problem solving.	MED, governance structure requires long-term joint customer and supplier participation, decision making, and problem solving.
Business model too dependent on revenues from external customers, which may not materialize	N/A	N/A	N/A	HIGH, particularly if venture is relying heavily on customer's idiosyncratic resources for competitiveness	HIGH, although partnership's resources are based on supplier's templated technology, it still does not guarantee competitiveness in the open market.

The second difference between the models relates to risk. In a joint venture model, the customer and supplier share risks and rewards in proportion to their initial investments. But with the enterprise partnership model, the customer bears less risk than the supplier because the customer receives guaranteed rewards even if the supplier has to deliver the rewards at the expense of their own profitability.

If customers select a joint venture model, they need to be sure the venture can successfully compete in the open market. In the past, we have studied a number of joint ventures between customers and suppliers that failed because the venture was never able to attract external customers. The essential problem was that the new venture was not competitive. The assets, technology, and people transferred to the venture had created a company specific 'product'. The estimated costs to transform to a generic and competitive level was 10 times the initial value, an investment the customer was clearly not willing to make for an uncertain outcome[5].

The other impediment to joint venture success was that the venture was so preoccupied with providing service to the customer investor, that they had no additional resources devoted to external sales. In instances where customers truly had a competitive offering, a spin-off was a more success vehicle for creating a

[5] See Lacity and Willcocks, *Global IT Outsourcing: Search for Business Advantage*, Wiley, Chichester 2001, for examples of customer/IT supplier joint ventures.

venture, such as General Motor's spin-off of EDS or American Airline's spin-off of SABRE.

9 The Xchanging Business Model – An Assessment

The research has provided an opportunity to assess a distinctive approach to business process outsourcing. We have been particularly interested in evaluating the potential for the Xchanging business model to address what we have found to be four critical issues during many years of research into IT outsourcing: Partnership, Sustainability and Innovation, Fit, and Knowledge

9.1 Assessment of Partnership, Xchanging-style

Recent management literature has regularly highlighted the growing importance and attraction of partnership between firms – of 'strategic partnerships', 'joint ventures', 'strategic alliances' and so on. The 'Resource Based View' of strategy focuses management on investment in core capabilities, and partnership with external providers to achieve non-core activities; the success of Japanese firms such as Toyota has encouraged adoption of partnership style relationships along the supply chain; increasing globalization has led to a proliferation of alliances around marketing and technology activities. But the literature has also increasingly chronicled the challenge of achieving partnership rather than the many potential reasons for wanting it.

Xchanging has opted for a partnership proposition, signaled most obviously by the financial reward sharing arrangements of its Enterprise Partnership contracts. More fundamentally, it seems clear that the deals we have studied are creating and sharing value that could not be achieved by either of the parties individually.

From the client perspective, the barriers were those of organizational complexity and lack of corporate priority:

> 'Everybody was saying there are obvious benefits to be had here, but they will never be achieved.' – Nick Prettejohn, CEO of Lloyd's

> 'The company's priorities are investment in Engineering and in Research and Development, not in good old HR.' – Chris Dickson, BAE SYSTEMS HR Director

From Xchanging's perspective, the company had assembled a range of impressive management skills but its intention was not to generate one-off consultancy fees. Partners were needed to provide the large scale activity which could be leveraged by those skills, to create a stream of annuity style revenues and profits:

> 'We effectively have been given a 50% financial share plus management control of someone else's inefficient infrastructure.' – Andrew Bester, CFO Xchanging

While some might suggest that each party is guilty of settling for a glass that is half empty, we see both client and provider to be consciously acquiring a large glass that is half full – rather than no glass at all. The institutional arrangements of Enterprise Partnerships are convincing in their alignment of goals in pursuit of Win/Win activity. Perhaps more importantly the values and behaviours espoused by key executives within Xchanging are generating a high level of momentum in that activity. Many of these individuals have come from a background in consultancy, where the business model honours the mega project. But we consistently encountered – in Implementation, in Technology, in Process – the alternative values of 'business benefits, fast and frequently'. Within a different business context and incentive structure, they were exploiting their considerable skills to, we perceive, much greater effect for the client.

The powerful impact of the incentive structure gets an Enterprise Business off to a good start, but what other aspects of the business model may contribute? Prior literature consistently highlights five factors as key enablers of successful strategic partnerships:[6]

- The **Trust** that typically comes from a combination of personal relationships and professional credibility
- A recognition of **Interdependence** in which all parties have a necessary role in achieving success
- High levels of **Information Sharing** between the parties, including sharing of critical and proprietary information
- High levels of **Information Participation** through joint planning and goal setting
- A joint problem solving approach to **Conflict Resolution**

It is instructive to assess the Xchanging business model, beyond the partnership contracting structure, against these factors.

Xchanging's distinctive four phase implementation model seems to make a particular contribution to the establishment of **trust**. Most notably, the creation of a detailed Service Definition during the Realignment phase involves extensive exposure to end user customers, and the completed definition – available online once approved – reinforces the idea that 'we know you, understand you, and know what we are doing'. The model allows relationships and trust to be built before the major changes are experienced in the Streamlining Phase. The appointment of

[6] see for example: Monczka RM, Petersen KJ, Handfield RB, and Ragatz GL (1998), Mohr J & Spekman R (1994)

Relationship Managers in Streamlining provides a mechanism for keeping that understanding and trust in place.

The Competency model is key to understanding partnership **interdependence**. Uniquely in our experience, Xchanging does not claim special knowledge of the back office activity a client may be seeking to outsource – of HR, claims settlement or whatever. That domain knowledge resides partly in retained client staff, and partly in those who are transferred to the enterprise partnership. The role of the competencies is to provide the complementary skills that will generate an altogether more effective and efficient service.

Open book accounting is clearly the critical step in **information sharing**; supported by the extensive service performance reporting provided from Streamlining onwards.

While Xchanging has full management control of the partnership businesses, the business plan for each is shared with the client at Preparation. The Board of Directors, drawn from both sides, is then charged with onward review and development of the business plan, a forum for joint planning and goal setting - for **information participation** at the highest level.

Finally the joint Service Review Board provides the formal mechanism for **conflict resolution**. It does not guarantee collaborative problem solving, but, as we have seen, it seems to be providing it.

In summary, the evidence to date is that Xchanging is achieving real partnership in the situations we have studied, and that this is no accident. We have one reservation for the future, which is that the acquisition of new clients may start to weaken the goal alignment between Xchanging and its Enterprise Partner clients, though this potential dilemma is already recognized.

9.2 Sustainable Performance and Innovation in Xchanging Enterprise Partnerships

By mid 2005 all of the enterprise partnership businesses were well into the Continuous Improvement phase. Our experience elsewhere of client complaints of 'lack of innovation' has been so consistent that it is important to make some attempt to assess the potential sustainability of service performance improvement under the Xchanging business model. What will be the enablers of innovation through the life of the businesses? And how likely are they to be in place?

The first key to success has been continuing and active client involvement. The governance mechanisms of Boards of Directors and Service Review Boards were designed with this in mind. XHRS added 'local' Service Review Boards to address issues specific to BAE SYSTEMS business units thus further extending client involvement and stimulus. Our own prior thinking in this dimension, based

on studies of IT outsourcing, has stressed the importance of particular people capabilities on the client side (Feeny & Willcocks 1998). A combination of these institutional mechanisms and capability strands seems appropriate, with regular rotation of client 'non-executives' who bring a range of skills and perspectives.

Another source of the new perspectives which can trigger innovation is of course the world beyond the partnership businesses. The acquisition of new external business may introduce new ideas as well as bringing financial benefits from increased scale. The proactive route is for Xchanging to continue its policy of targeting external hires to bring in people who have demonstrated outstanding skills within a different business context. Several senior executives cited the example of Peter George, recruited from Ford to be Operations Director of XIS and seen to be having a '*huge impact*' through the application of his experience in automotive to the partnership business.

This philosophy of looking across industry sectors and companies to find and apply 'world class practice' has of course underpinned from the start the establishment of the Xchanging Competencies. And it will surely be the development progress of the Competencies that is most critical to the achievement of sustainability. The gains made by the partnership businesses during Streamlining tended to be associated with the direct efforts of the Competency Practice Directors seconded to that business. The Competency skills now have to become pervasive across and within the businesses, paralleling the success of Process's engagement of transferees through the Black Belt scheme. Recognizing this, Xchanging has implemented two measurement systems. The first tracks the development of each competency in five dimensions: codification, training, tools, knowledge capital, organization. The second captures for each partnership the level of exploitation of the competencies within that partnership; it provides an ongoing stimulus for discussions between partnership business CEOs and competency Practice Directors on the available levers for moving the business forward.

Finally, we have the time honoured phrase that 'necessity is the mother of invention'. The partnership business CEOs know that Andrews expects them to grow their revenues by 20%-25% per annum, through a combination of service innovation and external sales. The incentives are in place, a credible infrastructure for continuous improvement has been proactively developed. Our assessment is that Xchanging has an excellent chance of sustaining performance improvement in its partnership businesses.

9.3 The 'Fit' of the Xchanging Business Model

We have seen evidence that the Xchanging business model is proving effective across four enterprise partnership businesses. These businesses represent a number of 'back office' activities, and two different client industry settings. Xchanging

aims to expand each partnership by attracting additional clients, and to set up many more Enterprise Partnerships over time. Based on the evidence to date, what is the overall scope for application of the Xchanging model? And in what contexts is it likely to be most effective? Here we assess the applicability of the model using a set of frameworks devised from our earlier research experience (Lacity et al. 1996). Our methodology looks from the client perspective at appropriate sourcing strategy, and it was developed in the context of IT sourcing. But, after minor modification, we believe it provides interesting insights into the potential for business process outsourcing, and the distinctive strengths of the Xchanging model.

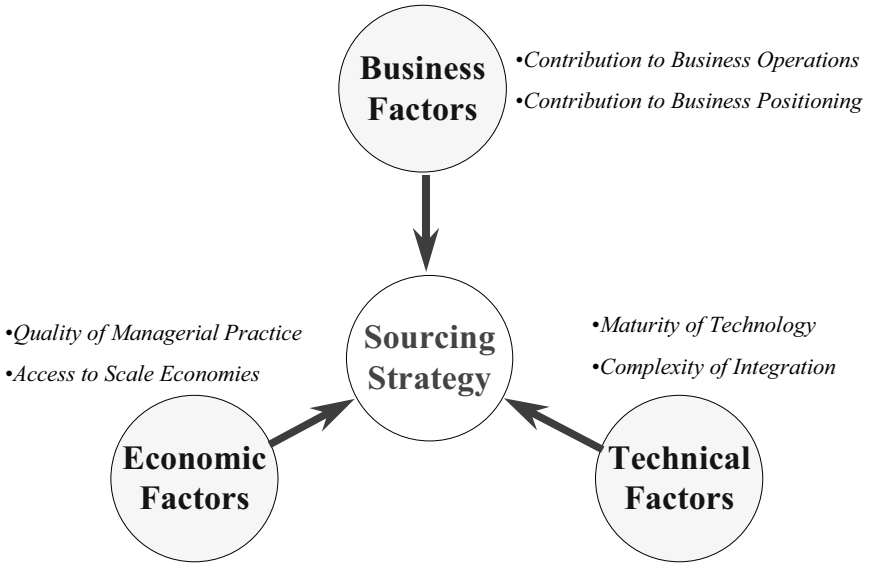


Figure 6: A Framework for Sourcing Strategy

The process, detailed in Feeny, Willcocks and Lacity (1996), starts with an analysis of **business factors**, an assessment of the contribution the relevant activity makes to the operations and to the market positioning of the overall client business. Does the activity make a 'marginal' or a 'critical' contribution to business operations? Does it represent a 'commodity' to be performed to a required standard? Or a potential competitive 'differentiator' whose performance should be maximized? If the answers are 'marginal' and 'commodity', the logical sourcing strategy will be to minimize cost through competitive tendering, fee-for-service, and a basic service level agreement. At the other extreme, for 'critical differentiators' an external provider is relevant only if it provides the capability to improve performance, and is willing to engage on terms that fully align goals with the client business. In this analysis:

- The settlement service of XIS is probably a 'critical' but 'commodity' activity for Lloyd's and the IUA. While costs are important, cost reductions must not be achieved at the expense of the quality of the service
- XCS on the other hand maybe perceived as both 'critical' and a potential 'differentiator' for Lloyd's. This would support Lloyd's CEO Prettejohn's concern that XCS must be a separate partnership business, focussed on aligning with Lloyd's target competitive positioning
- A positioning of XHRS as similar to XIS in this mapping illustrates the importance of client executive perception. In many firms transactional HR activity might be seen as a 'marginal commodity' whose costs should be minimized. The early misgivings about outsourcing of BAE SYSTEMS line executives demonstrated that they did not share that view. In the words of Tony McCarthy, XHRS is on a journey to service excellence, committed to achieving world class service standards as well as low levels of cost
- The seven categories of indirect procurement managed by XPS probably occupy a number of positions on the map; the range of three category management strategies supports their ability to respond to this

Going forward, the Xchanging model looks to be an attractive option for the outsourcing of what clients perceive to be 'critical commodity' activities; the emphasis on service quality as well as cost, and the continuing client engagement are all appropriate in this domain. On the other hand in the 'marginal commodity' domain these same features of the model may represent over-engineering. Finally the model with its shared incentive structure would seem able to operate well for 'critical differentiators' such as XCS; but clients will often have both the motivation and the means to operate their equivalent activities successfully in house.

The second analysis, of **economic factors**, looks at the potential to improve the client firm's position through two key drivers of cost - managerial practices and access to economies of scale. This analysis confirms the logic of Xchanging's targeting of the back office activity of large corporates. As three of the individual case studies – XHRS, XIS, XPS – show particularly clearly, these can be contexts in which managerial practices are lagging because of insufficient attention; and where the achievement of in-house scale economies is constrained by a legacy of fragmented and dispersed activity. There is a considerable prize to be won, but the question is how:

- In the XHRS and XIS examples, client-side executive management recognized that the *Do-It-Yourself* approach would not be viable because the necessary changes required levels of management attention and investment that would not be available to back office processes. In the XPS context, there had previously been periodic application of in-house management expertise to

indirect procurement – but this had still left significant room for further improvement.

- The client-side decision makers also saw *Management Consultancy* projects as an unconvincing option to take. They were seen to represent high up-front costs to achieve one-step rather than sustainable change. There were also concerns about the accountability for and ownership of outcomes; and about lack of skills and knowledge transfer.
- *Fee-for-Service Outsourcing* was recognized as a credible alternative in the competitions that led to XHRS and XIS. It has the advantage for the client of full up front commitment to reduced cost levels; but real uncertainty about longer term outcomes as business contexts change and the incentives of client and provider diverge. (The challenge posed for XIS by inherited IT outsourcing contracts provides a cameo of the sort of difficulties that commonly arise.)
- The *Enterprise Partnership* model is seen to protect against this difficulty and to promise higher performance – in quality and/or cost – over the longer term. The alignment of incentives allows the model to address the contrasting demands of the XPS and XCS contexts, as well as the more familiar requirements of XHRS and XIS.

The final leg of our model looks at **technical factors** in the context of the activity. Is the underpinning technology for the activity mature and stable, or are there major opportunities for change in the activity enabled by recent technology developments? And does the technology base for this activity have a simple or complex interface into the wider infrastructure of the firm? To outsource a technologically stable activity which has a simple interface into the rest of the business, the expected course of action is to go regularly to formal competitive tendering: the requirement is easy to specify and switching costs from one supplier to the next should be low. But the context for the four Enterprise Partnerships we have studied is very different:

- The effective use of new technology is seen to be a key factor in the future performance of XHRS, XIS, XCS, XPS (and is already creating an impact in three of the four). However, it is impossible to identify and specify in advance the full and detailed implications of technology over a 5-10 year contractual period. The successful embrace of new technology requires a journey of discovery, and goal-alignment will be a critical factor in ensuring that client and provider progress that journey in harmony.
- In all four deals there is a complex service interface to the client – multiple locations and client entities, classes of user, types of transaction etc. In XIS, for example, there is further complexity in the form of organizational heritages, technical platforms, contractual infrastructures. The chosen provider's (in this case Xchanging's) ability to handle complexity is a critical

factor in such situations, for the client knows that there will be large switching costs – in finance, time, and turmoil – in any necessary move to a new provider.

Overall the analysis consistently suggests that the Xchanging business model provides a high level of fit with the needs of its declared target market – the back office activities of large and complex organizations. It is seen to be particularly appropriate – a superior model of outsourcing – when the outsourced activities are recognized by the client as critical to business operations. Clients who join an existing enterprise partnership, rather than trigger the creation of a new one, will benefit provided they too value service excellence above the lowest possible cost base. The Xchanging business model has a significant range of applicability.

9.4 Creating and Leveraging Knowledge

The Enterprise Partnership model entails multiple joint governance bodies. These governance mechanisms formally engage both client and vendor in a continuous process of joint planning and decision-making, ensuring that business strategies are understood and decisions taken with full knowledge, in the best interests of the enterprise partnership rather than for the sole or lopsided benefit of one or the other party. A side benefit of this knowledge-sharing governance system is the creation of trust and mutual obligation, which reinforces the institutional relationship. Stewart (2001) describes the essential elements or assets that contribute to the development of intellectual capital:

- ***structural capital***, representing "the codified bodies of semi-permanent knowledge that can be transferred" and "the tools that augment the body of knowledge by bringing relevant data or expertise to people"
- ***human capital***, or "the capabilities of the individuals required to provide solutions to customers"
- ***customer capital***, or "the value of an organisation's relationships with the people with whom it does business – shared knowledge"

A fourth kind of capital represents the glue, making knowledge creation, sharing and use possible. Nahapiet and Goshal (1998) have examined the catalyst role of social capital in developing intellectual capital. They identify three specific dimensions of social capital that facilitate the "interplay" of these capitals:

- the *structural dimension*, which involves the network ties and configuration and 'appropriable' organization that facilitate access to people and resources, thus promoting the combining and exchange of intellectual capital
- the *cognitive dimension*, which involves the shared "cultural" context of the organisation – the language, codes, and narratives that provide ways of knowing and create meaning

- the *relational dimension*, which involves trust and group identity (norms, obligations, identification), creating a sense of common motivation, purpose and benefit.

In Stewart's terms one can see clearly in the Xchanging governance model the elements of 'customer capital' being created. But in the deeper context of Nahapiet and Goshal's social capital research, the Enterprise Partnership business model creates a robust ***structural dimension***, with a formal governance network and a jointly held organisation that can be "appropriated" to develop new intellectual capital and value. It also creates the necessary anticipation of value that can arise from joining Xchanging's transformational expertise with the domain-specific knowledge being transferred.

The Xchanging Competency model also contributes to knowledge creation and leverage. Each competency is headed up by a highly experienced Practice Director (an example of Stewart's 'human capital'), who is responsible for establishing and maintaining the competency's explicit knowledge capital in the form of a detailed competency Manual, representing, in Stewart's terms, 'structural capital'. Further, the Practice Director is responsible for establishing the competency in each Enterprise Partnership using mainly transferred staff. This requirement ultimately builds a community of practice at the Xchanging level across all the Enterprise Partnerships, thus promoting development and sharing of tacit knowledge and its conversion to explicit knowledge. These practice communities meet regularly, communicate online, and network with other practitioners inside and outside their organisations.

In the context of Nahapiet and Goshal's social capital model, the Xcellence competencies establish a shared ***cognitive dimension***. They employ distinctive languages and "codes" that facilitate business transformation and knowledge exchange – the practice communities are rich environments for shared narratives. Further, the Xcellence platform facilitates access amongst practitioners, reinforces their expectation that they create value by sharing knowledge, and offers the ability to combine accumulated knowledge from across all the Enterprises.

The final key element of the Xchanging approach that creates significant social capital is its four-phased Implementation model: Preparation, Realignment, Streamlining, and Continuous Improvement. The purpose of the implementation model is to synchronise the significant changes that take place within the former employee population and the now-client community, and to establish and manage expectations between the partners.

This innovation contributes significantly to creating the ***relational dimension*** of social capital. Recognising that staff will initially feel powerless and resentful in an outsourcing situation, and that it takes considerable time for them to re-orient themselves to new circumstances, Xchanging's implementation approach carefully stages business transformation activity to their readiness to accept and support it.

As mentioned earlier, all employees are transferred to the Enterprise Partnership on day one, and go through an intensive change programme that lasts up to two years. Led by the People Competency, the process focuses on the developmental cycle of Mourning, Forming, Storming, Norming, and Performing. The net result is the deliberate creation of a new culture – that of a dynamic, profitable business – to supplant the previous neglected-cost- centre mindset. The process is not without cost, both direct cost in creating time for employees to make the transition, and indirect cost in deferring gains until staff are fully prepared. But this effort to build group identity and trust, establish norms of behaviour and performance, and instil a sense of mutual obligation yields enormous benefits in the exchange and combination of knowledge.

10 Conclusion

The first conclusion from our research is that there does seem to be very considerable scope for improving the performance of 'back office' activities. We see no reason to doubt the evidence in our case studies - that such activities commonly lack attention and investment priority. But what is the preferred route to achieving that improvement? One message from our earlier research into IT outsourcing was 'never outsource a problem – the rewards will go overwhelmingly to the supplier'; in other words the strong advice for IT was 'DIY first, perhaps outsource later'. The BPO research challenges that prescription. Given the competing demands of front line activity and what we have learned about the potential size and complexity of the back office improvement task, DIY is not the convincing first best option here.

Not surprisingly given its scope, the research has not advanced the case for a Management Consultancy solution either. Apart from the concerns expressed about the expense and lack of ownership associated with this option, it does not and cannot address the issue of creating a front office/service mindset in employees who remain within a corporate back office.

So we come to the conclusion that BPO is moving up the corporate agenda, as the route to back office improvement. But which model of BPO? While the familiar fee-for-service model does not align the goals and interests of client and provider over time, there may be many BPO contexts in which it is possible to build in appropriate safeguards. For example, the offshore outsourcing of certain types of Call Centre has clearly been successful. Elsewhere we have warned that BPO providers often exaggerate what they can achieve, and in practice their capabilities to deliver on their promises needs to be checked out carefully. In practice, our own twelve capabilities framework for BPO service providers is a partial development from our research experiences at Xchanging (Feeny, Lacity and Willcocks, 2005) .

It is in the very situations we have researched - of high complexity, technological dependency, and business criticality - that the fee-for-service model looks hardest to manage and least attractive. By contrast, the Enterprise Partnership model is seen to be elegant in its conception and effective in its execution to date - driven people who are consistently recognized as highly capable and motivated. While recognizing that the contracts studied were still in their early years at the time of our research, we report a number of findings:

- In all four cases there had been major changes to the service provided, resulting in significant improvements to cost and/or quality. In each case it seemed clear that these improvements would not have been achieved 'in house', without outsourcing.
- The 'Enterprise Partnership' model of Xchanging has indeed produced a partnership dynamic, a very different set of motivations and behaviours to those common in traditional fee-for-service arrangements.
- Through its investment in competencies and its mechanisms for continuing client involvement, the Xchanging model incorporates promising and distinctive means for achieving change and improvement on a sustainable basis - throughout the life of the contract.
- The Xchanging Enterprise Partnership model is particularly suited to the outsourcing of services when service excellence is important, as well as cost; when the existing service has not been a priority for management attention, as is commonly the case within back office functions of large corporates; when the service can benefit from new technology infrastructure, but has not been seen as a priority candidate for investment.
- The Xchanging model embodies an explicit focus on applying superior knowledge, sharing knowledge, and creating and leveraging new knowledge as the road to continuous improvement. In this pursuit, it is relatively unusual amongst the other outsourcing models as we have seen them applied.

Our prescriptions for fee-for-service outsourcing deals have been arrived at through exhaustive research. The advice remains: write complete, detailed contracts; carry out due diligence ahead of signing the contract, retain core in-house capabilities; ensure that you and the supplier have a cultural fit; be sure the supplier has sector and domain knowledge and experience; don't outsource a 'mess'; and write short term (3-5 year) contracts because the circumstances and technologies will change fast. Knowledge can be created and leveraged following this advice, but, we would contend, only to a limited extent. Both sides still bring to the party an unnecessarily constrained focus on knowledge.

But these prescriptions partly arise because knowledge assumptions and contracts between customer and supplier are often flawed, and because all too often this inhibits investment in requisite supplier and client knowledge capabilities. Changing the business, governance and implementation models allows knowledge

strategy a more central, leveraging role in outsourcing. Xchanging's innovations are interesting because they support development of intellectual and social capital essential to the sharing, creation and exploitation of new knowledge. Instead of false signals and misdirected energy, the model actively incents and supports the creation and exploitation of new intellectual property.

At the same time, adopting something like an Xchanging enterprise partnership framework does require a new, different set of assumptions. For example: sign short, incomplete contracts for five years or more. Carry out diligence after contract signing. Let the supplier clean up your back-office mess. Create a clash of cultures if you want to see real back-office improvement. Hire a supplier with generic rather than domain-specific competencies. Given the history of outsourcing these modes of operating may well feel too counter-intuitive. Many may well see adopting these assumptions as too big a cultural step and too risky. At the same time, these changes in management practice on the part of both client and supplier may well be the only real way to release the knowledge potential inherent in the practice of IT and business process outsourcing. And in an ever commoditizing outsourcing market, with ever more demanding customers, it may well be that competing on knowledge becomes the new game in town.

References

Feeny, D., Lacity, M. and Willcocks, L. Taking The Measure Of Outsourcing Providers. Sloan Management Review, April, 46, 3 (2005), 41-48.

Feeny DF & Willcocks LP (1998) 'Core IS Capabilities for Exploiting Information Technology'; *Sloan Management Review*, Spring 1998.

Lacity MC, Feeny DF, Willcocks LP (2003) Transforming Back Office to Front Office: Lloyd's of London and Xchanging's Enterprise Partnership for Insurance Claims Management, Templeton Research Paper.

Lacity MC, Feeny DF, Willcocks LP (2003) Transforming Indirect Procurement Spend: the Story of BAE SYSTEMS and Xchanging's Enterprise Partnership, Templeton Research Paper.

Lacity MC, Feeny DF, Willcocks LP (2002) The Enterprise Partnership as Vehicle for Transforming Back Office to Front Office: the Story of BAE SYSTEMS and Xchanging's Human Resource Transformation, Templeton Research Paper.

Lacity MC & Willcocks LP (2001) 'Global IT Outsourcing: in search of business advantage'; *John Wiley & Sons.*

Feeny DF & Willcocks LP (1998) 'Core IS Capabilities for Exploiting Information Technology'; *Sloan Management Review*, Spring 1998.

Lacity MC & Willcocks LP (1998) 'An empirical investigation of IT sourcing practices: lessons from experience'; MIS Quarterly, September 1998.

Lacity, M., Willcocks, L. and Feeny, D. (1996). The Value Of Selective IT Sourcing. Sloan Management Review, 37, 3, 13-25.

Lacity MC, Willcocks LP, & Feeny DF (1995) 'IT Outsourcing: Maximize Flexibility and Control'; *Harvard Business Review*, May-June 1995.

Lacity MC & Hirschheim R (1993) 'The Information Systems Outsourcing Bandwagon'; *Sloan Management Review*, Fall 1993.

McFarlan FW & Nolan R (1995) 'How to Manage an IT Outsourcing Alliance'; *Sloan Management Review*, Winter 1995.

Monczka RM, Petersen KJ, Handfield RB, and Ragatz GL (1998) 'Success Factors in Strategic Supplier Alliances; the buying company perspective'; Decision Sciences, Vol 29, pp 553-577

Mohr J & Spekman R (1994) 'Characteristics of Partnership Success: Partnership attributes, communication behaviour, and conflict resolution techniques'; Strategic Management Journal, Vol 15, pp 135-152.

Nahapiet, J. and Goshal, S. (1998) Social Capital, Intellectual Capital and The Organizational Advantage. Academy Of Management Review, 23, 2, 242-266.

Stewart, T. (2001). The Wealth Of Knowledge: Intellectual Capital and The Twenty-First Century Organization. Nicholas Brealey, London.

Willcocks, L. and Cullen, S. (2005). The Outsourcing Enterprise: A CEO Agenda For Strategic Advantage. Logicacmg, London,

Willcocks LP, Feeny DF, Lacity MC (2003) Transforming the Back Office through Enterprise Partnering: A study of Xchanging Insurance Services in the London Market, Templeton Research Paper.

Business Process Outsourcing: The Hysteresis Effect and Other Lessons

Anne C. Rouse

Deakin Business School, Deakin University, Melbourne, Australia

Brian J. Corbitt

School of Business Information Technology, RMIT University, Melbourne, Australia

1 Introduction

An investigation of the common sources of advice on outsourcing (like the Outsourcing Institute) reveals that IT outsourcing is being overshadowed by an increasing interest in Business Process Outsourcing (BPO), the fastest-growing segment of the outsourcing market. Recent projections by Gartner predict that as at June 2005, BPO will experience a compound annual growth rate of 9.2% in the next three years, compared to 7.1% for IT infrastructure outsourcing and IT application outsourcing (Gartner 2005).

Just exactly what "BPO" describes is subject to question. Some could argue that all outsourcing is "business process" outsourcing, while many of the examples used (HR, accounts payable, procurement) are really business functions. In one of the earliest "trade" texts on BPO, Halvey and Melby (2000) give two definitions:

> The management of one or more specific business processes or functions (e. g. procurement, accounting, human resources, asset or property management) by a third party, together with the information technology (IT) that supports the process or function (2000:1)

and

> the delegation of one or more IT-intensive business processes to an external provider who, in turn, administrates and manages the selected processes based upon defined and measurable performance metrics. (2000:3)

These are similar to that given by Gartner:

> The delegation of an IT-intensive business process to an external provider who owns, administers and manages it, according to a defined set of metrics" (Gartner 2004:1).

In all three definitions, the key elements are that the process is supported by IT, and that the control and management of the process is handed over to another entity. An early Gartner "BPO model" (summarized in Table 1 below) sheds further light on what the BPO phenomenon embraces.

Table 1: Examples of BPO, by Business Function (after Gartner 2002)

Supply chain management	**Operations**	**Business Administration**	**Sales, marketing, customer care**
• Warehouse inventory • Direct procurement • Transportation/ logistics	• R & D • Contract manufacturing • Analytics/ Quality control	• Finance • HR • Billing • Indirect procurement • Payment services • Other admin.	• Customer selection • Customer acquisition • Customer retention • Customer extension

Table 1, together with these definitions, suggests that BPO is a rather general and poorly defined concept, as there would be few business functions that would not be captured in these broad definitions. In our discussions with organizations promoting BPO the authors observed that it is frequently contrasted with "IT outsourcing" – BPO is seen as outsourcing that involves IT supported processes, but that doesn't involve discontinuities between the IT and the rest of the business process. The redrawing of boundaries should lead to less "tightly coupled" (Orton & Weick 1990) outsourcing, and so fewer problems. We were also told that while IT outsourcing is now recognized to have substantial problems, by outsourcing the whole business process instead of just IT, BPO should produce easier to manage, and more successful outsourcing. Implicit in informants' descriptions, and examples given, is that BPO involves relatively complex processes, in contrast to the outsourcing of simple services, say, cleaning or catering.

Figure 1, below, drawn from our focus group discussions of outsourcing practices (Rouse 2002) illustrates the relationships between forms of outsourcing that are often confused. An important implication of this figure is that it differentiates between BPO; offshore outsourcing (essentially a subset of BPO); and the outsourcing of simple processes that involve no IT support. It is noteworthy that

the bulk of empirical research into the cost savings from outsourcing comes from outsourcing of this latter kind.

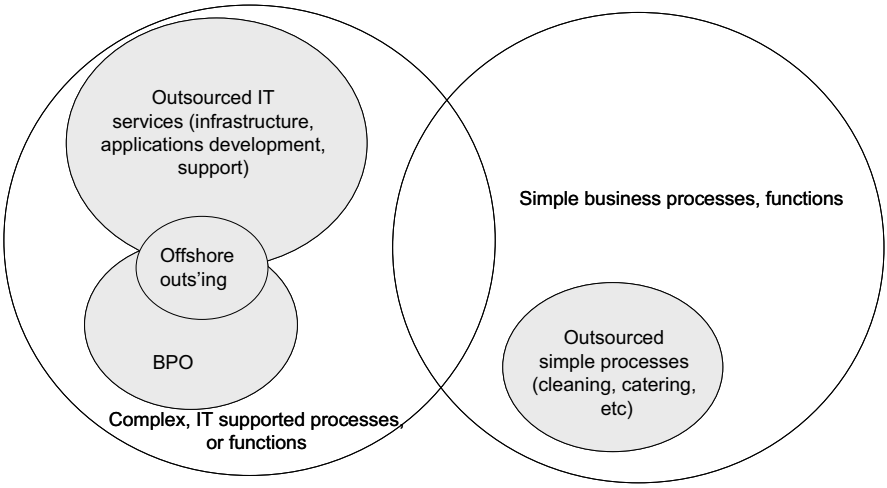


Figure 1: Relationship Between Different Types of Outsourcing

1.1 Previous Research on BPO

Despite the growth of BPO, an examination of the literature reveals very few academic publications on the topic. Instead, much of the literature on BPO is authored by outsourcing vendors (IBM/Price Waterhouse, Accenture, Deloitte, Fujitsu and a range of vendors of off-shore outsourced services). To establish this, a search of the journal databases Proquest (2005) and Business Source Premier (2005) covering the period 1980 to June 2005 was conducted. This revealed that of the 1323 articles with "business process outsourcing" included in the title or abstract, only 11 were described as scholarly or peer reviewed[1]. Only six of these reported empirical research on the phenomenon. Lindner (2004) makes brief reference to conducting interviews while at Accenture (a BPO vendor), but provides no details of the research design or sample; Willcocks, et al (2004) and Lacity et al (2004) report on (the same) vendor's experience of BPO partnerships; and Khalfan (2003) reports on the case of a Kuwaiti BPO failure. Weerakkody et al (2003) make reference to BPO, but the main focus of their case study is internet-based application service provision (ASP). In the final empirical paper, Quinn (1999) refers to consultant-based studies, but his is essentially an opinion-piece rather than empirical research.

[1] The authors excluded papers that were less than 4 pages long, or did not cite any references.

The absence of independent empirical research means that decision-makers choosing whether to outsource a business process have to proceed on faith. It also means that, in terms of Gartner's "Speed of Hype" model (Gartner 1999); BPO is still in the early, "hype" phase. To compound the uncertainty, the bulk of information currently available on the likely success of the strategy comes largely from outsourcing vendors (clearly not disinterested parties) and from outsourcing advisory services (like those of Shaw Pitman, the Meta Group, or the Gartner Group). While these advisors are not direct vendors of outsourcing services, they gain considerable income from advising on outsourcing practices. Such advisors would lose substantial potential fees if they argued that BPO should be avoided, so their advice, too, is not necessarily disinterested.

1.2 The Hysteresis Effect in Complex Outsourcing

The problem for a decision maker investigating whether to implement BPO is that outsourcing (of IT, or of other business processes) when services were previously performed in-house exhibits a systemic property known as "hysteresis". The path out of the outsourced state is far slower, and more expensive, than the path into the outsourced state. This is because having divested itself of the skills and expertise that were required to provide the services in-house, the outsourcing purchaser cannot immediately get those skills/expertise back, even if it decides to reverse its decision only a few months into the arrangement. Furthermore, it is likely that even when the function is rebuilt, there will be a net loss of tacit skills and knowledge. This is illustrated in Figure 2 below.

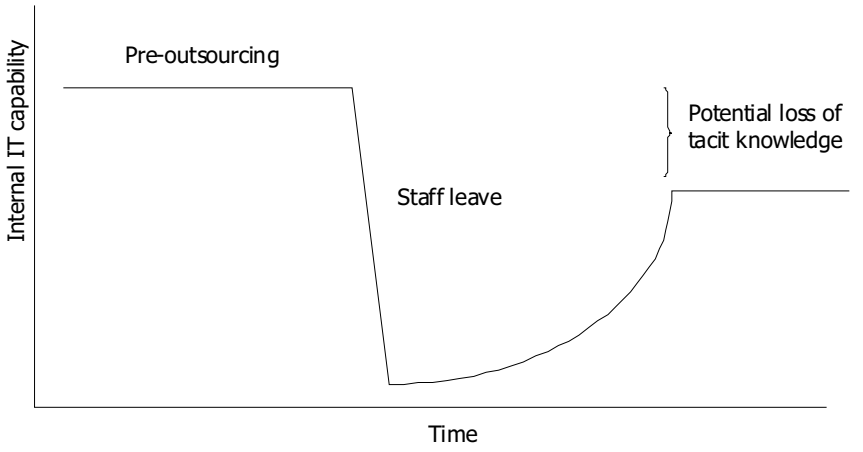


Figure 2: Hysteresis When 'Backsourcing' or Rebuilding an Outsourced Capability

In addition to the time taken to rebuild an outsourced function, the costs of rebuilding or of seeking external expertise (say, from consultants) will be substantially higher than the ongoing costs of providing that function in-house, had the organization not chosen to outsource. Except in unusual circumstances, new recruits expect to be paid a salary premium to entice them to leave their existing employer. As well, an organization that has let go staff in the past will probably have to pay a premium to overcome its loss of reputation as a reliable and stable employer. Thus, staffing costs will be higher than before the outsourcing took place. There is a further, substantial one-off cost. This is for the organizational and financial costs of redesigning and staffing the re-insourced function. These costs are illustrated in Figure 3 below.

Because of these forces, while outsourcing decisions are not, technically, irreversible, the costs in terms of organizational disruption, and financial costs, of bringing services back in house ("backsourcing" or re-insourcing) mean that few organizations adopt a re-insourcing strategy, even when quite dissatisfied with an outsourcing arrangement (Rouse 2002). Instead, organizations typically seek to move to another, hopefully more satisfactory, outsourcing arrangement, even where that might be far less attractive than the original in-house delivery. The evidence from large-scale survey research into IT outsourcing's success (Rouse & Corbitt 2003) is that only a minority of organizations report their arrangements as satisfactory, implying that many are caught in this "can't go back" bind.

Certainly, the trade literature on BPO is relatively cautious. A McKinsey article (Bloch & Spang 2003) argued that like IT outsourcing, BPO too is quite risky, with around two thirds of organizations failing to get some or all expected benefits, and 30% forced to terminate the arrangement. However, the basis for this claim is unclear. On the basis of their internal research, Gartner has suggested that over the next two years up to 60% of customer service-related BPO will fail to deliver cost savings expectations (Bona 2005). Gartner and McKinsey are more cautious than many other consulting groups, although some consulting houses' additional role as BPO vendors may color their view of the strategy. Certainly BPO is being "talked up" generously by interested parties, who tend to downplay the associated risks. Despite these caveats, there are trade reports of cost savings of over 20% being obtained (40-50% for offshore BPO) suggesting that in the right circumstances, BPO is a very attractive proposition.

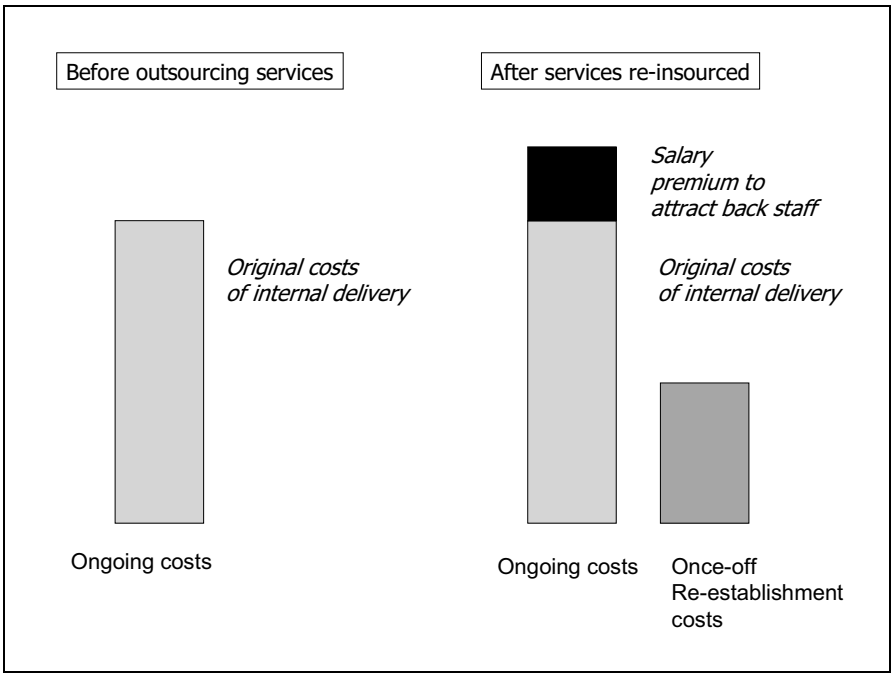


Figure 3: In-house Costs Before and After Outsourcing then Backsourcing a Capability

This paper considers two recent cases of organizations that contemplated BPO. Necessarily, there is no information yet on the outcomes of their decision. Instead, this paper contrasts their expectations with what has been established in the existing literature on the success of outsourcing. It then synthesizes these two sources of data to suggest some key lessons that can be applied when contemplating BPO.

2 Method

This paper considers the experience of two Australian case studies we encountered as part of our focus groups and case study investigations into outsourcing practices carried out between 2001 and 2003. According to Gartner, Thailand, Australia and New Zealand have the highest rate of adoption of BPO in the Asia Pacific region (Gartner 2004). These two case studies were undertaken as part of a larger study into outsourcing practices, in which 24 organizations were investigated. The majority of sites were involved in traditional IT outsourcing (of either IT infrastructure, or IT systems development). These two cases, however, were

contemplating or just beginning a BPO arrangement. Details of the two BPO-related cases are included in the following table.

Comet is the pseudonym for the largest business division in an Australian organization that carries out environmental investigations for commercial and government organizations. During 2003 Comet conducted a review of the services that might be outsourced within the division, concluding that neither its core business (analysis and reporting) nor the apparently "commodity" process of environmental data gathering should be outsourced, although certain accounting services might be in the future. YourBank is the pseudonym for a medium-sized Australian banking and finance organization that considered the outsourcing of several of its back office accounting function. In 2003, YourBank chose to outsource these functions, expecting to receive savings in excess of 20%.

Table 2: Case Study Details

Pseudo-nym*	**Status**	**Size**	**Industry**	**Process**	**Informants**
"Comet"	Investi-gated and rejected BPO	$AU200 million	Environ-mental research	Field data gathering	BPO project manager, BPO consultant
"YourBank"	Investi-gated and introduce d BPO	$AU10 billion in assets managed	Banking	Back office processing	BPO project manager

*As part of gaining University Ethics Committee approval for the study, informants were promised anonymity

Interviews with informants were semi-structured, and asked about the organization's understanding of what BPO was, their plans for outsourcing, the reasons for choosing or not choosing to outsource a business process, and the difficulties they had encountered so far in arriving at a decision and initiating outsourcing. Informants were also asked about their major concerns in relation to BPO, and their major sources of advice on the likely success of their BPO arrangement.

3 Case Study Findings

3.1 Motivations

In both cases, the move to BPO was driven largely by a push to cut operational costs. However, in each case the informant pointed to competitors who were themselves outsourcing the business process, or contemplating this, suggesting that the outsourcing "bandwagon" effect that Lacity and Hirschheim (1993) identified is still very much in operation.

In the case of Comet, the drive to cut costs was augmented by a directive from the parent organization that Comet market test the outsourcing of various labor-intensive services. The motivation behind YourBank was clearly financial, influenced by the fact that the company had recently decided to adopt an aggressive role in their business sector, and was seeking opportunities for cost cutting in their non-core business. YourBank also expected that by outsourcing, they would be able to concentrate on other, more core, business activities.

3.2 Evaluations

In both sites the decision to outsource (or not) a particular business process was made after over 6 months' investigations. In the case of Comet the organization had made the decision not to outsource its scientific data gathering, but to consider future outsourcing of more generic services (such as accounts receivable). In the case of YourBank, the decision had been to outsource to the best bidder – a multinational IT outsourcing vendor that had recently moved into the provision of back office financial services.

The processes behind the decisions were revealing. YourBank was expecting savings of 20 to 30% based on their comparison of the costs of in-house delivery and the winner's bid. Since their arrangement had only just begun, it was not clear whether they would actually reap the promised savings. On the advice of consultants, their detailed costing model did not include the activities associated with market testing, bidder evaluation, or transition. Our focus group studies reveals that these "transaction costs" are traditionally excluded by outsourcing consultants, on the basis that good performers should always be benchmarking internal performance against competition, and that the costs of going to the market are once off. However this argument ignores the fact that such costs are incurred repeatedly, particularly when contracts are kept short. These costs are magnified when ─ as happens in over half of BPO contracts, according to Bloch and Spang (2003) ─ the contract has to be renegotiated before its completion. Furthermore, the costs of bid evaluation and true market testing are substantially higher than the costs of periodic benchmarking.

Comet's decision not to outsource its data gathering function, was not on the basis that it would not save money initially. Instead it was based on the fact that it was likely to be faced with a monopoly situation (given there were less than 5 potential bidders worldwide, some of whom might exit the marketplace if they did not win the Comet account). Comet management reasoned that in such a situation initial cost savings could quickly be eradicated when the first contract terminated, leaving them with no recourse but to pay whatever the vendor demanded. However, Comet was not against BPO in principle, and identified several areas where BPO should be explored in future – largely those that were generic in nature, and where there was a growing vendor market (e.g. some HR and accounts receivable processes).

Comet management was also concerned about maintaining quality control. While the field data collection appeared to be relatively low in skill (and had often been, in the past, carried out by volunteers) it was critical to the quality of the analytical models that Comet prepared. Decision makers believed that an outsourced commercial provider would not necessarily be able to command the loyalty that Comet had been able to garner from volunteer data collectors, who saw the data gathering as a community activity, in most cases being users of Comet's output down the track. Management were also concerned that their requirements were idiosyncratic (in economic terms, "asset specific"), and relied on substantial tacit knowledge. A temporary failure on the part of an external vendor, or even minor errors, might corrupt longitudinal data sets, permanently reducing their value.

YourBank had four final bidders to its request for tender, though it is revealing that it chose a vendor that had no previous experience in providing back end banking functions – the vendor did have, though, experience in providing IT infrastructure and development services. While not one of the first tier outsourcing vendors (i.e. IBM, EDS, CSC), the vendor had an international presence and a number of references sites in the banking industry that could be investigated in relation to its provision of IT services. Nevertheless, the fact that the vendor had not delivered banking-related financial services before introduced a substantial element of risk.

3.3 Sources of Advice

YourBank reported that the major sources of advice on their likely success with BPO included trade journals (in the banking field), 'Big 4' management consultants, and the vendors themselves. Comet reported that the major impetus for outsourcing was their parent company, and the management literature that senior management had been exposed to. This encouraged market testing of all key processes for their outsourcing potential. Comet had engaged an independent outsourcing advisor for a period of 6 months to help them make the decision whether to outsource a range of business processes. He was employed by a boutique consulting company that did not have an outsourcing advisory service.

Comet were also influenced by several peer organizations that had undertaken investigations of the potential for outsourcing and had arrived at the conclusion that it was difficult in high-technology scientific research organizations.

3.4 Concerns

The major concerns informants reported were in the following areas:

- Small marketplace of potential bidders – and problems finding vendors with a track record in the business process to be outsourced (Comet)
- The requirement (imposed by the market) to accept a standardized version of the business process, that did not necessarily match the purchasing organization's needs (Comet, YourBank)
- Lack of leverage with the BPO vendor (Comet, YourBank)
- Concerns about what would happen at the end of the first contract, and the danger of "lock in" (Comet)
- Concerns that the contract is a poor mechanism for controlling the quality of the business process delivery, and that despite having outsourced the service, the level of managerial attention that needed to be devoted to dealing with the vendor might be high (Comet)
- Concerns that the costs of overseeing the arrangement, combined with the transaction costs (measuring internal costs, developing the bid, seeking vendors, choosing vendors, changeover) would eat into the potential savings (Comet)
- Inability to find a vendor with substantial experience in the services outsourced operating in the local marketplace (YourBank, Comet).

4 Discussion

A limitation of all case study research is that the cases may or may not be representative of organizations generally (Yin 1994). However, this paper does not attempt to suggest that these organizations are necessarily typical. Instead, this discussion will concentrate on the evidence provided by the literature to date on outsourcing (most of which comes from the IT outsourcing domain), and the implications this has for Comet and YourBank.

4.1 Motivation

The evidence from a large body of literature is that a major motivation for outsourcing is to reduce operational costs, so in this regard both organizations are quite typical. However, the evidence for *actual* savings from outsourcing is at odds with the rosy pictures painted by vendors and academics. According to a detailed meta-analysis conducted by Hodge (1996) average savings for outsourcing of low-complexity services (e.g. cleaning, catering) is in the realm of 8 to 12% (*excluding* the management costs and initial costs of market testing and establishing the contract). Savings for high complexity services were substantially lower. Domberger (1998) determined that while savings for low-complexity services were often 20% or more, those for high complexity services (particularly IT-related) were negative, i.e. costs rose after outsourcing. Like Hodge, Domberger did not include management costs or initial contracting costs in his analysis. Rouse and Corbitt (2003) in a study of 1000 large Australian sites reported that savings for IT outsourcing were infrequent ─ only 7% reported achieving "substantial" savings when outsourcing IT, while only 42% reported any savings at all. Over a fifth of their respondents reported that costs increased. The authors' qualitative studies suggested that the low savings from IT outsourcing were due to high management costs, and high costs associated with changes needed to maintain business flexibility. Rouse and Corbitt also reported that the costs of setting up the outsourcing arrangement and choosing the vendor (transaction costs) were substantial when compared to the relatively small cost savings. On the basis of this evidence, while it is theoretically possible that YourBank could achieve savings of 20%, it is unlikely, unless its own processes were very inefficient to start with.

It was not clear from the information provided by our case study informants whether YourBank's vendor intended using offshore labor. Savings of 20% or more are frequently only possible if the vendor uses this strategy, in which case "salary arbitrage" is the major source of reduced costs. Offshore outsourcing introduces a range of new challenges and risks, which need to be planned for if the BPO business case depends on this source of labor. As with BPO, evidence about the extent of savings achieved from offshore outsourcing is still only anecdotal, as no systematic studies have yet been done.

4.2 Biases in the Evaluation Process

In an important article, Ang and Straub (1998) established that decision makers who adopted outsourcing in the US Banking industry tended to downplay the substantial transaction costs involved, instead concentrating on the production costs they would save from outsourcing. Those who considered, but rejected outsourcing, tended instead to focus on the transaction costs involved. This may be related to the common cognitive bias (the "confirmation" bias), where decision

makers are frequently observed to pay attention only to information that tends to confirm an existing world view. Certainly, our two case studies exhibited the phenomenon.

YourBank based their decision to outsource back office accounting functions largely upon their comparison of the difference between their projected in-house production costs and those of the winning vendor. Yet research conducted by Rouse (2002) and Rouse and Corbitt (2002) indicates that such a comparison is often erroneous because the projected savings are frequently eaten up by unforeseen changes. They are also reduced by the transaction costs associated with finding, selecting and briefing vendors, and managing the contract on a day-to-day basis. Rouse and Corbitt also identified that the organizational attention that was associated with changing vendors was so high that many organizations were choosing at the end of the first contract to remain with their current vendor without market testing, in which case their production costs were likely to be higher than the market rates (and previous in-house production costs).

YourBank's decision-makers were also strongly influenced by the banking-related trade literature, which suggested that a number of banks (particularly North American banks) were reaping substantial financial benefits from the strategy. Yet the evidence for such savings tends to be anecdotal, and does not separate out the savings attributable to the use of offshore labor, rather than outsourcing. The fact that YourBank chose to outsource to a vendor with no track record in the processes involved suggests a thin vendor marketplace, a situation that transaction economists warn will usually lead to opportunistic price rises in the future when few or no bidders bid against the incumbent vendor for future contracts. There is also the possibility that the vendor was bidding low in order to enter that service market, a situation that would change once the vendor established itself with a number of clients.

Comet, on the other hand, was particularly focused on the transaction costs they would expend in ensuring the service quality from outsourced data collection. They were also concerned about the danger of "lock in". Unlike the banking industry, the number of potential purchasers in their scientific field worldwide is relatively small (less than 300 corporations) and there are currently only a handful of vendors worldwide engaged in supporting the industry, none in Australia. Without a robust vendor marketplace, decision-makers at Comet felt there was no guarantee that there would be alternative bidders in future. In addition, they were concerned that specialist staff who moved from Comet to the outsourcing vendor might leave the industry completely, resulting in a major loss of intellectual capital not just for Comet, but for that industry in Australia. In fact, Comet is a classic example of a situation that transaction economists suggest does *not* encourage outsourcing: it had relatively unique quality assurance requirements, a small number of potential vendors, and a process that involved substantial tacit scientific knowledge.

4.3 Outsourcing, "Impression Management" and Cognitive Biases

YourBank respondents were quite confident that their decision to outsource back end functions would lead to savings and performance improvements, despite the evidence that outsourcing often does not produce these results. In their annual report, they argued that "disciplined, cost effective outsourcing of non-core functions to professional suppliers[2]" was one of the four key strategies they were using to achieve market leadership.

In the early 90s, Loh and Venkatraman (1992) demonstrated that outsourcing announcements tend to be followed by rises in share prices, as the marketplace factors into share prices the expected efficiencies/cost savings predicted for outsourcing. An organization that publicly projected substantial benefits from outsourcing when an arrangement was first entered into is then under pressure to announce that these savings (or alternative benefits) did eventuate, so as to avoid a commensurate drop in share price. Yet much of public perception about outsourcing's success is based on such pronouncements. This has several implications. The first is that public announcements about outsourcing "success" and "savings" need to be treated carefully – such announcements may be playing an active role in "impression management". Second, failures to obtain expected benefits are unlikely to be made public, as to release this information could have deleterious effects on share prices. Related to this is the fact that individuals within organizations would be subject to significant pressure to view outsourcing arrangement as "successful", and would both consciously and unconsciously – because of the "confirmation bias[3]" described by Tversky and Kahneman (1974) – be unlikely to take note of information that contradicted earlier positive expectations for outsourcing. These forces may help to explain why large-scale anonymous survey data on IT outsourcing's success (e.g. Rouse & Corbitt, 2003; Domberger, 1998; Aubert et al, 1999) has been far less positive than published case study reports.

4.4 Other Issues and Concerns

The banking industry in North America is characterized by a large number of relatively small banks (often much smaller than YourBank) operating at a local

---

2 Quotation excerpted from YourBank's 2004 Annual Report.

3 The authors demonstrated that, in a range of settings, decision makers tend to notice, give greater weight to, and actively seek out evidence that confirms their prior beliefs. Decision-makers also tend to ignore and not seek out evidence that might discount these beliefs. The bias is more pronounced if the decision maker has publicly announced his beliefs.

state level, resulting in a sizeable body of potential purchasers with relatively homogenous needs. However, this is not the situation in Australia, where a small number of comparatively large banks tend to operate nationally. This may explain the thin vendor marketplace in back-end banking services. In the North American marketplace, many of the savings associated with BPO are obtained because the vendor can provide a range of standard ("plain vanilla") services to a large number of clients, and so amortize costs, leading to lower fees and a cost-saving for the purchaser. Vendors are also less dependent on each individual client. However, the trade-off is that purchasers must accept these vanilla services.

YourBank staff were somewhat concerned that as their chosen vendor gained additional clients, they would have less sway in being able to demand business processes that matched their unique needs. However, they believed that their "first mover" role with the vendor would help avoid this situation. Our focus groups (Rouse 2002) suggested that this is not necessarily the case. We found that as the vendor picks up additional clients (necessary for the vendor's profitability and viability) the earlier customers lose leverage over the vendor. Theoretically, the purchaser would be compensated by lower prices because of the economies of scale the vendor would get in a more robust marketplace, but this did not always occur for our informants, because the initial bids made by vendors seeking a toehold in the marketplace were deliberately unprofitable, and prices rose substantially at the end of initial contracts. In robust marketplaces, with a large number of purchasers with common (vanilla) requirements, this situation doesn't occur, however few BPO arrangements are yet of this kind.

The evidence of widespread problems with enterprise resource planning (ERP) systems illustrates that many organizations over-estimate their capacity to rely on standard, vanilla (often marketed as "best practice") processes (O'Leary 2002). This evidence was cited by the informants from Comet as justification for their concerns about BPO. A similar phenomenon is certainly likely to be at work with BPO. It is often only when a process is outsourced that purchasers realize that what they had thought was inherently-understood in their requirements statement means something different to their vendor, leading to expensive changes to make the process match the organization's needs, as well as considerable tension between the organizations (Lacity & Hirschheim 1993). In certain circumstances the costs to the purchaser of "bending" the outsourced business process are so high that the organization is advised to adapt its other business processes to fit in with the outsourced business process, itself an expensive endeavor. While the cost savings associated with the outsourcing may warrant organizational change of this type, particularly if the outsourced process is relatively self-contained, the literature on IT outsourcing to date suggests that only a minority of purchasers recognize, and learn to adapt to, the trade-offs they need to make to get high levels of cost savings.

5 Implications and Recommendations for Decision-Makers

The insights these cases have provided into Comet and YourBank's deliberations, considered in the light of other research into the experiences of those who choose to outsource, suggest several lessons for decision-makers. These include:

Outsourcing works best when you have a requirement that is common to many purchasers

When BPO leads to substantial costs savings, it tends to be because the vendor can obtain significant economies of scale, or scope, and so provide a lower-cost service despite the need to factor in a profit margin. Such economies tend to occur when there is a large body of purchasers with common needs. In this environment the risk to purchasers is reduced because the large number of purchasers attracts vendors and leads to a robust marketplace. Hence if the original BPO arrangement proves unsatisfactory, the purchaser can move onto another vendor. Neither YourBank nor Comet were in this situation, although a vendor marketplace could grow for the services contracted by YourBank. That this might not happen was a risk that YourBank seemed to discount in its eagerness to obtain cost savings.

Comet's determination that it would require a highly customized service, and that the vendor marketplace would be thin, while cautious, seem appropriate, as these situations provide the conditions for opportunistic behavior. Protecting against opportunism would be costly both for Comet and for its vendor (which would be highly dependent on Comet's custom), so the likelihood of substantial cost savings are low. Furthermore, without a robust marketplace, Comet would be highly susceptible to a "lock in" situation. Many of the services being offered by BPO vendors are common, well-established processes (like payroll and accounts payable) that fit the "vanilla" description, and hence are relatively low-risk. However, like YourBank's vendor, many BPO vendors are promoting newer services where they have no strong track record, hoping to "make a market". These latter forms of BPO are substantially more risky.

Recognize what you are trading off

The experiences of IT outsourcing are that many vendors over-promise, a situation that does not come to light until the contract has begun, and the option of turning back is no longer there (Kern et al 2002). A common problem is that purchasers find that services they thought were included in their contract are not, frequently because the terms used in the contract are general and open to interpretation (Lacity & Hirschheim 1993). The experience of over a decade of research into IT outsourcing is that despite labels like "partnering" and "alliance" outsourcing is a fee-for-service arrangement, with substantial risks for the purchaser (Hirschheim & Lacity 2000). Understanding exactly what is being purchased and what is being

given up in order to get cost savings (the trade-offs) is critical to successful outsourcing.

Vendors do not willingly provide "for free" services that are not specified in the contract, so expectations of "added value" as part of an ongoing relationship are unlikely to be met without additional costs (Rouse 2002). In many cases what is being traded off includes ad hoc advice, a customized service, or short-term flexibility. Where the purchaser can do without these aspects, or is prepared to pay a premium price for them, BPO is likely to be successful (Rouse 2002).

Another area where BPO is likely to be successful is where the purchaser is seeking fast access to a particular service. While such outsourced arrangements are often more expensive in the longer term, the purchaser is able to obtain the services when it needs them, and benefits from immediate access to excess capacity, or a faster scale-up period (because the vendor has more expertise at introducing the service than the purchaser). In recognizing and accepting this cost vs. speed trade-off, many organizations find their outsourcing meets expectations. Others, though, who expect to get *both* speed and cost savings are frequently disappointed.

Understand the source of apparent cost savings provided by the vendor

In view of the failure of over a decade's research to substantiate high levels of cost savings for outsourcing of all but very simple services (catering, cleaning, etc), a healthy skepticism is required on the part of purchasers in relation to proposed savings. If a vendor offers substantial savings for an IT-supported business process, it is important to investigate what the sources of these savings are. In many cases the source is the willingness of the purchaser to trade-off idiosyncratic requirements by accepting a "vanilla service" where the vendor can reap economies of scale or scope (discussed above). In other cases the source of savings is salary arbitrage, and while offshore outsourcing might suit many organizations, it does introduce a range of new problems, and may not, in the long-term be sustainable. Other potential sources of savings are a vendor's capacity to invest in productivity enhancements (such as remote support of computer systems) and ongoing process improvements.

Many of these benefits can also be replicated in-house, and one choice the purchaser might make is to follow Lacity and Hirschheim's (1995) advice to implement these cost cutting measures before, or even instead of, outsourcing. Alternatively, the purchaser should contract to ensure the sources of savings do exist. For example, if the vendor claims technology investments as the source of cost savings, purchasers should contract for, and verify, that these investments are actually made, as some vendors prefer to eke out old technologies that have been written off. This strategy can be highly profitable to a vendor but leads to a noticeable reduction in service quality.

Analyzing the source of savings also allows the purchaser to better plan for (and contract for) contingencies, such as changes in foreign exchange rates (for offshore outsourcing); changes in technologies supporting the business process, or legislative changes (that might call for higher levels of customization from the vendor).

Factor in ALL the costs in your outsourcing business cases

Given the extent of research into outsourcing that has labored this point, it may seem superfluous to suggest that organizations pay attention to their financial analyses when outsourcing, but the evidence from a range of sources is that this is still poorly handled. Both Comet and YourBank spent substantial time and effort on their financial business case, however it appears that some important transaction costs for YourBank were left out of their analysis. Because of the hysteresis effect discussed above, the costs to revert outsourcing arrangement are much higher than the original in-house service delivery – yet the existing evidence suggests that having to revert occurs quite frequently with BPO (Bloch & Spang 2003), and a contingency budget should be factored into the business case.

The ongoing transaction costs for seeking out, negotiating with, and if necessary changing a vendor may occur every three to five years (depending on the length of the contract), and should also be factored into the business case. If the organization chooses to avoid these costs by staying with an existing vendor, without competition it is likely that the vendor's costs will rise substantially vis-à-vis market prices. Either way, substantial costs are involved.

Other important costs are those to manage the BPO arrangement. The evidence from IT outsourcing research is that for complex services these can be between 5 and 8% of the contract price (Lacity & Willcocks 2001). If the BPO case includes a much lower management allowance, decision makers should ask why *their* BPO arrangement is likely to be so inexpensive to manage. As part of the cost of management, purchasers may need to include contingencies for obtaining strategic advice related to the business process from an entity other than the vendor (who cannot be expected to give independent advice).

The business case depends on the purchaser documenting the full range of services that are provided by its internal group, so that the vendor can offer an alternative price. Our studies of 24 outsourcing cases revealed this to be a major problem, as many important tasks are often missed through the use of general terms and labels. Unless the purchaser knows (before it loses the services) exactly what it is getting, the price the vendor quotes is probably misleading, as it may be the price for a different set of services. Establishing what is actually delivered internally can take many months, and is costly (another transaction cost often missed) which is why many of the cases we have seen attempt to shortcut the process, despite its criticality to successful outsourcing.

6 Conclusion

In the absence of empirical BPO research, the best evidence we currently have on the success of complex, IT-supported business processes comes from the body of research into IT outsourcing. This literature suggests that in certain circumstances (about one-third of the time) outsourcing is quite satisfactory and provides good value to purchasers (Rouse & Corbitt 2003). However, in many cases outsourcing fails to meet (perhaps unrealistic) expectations. At the time IT outsourcing was first advocated, promises of 30% savings and substantially improved quality were similar to those being made now for BPO, but the contemporary evidence is that many promises were unattainable. This suggests that decision makers considering BPO should plan carefully and move cautiously. Outsourcing of services beyond simple, well-codified activities is still high risk, and using the definition at the start of this paper, much BPO would fit this description. BPO should be given the attention that is paid to any other risky strategies.

References

Ang, S. & Straub, D. W. "Production and transaction economies in IS outsourcing: A study of the US banking industry," *MIS Quarterly*. 22 (4). 1998, pp. 535-552.

Aubert, B., Patry, M., & Rivard, S. "L'impartation des services informatique au Canada: Une comparaison" 1993-1997 (Outsourcing of IT services in Canada: A Comparison 1993 - 1997). M. Poitevin (Ed), *Impartition: Fondements et analyses (Outsourcing: Foundations and Analyses)* (pp. 202-220). 1999. Montreal: Canada: University of Laval Press.

Bloch, M. & Spang, S. "Reaping the benefits of business-process outsourcing," *McKinsey on IT*. 2003, Fall.pp 1-9.

Bona, A. "The myths and realities of customer service outsourcing". *Gartner Presentation to the 2005 Customer Relationship Management Summit.* London, 24 March, 2005. Available on : www.gartner.com/press_releases [Accessed 15 June 2005].

Domberger, S. *The contracting organization: A strategic guide to outsourcing*. Oxford University Press, Oxford, UK, 1998.

Business Source Premier. Available through *Ebscohost. ejournals.ebsco.com*. [Accessed 15 June 2005]

Gartner Group www3.gartner.com. Quoted in "Rust E-Research: Outsourcing Industry Set for Growth". *http://tc106.metawerx.com.au/Rustreport/rust_newsletter_story.jsp?id=115*. 2005. [Accessed 15 June, 2005]

Gartner Group "Vendors seek clear role in SMB market," *Gartner Dataquest Report ITSM-NA-MT-0108*. 2004. Available from www3.gartner.com. [Accessed Jan 2004].

Gartner Group "When to leap on the hype cycle," *Decision Framework DF-08-6751*, 1999. Available from www3.gartner.com. [Accessed Jan 2003].

Gartner Group "Gartner's BPO Model" in *Business Process Outsourcing Market. Report M-15-3742*. 2002. Available from www3.gartner.com. [Accessed Jan 2002].

Halvey, J. & Melby, B. *Business Process Outsourcing. Process, Strategies and Contracts*, John Wiley & Sons, 2000.

Hirschheim, R., & Lacity, M. "The myths and realities of information technology insourcing," *Communications of the ACM*, 43(2), 2000, pp. 99-107

Hodge, G. A. *Contracting out government services: a review of international evidence*. Montech, Melbourne, Aust, 1996.

Kern, T. Willcocks, L. & Van Heck, E. "The winners curse in it outsourcing: strategies for avoiding relational trauma," *California Management Review* 44(2). 2002, pp.47-69.

Khalfan, A. "A case analysis of business process outsourcing project failure". Business *Process Management Journal.* 9(6). 2003. 745-760.

Lacity, M. C. & Hirschheim, R. *Information systems outsourcing: Myths, metaphors and realities.*. Wiley, Chichester, England, 1993.

Lacity, M. C. & Hirschheim, R. *Beyond the information systems outsourcing bandwagon: The insourcing response*. Wiley, NY, 1995

Lacity, M. C. & Willcocks, L. *Global information technology outsourcing: In search of business advantage*. Jossey-Bass, NY, 2001.

Lacity, M. C., Willcocks, L. & Feeny, D. "Commercializing the back office at Lloyds of London: Outosurdcing and strategic partnership revisited". *European Management Journal*. 22 (2), 2004. pp. 127-141.

Lindner, J. C. "Transformation outsourcing." *MIT Sloan Management Review*. 45 (2), 2004, pp.52-59.

Loh, L. & Venkatraman, N. "Stock Market Reaction to IT Outsourcing: An event study". *Sloan School of Management, Massachusetts Institute of Technology, Working Paper*. 1992.

O'Leary, D. *Enterprise resource planning systems: Systems, lifecycle, electronic commerce, and risk.* Cambridge University Press, NY, 2002.

Orton, J.D. & Weick, K. E. "Loosely coupled systems: a reconceptualization," *Academy of Management Review*. 15:2, 1990, pp. 203-223.

Proquest, *Proquest Online*. http://proquest.umi.com/pqdweb. [Accessed 12 March 2004].

Quinn, B. "Strategic outsourcing: Leveraging knowledge capabilities," *Sloan Management Review*. 40 (4), 1999, pp. 9-24.

Rouse, A. C. *Information technology outsourcing revisited: Success factors and risks*. Unpublished PhD Thesis. University of Melbourne, Melbourne, Australia, 2002.

Rouse, A. C. & Corbitt, B. “Revisiting IT outsourcing risks: Analysis of a survey of Australia's Top 1000 organizations,” *Proceedings of the Fourteenth Australasian Conference on Information Systems*. Edith Cowan University, Perth, Australia. 2003.

Rouse, A. C., Corbitt, B. & Aubert, B. “Perspectives on IT Outsourcing success: covariance structure modeling of a survey of outsourcing in Australia”, *Cahier du GreSI* (Canada) Vol 1 No 3, 2001, pp.1-18, Also published in Econpapers .(econpapers.hhs.se).

Rouse, A. C. & Corbitt, B. “The Australian government's abandoned infrastructure outsourcing program: "Fiasco" or relatively typical?,” *Proceedings of the Thirteenth Australasian Conference on Information Systems*, pp. 699-710, Victoria University, Melbourne, Australia, 2002.

Tversky, A. & Kahneman, D. “Judgment under uncertainty: Heuristics and biases”. *Science,* 185, 1974.pp. 1121-1131.

Weerakkody, V., Currie, W., & Ekanayake, Y. “Re-engineering business processes through application service providers: Challenges, issues and complexities”. *Business Process Management Journal*. 9 (6). 2003. pp. 776-785.

Willcocks, L., Hindle, J., Feeny, D., & Lacity, M. “IT and business process outsourcing: The knowledge potential”. *Information Systems Management,* Summer. 21 (3).2004. pp. 7-16.

Yin, R. *Case study research: Design and methods 2nd ed*. Sage Publications, CA, 1994.

Part VII:

Offshoring and Global Outsourcing

Business Process Offshoring to India: An Overview[1]

Guru Sahajpal

Senior Associate, Banking and Capital Markets Consulting
Infosys Technologies Limited

Manish Agrawal

Department of Information Systems and Decision Sciences, University of South Florida, 4202 E. Fowler Ave., CIS 1040, Tampa, FL 33620, Tel: (813) 974-6716, Fax: (813) 974-6749, Email: magrawal@coba.usf.edu

Rajiv Kishore[2], H. Raghav Rao

Department of Management Science and Systems, School of Management, State University of New York at Buffalo, 325N Jacobs Management Center, Buffalo, NY 14260-4000,
Tel: (716) 645-3507, Fax: (716) 645-3507, Email: rkishore@buffalo.edu,
Tel: (716) 645-3425, Fax: (716) 645-6117, Email: mgmtrao@acsu.buffalo.edu

1 Introduction

Over the last 10 years, reduced international trade barriers have resulted in an increasingly interlinked global economy and intense global competition, putting pressure on business managers across the world to cut cost of operations. Simultaneously, improved telecommunication and data-communication capabilities have opened up new opportunities for spreading business operations at locations across the world that offer significant cost and quality advantages.

[1] We are grateful to the National Science Foundation for supporting this research through grant number 9907325. Any opinions, findings, and conclusions or recommendations expressed in this research are those of the authors and do not necessarily reflect the views of the National Science Foundation. The authors are very thankful to Pramod Kakkanath for his research assistance.

[2] Corresponding author.

Reorganization of business models to leverage benefits of business process outsourcing (BPO) and to allow bringing the focus back on core competencies has become a key strategy pursued by large corporations and is gradually becoming more accepted in smaller business organizations as well.

Typically business processes that are outsourced involve the contracting of specific business tasks, such as payroll processing, to third-party service providers. Initially business process outsourcing was pursued as a cost-saving measure for those tasks that are required to be performed by a firm but upon which the firm does not depend to maintain its competitive position in the marketplace. However, firms are now outsourcing more customer-facing tasks as well with the maturing of the BPO market. Therefore, the main types of business process outsourcing observed includes: back office outsourcing that includes business functions such as billing or purchasing that are internal to the firm, and front office outsourcing that includes customer-related services such as marketing or technical support that are externally oriented. Today, the numbers of service categories for business process outsourcing have also expanded. The providers of business process outsourcing services are typically expected to return a series of benefits including a combination of higher expertise, lower costs through economies of scale, better scalability, improved methodologies, and greater flexibility of service.

This paper provides an overview of the offshore business process outsourcing phenomenon and describes a case study of General Electric's BPO operations in India. Section 2 lays out the background of outsourcing and describes the global BPO market as well as the new categories of services that are being outsourced. Section 3 focuses on India as a destination for BPO services. Section 4 discusses the various forms of business process outsourcing that are evolving in the overseas marketplace. Finally, section 5 discusses GE as a case study in offshore business process outsourcing.

2 Offshore Outsourcing and the Global BPO Market

Business process outsourcing makes it easier to achieve growth through mergers and acquisitions; it can make it easier to downsize; it improves the prospect of selling a business unit; and it leads to tighter linkage between strategy and information technology (Kerry and Marcolin, 1994). Outsourcing has been identified as one of the key reasons that helped US firms maintain their global domination in packaged software (Carmel, 1997). In the practitioner's parlance, business processes that are contracted outside a company's own country are known as offshore outsourcing; if they are contracted to a company's neighboring country they are known as nearshore outsourcing. Offshore services, originally offered to counter IT skill shortages and ballooning US salaries, have now become

mainstream due to the economic slowdown in the US and the increased focus on cost reduction. A study recently noted that the offshore outsourcing, or offshoring, phenomenon is maturing and companies are now offshoring their core IT work with a proactive strategic focus on multiple sources of competitive advantage including innovation, world-class talent, and skills (Carmel and Agarwal, 2002).

Table 1: Global BPO Market

United States	**Europe**	**Asia/Pacific (including Japan)**
• Strong growth in administrative services, payment services and HR outsourcing • Growth in finance and accounting outsourcing • Strengthening demand for indirect procurement outsourcing	• Strong existing demand from public sector in the United Kingdom and multinational enterprises with European headquarters • Current demand mostly concentrated in the United Kingdom and Ireland • Primary BPO growth expected in France, Germany, Spain, Italy and Scandinavia • Demand for administrative services, payment services, and finance and accounting will be most significant because of EMU convergence and cross-border trading • Key emerging competitors to Indian BPO providers are from Hungary, Poland and the Czech Republic	• Current demand mostly concentrated in Australia, New Zealand, the Philippines and Japan • Primary BPO growth expected in New Zealand, Singapore, Indonesia and Taiwan • Public sector expected to be the leading source of opportunity

Offshore outsourcing allows users of IT Services to benefit from favorable conditions in the offshore location – lower labor costs, ample supply of well-educated labor and quality of service. The offshore model thrives based on the division of labor. Services are disaggregated and those service components that need to remain in the US are retained onsite while those that need not be are shipped offshore. For example, in packaged software development, design and marketing stays onsite while coding and customer support are done abroad. India

is the largest player in the offshore services market while China, Philippines, Russia and some eastern European countries are eager to cash in on the offshoring trend.

Offshore outsourcing has become a hotly debated issue in the US in recent years. Despite claims about economic benefits from offshore outsourcing for the US, economists and intellectuals are divided over the future of BPO and its real effects on the economies of the developed nations in the long run. According to a study by the McKinsey Global Institute in 2003, offshore outsourcing delivers large and measurable benefits to the U.S. economy. It reduces the costs of IT & IT-enabled services by as much as 60 percent, keeps US companies competitive in global markets, and benefits workers and shareholders alike. However, a recent report by Forrester Research projects a bleak outlook for the future citing the shrinking of offshore outsourcing benefits. Despite these contrary projections, a recent survey by the National Association of Software and Services Company (NASSCOM), India reveals that as many as 400 of the Fortune 500 companies now either have their own business process or IT centers in India or outsource their business processes or IT to Indian technology firms (NASSCOM, 2005b).

The global BPO market has been estimated to be much more than US$150 billion (NASSCOM, 2005b). Of this, the US accounts for 59 percent, Europe 27 percent, and Asia/Pacific (including Japan) 9 percent. The table below gives the characteristics of the different regions:

2.1 Issues in Offshore Outsourcing

The IT outsourcing phenomenon has matured over the last 15 years. It has become a significant component in a firm's business strategy and IT outsourcing is no longer viewed only as a cost cutting tool (Dibbern, et al., 2004). Yet, several new challenges have emerged with the development of the offshore outsourcing phenomenon. However both clients and vendors are becoming increasingly adept at addressing the key issues in offshore outsourcing using sophisticated management techniques and technology to facilitate a lasting symbiotic relationship. While the following issues are relevant in the general realm of IT outsourcing, they are even more relevant in the specific realm of offshore outsourcing.

2.1.1 Cost Advantage

Some studies have indicated that outsourcing reduces costs, albeit at the price of a reduced service. They even contend that cost savings are mostly a result of implementation of cost reduction strategies rather than economies of scale, which could have been done in-house and even without even outsourcing (Lacity, 1993). Some studies even suggest that IT projects and operations may not be deemed as

successful when they are insourced, even when insourcing achieves cost savings on par with outsourcing due to biased expectations about insourcing and outsourcing held by the different stakeholders in the firm (Hirschheim and Lacity, 2000; Matlus, 2004). Production costs, transaction costs, and firm size are influential economic determinants of the outsourcing decision and managers have to be careful in estimating and using these costs in their calculations of return on investments (Ang and Straub, 1998). Another critical issue that has significant impacts on costs is the issue of outsourcing risks and how these risks are managed. Risks becomes more manageable when risk exposure is explicit and the compromises become clear to the managers (Aubert, et al., 2001; Healey, 2004).

2.1.2 Strategic Goals

The primary motivation for outsourcing, particularly offshore outsourcing, stems from the cost reduction emphasis in today's competitive economy. However, as the offshore outsourcing phenomenon is maturing, companies are offshoring their core IT work with a proactive strategic focus rather than with a proactive cost focus (Carmel and Agarwal, 2002). Prior research has also shown that companies engage in IT outsourcing with different strategic intents including IS improvement, business impact, and commercial exploitation, with the latter two intents being more strategic in nature than the former one (DiRomualdo and Gurbaxani, 1998; Kishore, et al., 2004-5). Deeper analysis of the outsourcing issues has revealed that economic benefits are not the only issue predominant in the decision to outsource.

2.1.3 Work Culture

There are a number of contributing factors that cumulatively result in failure and one of the most overlooked aspects is the part played by cultural differences. While differences in time schedule and language are visible, cultural differences are subtle and insidious, making it easy to be misunderstood or be mismanaged (Krishna, et al., 2004). Contrary to popular perception, some studies have found that contract employees perceive a favorable work culture in their client organizations (Ang and Slaughter, 2001; Pearce, 1993; Smith, 1994). However, supervisors in client organizations perceive contract workers to be lower performing and less faithful. When permanent co-workers experience work spillover from contract professionals, a negative spiral may emerge (Ang and Slaughter, 2001; Pearce, 1993; Smith, 1994).

2.1.4 Client-Service Provider Relationship

Client and service-provider relationship is a critical concern in IT outsourcing. Recent research characterizes IT outsourcing as a management of relationship with service providers rather than as simple contracting of IT commodities and

services (Kishore, et al., 2003). Based on the strategic impact of the outsourced IT assets and the extent of substitution by IT vendors, outsourcing relationships can be characterized as one of four types of relationships: support (low strategic impact, low substitution), alignment (high strategic impact, low substitution), alliance (low strategic impact, high substitution), and reliance (high strategic impact, high substitution). Recently the notion of relationship competency as "the extent to which a supplier is willing and able to cultivate a "win-win" relationship that will align client and supplier goals and incentives over time" has also been proposed (Feeny, et al., 2005). Relationship competency can be used to benchmark supplier capabilities so to establish relationships that support clients' business objectives. Researchers have also emphasized the need to create social capital in BPO deals for close partnering between clients and service providers (Willcocks, et al., 2004). Some researchers also suggest that successful relationships require an optimal level of control over the vendor in outsourcing relationships. While excessive vendor controls are detrimental, precise functional requirements, monitoring progress, and meeting project deadlines are important for successful relationships. Researchers have also suggested that helping vendors redesign their internal processes to enable self-control from the beginning of the outsourcing projects is beneficial to both parties (Choudhury and Sabherwal, 2003; Susarla, et al., 2003). An important aspect in outsourcing relationships is trust between the client and vendor organizations (Randeree, et al., forthcoming). Studies indicate that a balance between trust and structure furthers performance, while excessive focus on each one ignoring the other might hamper performance (Sabherwal, 1999). Finally, some frameworks to evaluate an outsourcer's offerings on categories such as security, pricing, integration, service level agreement, and reliability, availability and scalability are also evolving (e.g., Ekanayaka, et al., 2003).

3 India as an Offshore BPO Destination

India has emerged as one of the favored destinations for IT and IT-enabled services (ITES) because of its large labor pool, English language skills, cost and project management advantages, quality standards, and process expertise. A favorable time difference with North America and Europe helps maintain 24x7 operations and improves time to market. In parallel with broader efforts to develop the software and IT services industries, Indian governments at the national and the state levels have recognized India's potential in the IT outsourcing arena and have actively pursued programs to develop it further. Furthermore, Indian IT and ITES service providers have demonstrated a strong commitment to achieving internationally recognized quality standards. The Indian IT outsourcing companies have been successful at competing with the large IT companies in the US for application infrastructure projects as well as systems and business-process

outsourcing projects and are now branching out in areas such as Human resource Outsourcing (HRO) and Knowledge Process Outsourcing (KPO). These efforts have led to the emergence of a 24x7x365 global supply chain, and global real-time collaboration is fast becoming a reality changing the way we live (David and Ganesh, 2004). Below we review some of the key features of Indian IT and business process outsourcing industry.

3.1 Key Features of the Indian IT and IT-enabled BPO Industry

3.1.1 Industry Size and Experience

The Indian IT industry is the largest offshore IT and ITES outsourcing market, nearly three times larger than Canada, which is the most favored near-shore IT and ITES outsourcing destination. The latest figures from the industry watchdog NASSCOM states that Indian IT and ITES industry recorded 34.5% growth in exports, clocking revenues of US$ 17.2 billion in FY 2004-05. The IT software and services grew by 30.5%, registering revenues of US$ 12 billion; while ITES-BPO segment clocked revenues of US$ 5.2 billion, recording a growth of 44.5% in FY 2004-05. NASSCOM projects Indian IT and ITES exports to grow by 30-32% in FY 2005-06, clocking revenues of US$ 22.5 billion, and gives an optimistic projection of US$ 50 billion by FY 2009-10. The global delivery model adopted by Indian vendors has matured over time. Companies have acquired a high level of expertise in delivering projects using teams at various locations and exploiting the time differences between US and offshore locations. India has the highest number of IT employees of any offshore location, with industry employee base crossing the one million mark in 2004-05. Of this number, over 697,000 are focused on IT Software and Services, and 347,000 are employed in IT-enabled services and business process outsourcing industry. In comparison, Philippines employed 20,000 professionals and generated US$ 600 million in revenues last year. China's IT exports were US$ 1.04 Billion in 2003, and it employed 26,000 professionals (NASSCOM, 2005b).

3.1.2 Labor Pool and Language

While countries like the Philippines can offer a similar labor cost advantage as India, the relatively limited supply of talent remains the biggest barrier to scaling up. China has a large labor pool but is behind India in terms of English-speaking ability and the adoption of international quality process certifications. India graduates around 200,000 engineers annually. About 2.1 million English-speaking graduates (including engineers and non-technical graduates) join the labor pool annually.

3.1.3 Quality

Quality practices of Indian IT companies were initially limited to establishing basic processes to facilitate projects. The objective was to effectively manage projects remotely when there was only a two-hour overlap in the workday between the US and India. As the industry grew, companies started focusing on software engineering practices and aligned themselves to the Capability Maturity Model (CMM) developed by the Software Engineering Institute (SEI) at Carnegie-Mellon University. This resulted in India developing a base of the largest number of SEI CMM Level 5 companies in the world. It should be noted that the highest level of capability maturity in the CMM model is level 5. Indian IT companies have instituted processes and metrics for all functions in their organizations. Of the estimated 117 SEI CMM Level 5 companies in the world, 80 are in India, and 27 of the estimated 72 companies at SEI CMM Level 4 are Indian.

3.2 Economics of Business Process Offshoring to India

The primary strength of the Indian offshoring model is its low-cost, high-value proposition, i.e., the ability of the Indian IT and ITES industry to deliver services from a low-cost location with vast English-speaking resources and a strong educational orientation. The huge supply of skilled manpower has helped restrict wages (engineers with 0-5 years experience earn US$ 4,000-10,000/year) and billing rates (typical billing is US$ 45,000/year when work is done offshore, and around US$ 120,000 when done onsite). Below we discuss the key variables that drive the economics of the Indian offshore model.

3.2.1 Pricing

On a blended basis, a typical application offshore management project can be done at 50-55% of the onsite cost. Projects are typically carried out in two locations with about 70% of an application development project conducted in India (offshore) and the balance completed at the client's site (onsite). This ratio of offshore and onsite work varies for different IT services. This ratio is higher for business process services and call centers and is lower for application package implementation and support. It comes as no surprise, therefore, that cost savings are greater in those services where the offshore component is higher.

3.2.2 Employee Cost

The biggest cost benefit in the Indian offshore model comes from lower employee costs, with over 80% of workers based offshore (including bench) and offshore salaries being 65-80% lower than onsite rates. Employees billed at onsite US rates are generally sent to client sites in the US on temporary work visas (H-1B), which allows foreign nationals to work in the US with the sponsoring firm. Some

employees may also be sent to the US on intra-company transfer visa (L-1), which allows foreign companies to send their employees to work in their US offices and branches but such employees cannot be based on client sites permanently. The gross margins on onsite revenues for Indian companies are the same or even lower at times than US competitors, but are compensated for by a considerably higher margin on offshore revenues. However, the greater savings come from keeping the bench (i.e., employees temporarily without a project) offshore.

Table 2: Typical Annual Billing and Compensation Rates for Offshore Services (Data Source: Smith Barney Estimates)

	Application Management	Custom Management	Package Implementation	Call Centers	Transaction Processing
Delivery					
Offshore (%)	75	70	40	100	100
Onsite (%)	25	30	60	0	0
Billing Rates (US$/year)					
Offshore	42000	45000	60000	22000	30000
Onsite	115000	120000	150000	0	0
Blended Rate for Offshore	60250	67500	114000	22000	30000
Typical Onsite Billing by Incumbents	**110000**	**125000**	**175000**	**35000**	**90000**
Compensation (US$/year)					
Offshore	9500	10000	15000	3500	5000
Onsite	62000	65000	70000	0	0
Blended	22625	26500	48000	3500	5000
Typical Onsite Compensation by Incumbents	**60000**	**75000**	**90000**	**22000**	**40000**

Since employees are sent to the client site in the US on a project basis, offshore companies manage to keep onsite utilization rates at 90-100%. The model's inherent ability to maintain the bench offshore at less than US$ 10,000/-year/employee is a huge advantage over US IT firms who are forced to maintain the bench at a considerably higher rate of about US $ 70,000/year/employee.

Table 3: Typical Offshore Cost Structure (Custom Application Development) (US $/year) (Data Source: Smith Barney Estimates)

	Offshore	Onsite	Blended
% of Efforts	70	30	
US$/Billed Employee			
Typical Billing	**45000**	**120000**	**67500**
Compensation (Including Bench)	12500	65000	28250
Communication, & Others	7500	0	5250
Travel & Visa	0	12500	3750
Gross Profit	**25000**	**42500**	**30250**
Margin (%)	**56**	**35**	**45**
SG&A			10500
Depreciation			4000
Operating Profit			**15750**
Margin (%)			**23**

3.2.3 Communication and Travel/Visa Costs

Higher communications costs for doing work remotely from India and travel and visa costs for sending employees to client sites partially offset the lower cost of skilled labor in India. The improved telecom infrastructure in India and the likelihood of a future Indian bandwidth glut should have a beneficial impact on these costs. The cost of a T-1 line in India has dropped 90% over the past six years and was on par with rates in other major global BPO locations. Gross margins on onsite revenues for Indian companies are typically 33-37% compared to around 40% for US companies.

3.2.4 Tax Holidays

The Indian government has offered tax incentives on IT and IT-enabled services exports, and companies enjoy a tax holiday if they set up their offices in a technology park in a "free-trade" zone or special economic zone under section 10A/10B of the Indian tax code. The 10A/10B benefit is applicable until 2009. Indian companies currently pay tax only on revenue earned outside India. Most US-based companies have set up Indian operations as cost centers. This implies that the US entity outsources work to the Indian entity, which adds a transfer cost to its total offsite cost. There are no Indian taxes on the work done in India. As long as the transfer costing is supported by independent market studies, the Internal Revenue Service (IRS) in the US will accept the Indian cost, inclusive of the transfer costing, to be the (offshore) cost of sales. The US entity pays full tax on the difference between its revenues and the total cost of operations, including the offshore cost, as defined above.

3.3 Impact of IT and ITES Offshoring on the Indian IT Services Landscape

Over the years, the Indian offshore sector has moved beyond the confines of custom application development and maintenance services to providing remote back office processing, software deployment & support, and infrastructure management services. The Indian offshore services industry has over the last decade built a significant presence in the custom application development and application management segments. It has also gained a small but increasing share in remote network management, processing services and software deployment & support segments over the last three years.

The Indian offshore model has made strong inroads in recent years in the software deployment and support category (13% of global IT Services market), where market share crossed 1% in 2002. Select offshore companies have begun providing remote network management (6% of global IT Services market) and monitoring services in the last two years. However, the delivery model is still evolving with a market share of just 0.3% in 2002.

An indirect impact of offshore services is also felt in the systems integration and IS outsourcing categories (38% of IT Services market). There have been increased instances of clients pulling out application-related work embedded within a larger Systems Integration (SI) or Information Systems (IS) contract and outsourcing it to an offshore player. The impact of this is to lower the overall profitability and cash flow characteristics of those larger contracts. Another impact is on pricing. Often when companies say pricing is stable, they are comparing prices for specific tasks without including the pieces that now might move to offshore locations.

3.4 Offshore Impact on IT Services Pricing

Offshore services (with a 30-60% price advantage) are driving an overall deflation in IT services pricing, which already is under pressure from new entrants and buyers. Reduced demand for IT Services in key vertical industries like telecom, manufacturing, and financial services and the increased use of offshore services were major factors driving down industry pricing in 2003-04. The financial failure of reputed companies like Enron further upped the ante as companies scrambled to look for transparent, inexpensive alternative costing models. The pressure on IT budgets brought an increased awareness, acceptance and demand for offshore labor, and for its associated lower and attractive pricing. The large differential between onsite and offshore prices pressured pricing further. The trend to offshore will continue to impose downward pressure on pricing in segments currently affected, and will broaden into segments where it is not yet felt. Price declines were greatest in application development and maintenance, IT infrastructure

management, and enterprise application implementation – these three services are offshore mainstays.

3.5 Impacts and Implications of Offshore Outsourcing in the US

The US backlash against offshore IT outsourcing is the single biggest risk facing the offshore IT outsourcing industry today. Proponents argue that there isn't much of an economic basis for the argument against offshore outsourcing as there is an order of magnitude difference between total jobs lost in the US over the past three years, and combined IT services and BPO employment growth in India over the same period. It appears that the backlash is not about economics per se but is about politics and people. Unless the jobs outlook in the US improves dramatically and quickly, the offshor outsourcing phenomenon will continue generating a backlash. A recent study by a reputed consulting firm found that every dollar a US company spends on outsourcing results in $1.12 to $1.14 in additional work in US. According to the Commerce Dept, foreign investment for setting up US subsidiaries and plants doubled to $82 billion between 2002 and 2003. 400,000 net new jobs, most of them tech-related, were added in this period whereas outsourcing took away about 300,000 U.S. jobs (Zhu, 2004). These contradictory views call for more research into finding out the real effects of offshore outsourcing on the US economy.

Most proposed anti-outsourcing legislation affects either the demand or the labor supply side of the equation. Legislation that directly bars corporations from outsourcing to offshore destinations is not being considered. Proposed demand-side legislations would either bar a state government agency from outsourcing work to offshore locations or alter the relative economic advantages of offshore outsourcing. This could be accomplished by providing tax incentives for not outsourcing to offshore locations or penalties for companies that move work overseas. Legislation has also been proposed that would require giving advance notice to workers if their jobs could be lost to outsourcing and would require processing companies to identify the offshore locations where IT and/or business processing work is being done. Supply-side legislation would either affect the rules associated with work visas or provide incentives to corporations to keep jobs in the US.

3.6 Drivers and Inhibitors

The primary drivers for the Indian BPO industry include the following:

- **Enormous base of English-speaking labor**: Indian IT service providers hold a significant edge in English language communications (accent, nuances, knowledge of U.S. business customs, and so forth) over other destinations.

English is taught as the first language in many urban schools in India and is widely accepted as the primary language for business communication. This is critical to most BPO services.

- **Time difference relative to the United States**: The ability to complete work "overnight" seen from the client perspective facilitates complementary working-hour arrangements with U.S. clients.
- **Cost advantages relative to other countries**: A typical Indian contact center, for example, charges customers between US$ 1.50 and US$ 2 to process a medium-to-complex query through e-mail and about US$ 3 for troubleshooting on the phone. Resolving a problem through Web chat would cost the customer in the vicinity of $2. Comparative U.S. charges are approximately US$ 3 for e-mail, US$ 9 per call and US$ 4 for Internet chat. Also, according to industry estimates for a call center in India, the average annual labor cost to company per person is less than US$ 7,500. The cost advantage becomes apparent when this is compared with the average annual labor cost of more than US$ 19,000 in the United States, more than US$ 22,000 in UK and more than US$ 17,000 in Australia. This, combined with the abundance of English-speaking human resources makes India an ideal location for BPO facilities. The price differential is also driving a change in business' customer-care policies. Onshore companies in North America traditionally discouraged customer calls to contact centers, because of the high cost per call (as explained above). With the offshoring of contact centers, and with the abundance of a well-educated, trained workforce available to field customer queries, companies are now making it easier for customers to place calls to their customer service centers. These centers are also being increasingly used to place outgoing marketing/sales related calls to prospective customers (target marketing) (NASSCOM, 2005a).
- **Attractive career path for skilled workers**: In competing regions it is becoming increasingly difficult to attract dedicated talent to work in contact centers or other BPO facilities. In India, such a position is seen as a career of choice by a significant proportion of young graduates, who may otherwise be unemployed.
- **Experience and exposure to U.S. business culture**: The United States dominates India's export revenues in almost all sectors. Many U.S. multinationals operate in India. Large numbers of Indian nationals work in the United States, then return home. These factors combine to generate familiarity with the U.S. work culture.
- **Regulatory support**: Contact centers and BPO facilities are seen as a source of large-scale employment-generation by the Indian government and hence receive many concessions and incentives.

- **Strong growth in the global BPO market**: Worldwide, BPO services will grow from US$ 115 billion in 2000 to US$ 178 billion in 2005, a 9.2 percent cumulative annual growth rate. Additional cost pressures have acted to stimulate more enterprises to consider BPO.
- **A trend toward consolidation** through large-scale mergers and acquisitions in a variety of industries continues to create new opportunities for outsourcing back-office functions.
- **Reduced regulatory barriers** to "globalizing" enterprise business processes across multiple countries provide impetus to the Indian BPO industry.
- **The growth in new delivery models for BPO**, for instance the BSP model, is expected to drive growth in mid-market BPO services after 2003.
- **The opening up of the national long-distance and international telephony markets** to private service providers and allowing Internet telephony in India are significant and positive developments for the BPO facilities in India that are engaged in voice-based contact center activities.

The primary inhibitors and challenges for the Indian BPO industry include the following:

- **Convincing more U.S. companies to outsource to offshore companies and locations**: The primary obstacles in the growth of the offshore outsourcing model are security concerns and concerns about the availability of capable service providers and the quality of services that they can provide. At least for the next few years, U.S. clients will prefer to contract with U.S. BPO providers, but these are expected to increasingly fulfill services offshore, either using their own facilities or through partnerships with Indian and other foreign IT services companies.
- **"Mandatory" operational presence in the United States**: Almost every BPO vendor has its own office with a marketing team or operates through agents and intermediaries in the US. Further, almost all of the outsourcing contracts are enforceable according to U.S. laws in U.S. courts. This is simply a reflection of US client preferences to take action against a US entity in the US if a contract is breached. It is evident that the local proximity to IT service firms has significant impact on outsourcing of coordination intensive tasks. This demonstrates the need for IT firms to maintain local presence and this can be gauged by the fact that all offshore providers are beefing up their strength in key cities across the world and are increasingly recruiting local staff to overcome the cultural differences (Arora, et al., 2004).
- **Strong dependence on the United States**: Indian BPO providers will be challenged to build and maintain a similar position in other rapidly developing markets as in the US with the emergence of alternative BPO destinations such as Philippines, Mexico, Guatemala, Canada, Russia, Hungary, Poland, the

Caribbean countries and the Czech Republic. These countries also offer strong pools of skilled labor, English proficiency, relatively low costs and sophisticated telecommunication and network infrastructure.

- **Intense domestic competition** from IT services companies expanding their portfolio and US service providers establishing bases in India. It appears that the Indian BPO industry is heading toward a shakeout and consolidation.
- **Price erosion from smaller, unscrupulous BPO service providers** that offer services at prices below levels required to sustain high-quality services.
- **A relative slowdown in the BPO market** toward 2005 as new BPO contracts from large enterprises begin to taper off unless new big contracts continue to get signed consistently.
- **Increase in Indian labor costs** as industry development stimulates more competition for highly skilled workers.
- **Limited infrastructure beyond special zones**: Special infrastructure zones and parks receive good quality power, transport, telecommunications and data communications infrastructure, but enterprises are often forced to invest heavily in key infrastructural items, such as their own power generators, outside these zones. This requires building redundancies, leading to additional capital and operational expenditure for facilities away from such parks.
- **Disaster-recovery preparedness**: In light of geopolitical concerns over terrorism and other factors that pose threats to global business, Indian vendors have to make special efforts to convince potential clients in the US and Europe that despite such tensions, life goes on as usual in metro cities. While Indian IT services vendors have no control over political and military decisions, they must demonstrate their disaster-recovery preparedness and business continuity plans to convince potential clients that their facilities are reasonably safe and reliable from an availability perspective.

4 BPO Service Category Classification

Offshore BPO is not a mature service offering except in specialized process areas such as medical claims transcription and some contact center operations. Demand for offshore BPO services has come initially from large corporations with multiple operational sites looking for economies of scale, process optimization, and process standardization. Early offshore business process management has taken the form of internal operations established by GE, American Express, British Airways and HSBC in India. These offshore units primarily provide captive services only to their respective parent companies, although some have started offering third-party services to external customers.

However business process outsourcing in India has been evolving over time. Different types of business processing services are now provided by Indian IT services companies. Some of the major categories of IT-enabled services provided by the Indian outsourcing industry are discussed below.

4.1 Contact Centers

A contact center is a facility for multipurpose, multi-channel interaction that serves the needs of the various constituents of an organization — customers, prospects, supply chain, distribution channel and employees (McCarthy, et al., 2003). Call centers are contact centers that handle only voice interactions.

The outsourcing model has gained quick acceptability in contact centers, subject to strict adherence to nondisclosure contracts and service level agreements. The opportunity in India was stimulated by advancements in communications technology. U.S. and European companies such as GE and American Express pioneered this activity in India by starting their own offshore and shared service centers.

4.2 Insurance Claims Processing

The insurance industry in the US is highly complex. Healthcare practitioners and hospitals in the United States find it very cumbersome to manage the documentation and to follow up with insurance companies for their fees. Many find it easier and more cost-effective to outsource the documentation and follow-up activity to Enterprise Service Providers (ESP's). Medical billing and claims processing services offered by Indian vendors include data entry, patient enrollment, accounts receivable, denials/rejections analysis, rebilling, insurance follow-up, and collection agency reporting (McCarthy, et al., 2003)

4.3 Transcription Services

Transcription services involve conversion of information from voice format into text format. Transcription services take two main forms: medical transcription and legal & business transcription. Medical, legal, and business transcription is a big business opportunity for Indian vendors by virtue of the English-speaking talent available at significantly lower costs than the United States. The level of confidentiality involved in the information shared by the client is higher and the Service Level Agreements (SLA's) and Non Disclosure Agreements (NDA's) are bound to be more complex. To benefit most from this opportunity, vendors have to ensure good quality of output, and a high degree of assurance towards their ability to successfully manage the security and confidentiality of customer data.

4.4 Human Resources Services and Accounting

Managing human resources (HR) involves a number of routine, time-intensive tasks that distract HR managers from more important functions. Once again, external service providers offer a viable alternative. Services offered by ESP's in India include payroll processing, pension management, and resume management.

Indian service offerings in accounting typically include remote data entry, general accounting, accounts receivable, accounts payable, customer invoicing, credit application, and collection processing and collection calling (Martorelli, 2004). Only a few companies in India offer these services, but each one processes millions of transactions annually. Setting up to provide these services demands a significant investment in IT infrastructure and staff with relatively higher qualifications.

4.5 Forms Processing

Forms processing services promote speed, accuracy, and low cost. Manual key entry can be integrated with high-end tools for forms capture. Data from paper, optical and magnetic media may be converted, inputted to a database and validated. Customized data capture can span orders, invoices, warranties, survey forms, check information, customer enrollments, government statistical information, and intelligent abstraction of data from financial reports (McCarthy, et al., 2003). Only a few companies in India, such as Datamatics, have been providing such services from their data-processing centers.

4.6 Legal Databases

Timely access to relevant laws, amendments and precedents has driven the emergence of a legal database industry in the US. BPO service providers train lawyers to work closely with their clients to create and maintain an extensive database of their records and conduct supporting research. Salaries and qualifications are higher than those for employees engaged in other BPO activities, but so are the margins, and the cost of a lawyer in India continues to remain a fraction of the cost of his/her counterpart in the United States. Indian legal service providers are in an advantageous position over other Asian BPO providers for reasons other than cost: Indian lawyers operate in a large scale democratic environment (India is the world's largest democracy) similar to that of the United States, and can readily understand the approach and requirements of their U.S. counterparts.

4.7 Data Centers

Clients typically sign up for data center services to take care of their incremental storage requirements at lower costs. Data centers are also seen as a solution for

data backup as part of disaster-recovery and business-continuity policies. A data center service provider should be able to offer multiple platforms, easy scalability, reliable connectivity, and data security.

4.8 Digital Media

The service portfolio for digital media and animation content development includes data collection, collation, sorting into meaningful categories, data presentation and developing animated movies and cartoons for films, television, advertisements and educational media. India has a huge talent pool trained in media and animation development that is already being utilized by US filmmakers. Educational CDs (for Distance Learning) represent another significant opportunity for the Indian ITES industry.

4.9 Data Digitization

Data digitization services include converting data in various forms into a digital format that can be easily accessed, analyzed, and manipulated on a computer. The range of services provided by Indian ITES companies includes data capture, data conversion, software intelligence (SI) and consulting. This service differs from most other BPO services in that it is more IT-intensive and requires people with higher levels of IT and spatial skills than in other services, which also means margins are higher.

4.10 Research & Development

Indian BPO vendors are well-positioned to provide outsourced web search, archiving, and analysis services. Teams of people dedicated to specific research areas and/or geographies can continuously monitor, archive, and catalog information, and respond to queries from global clients. Beyond general online research, such companies can provide more valuable services in customized research, business intelligence (BI), operations research and business valuation. The Indian IT company Wipro has around 9,000 engineers designing products for about 100 companies making it the world's largest third-party R&D outsourcer (Atlas, 2005).

4.11 Engineering Design and Biometrics

This is a niche IT services activity in India. Indian universities produce a large number of engineers across various science and technology disciplines. This resource pool can be applied to R&D and engineering design services. A few companies in India provide such services. Bio-informatics, and specifically genomics research, represents another BPO opportunity for Indian providers because of the tremendous amount of information across tens of thousands of

genes that must be simultaneously accessed, organized and searched for novel relationships. Although this is a new area for Indian BPO vendors, some Indian companies have already ventured into offering services through tie-ups with US companies involved in R&D on genomics and with companies that aggregate published information focused on medical research.

Indian firms that generated the outsourcing wave are quickly moving up the "value chain." The big five IT firms in India – Tata Consultancy Services, Infosys, Wipro, HCL and Satyam – and other smaller firms are taking outsourcing in new directions like technical product research and development, sophisticated business computing, and management consulting(Desai, 2004). Worldwide spending on offshore research and development and engineering is expected to increase more than eightfold to $12 billion by 2010. Similarly, spending on the infrastructure outsourcing, such as remote network management, will grow from less than $250 million to as much as $4 billion in the same period (Gartner, 2005). The deep pool of skilled technology workers, with an employee cost of one tenth of United States and Western Europe and the growing stature of engineering schools like the famed IIT's (Indian Institute of Technology) is maintaining India's position as the most favorable offshore destination. In the next section, we discuss the case of GE's BPO operations in India, as GE was the pioneer of offshore business process outsourcing to India.

5 Case Study: GE'S BPO Operations in India

GE has connections to India since 1902 when it installed India's first hydro-electric power plant. In 1930, IGE (International General Electric) was set up for sales of GE products and services by GE businesses not represented in India. Today, the majority of GE's businesses world-wide have a presence in India, either through a joint venture, a wholly-owned subsidiary, a strategic alliance or a business development and customer support presence. In 2001, GE's revenues and orders from India exceeded US$ 1 billion.

GE Capital Services India, a wholly owned subsidiary of GE, is one of the largest transnational companies in India, with a combined asset base of US$ 1.6 billion, and employs 17,000 people worldwide. GE Capital Services India's Business Process Outsourcing (BPO) arm, GE Capital International Services (GECIS), provides outsourcing services, including finance and accounting services, collection services, insurance services, customer fulfillment activities and processes, data modeling and analytics support, managed IT services, software solutions, e-learning, and remote marketing.

5.1 GE Capital International Services (GECIS) India

GE Capital International Services (GECIS) is a world-class remote processing operation that services its clients from around the world through its IT-enabled services. It was set up in 1997 to carry out back office operations for a number of GE businesses worldwide in order to leverage the English speaking, highly educated, intellectual capital of India to deliver processes that do not require face-to-face contact with the customer.

GECIS operates on high technology platforms to offer diverse IT-enabled services with quality and cost advantages to its customers worldwide. These services include ERP and Oracle database consulting, IT help desks, knowledge services, software solutions, analytics, data mining and modeling, remote network monitoring, e-learning and customer contact centers.

GECIS is the largest back-office services operation in India. It employs more than 12,000 people delivering over 450 processes to 30 different businesses in the US, Europe, Japan and Australia. Starting with simple data processing, GECIS has constantly moved up the value chain over the last five years migrating more and more complex processes from diverse businesses across GE to GECIS in India. Its approach is governed by speed, simplicity and service, and a constant quest for Six Sigma Quality.

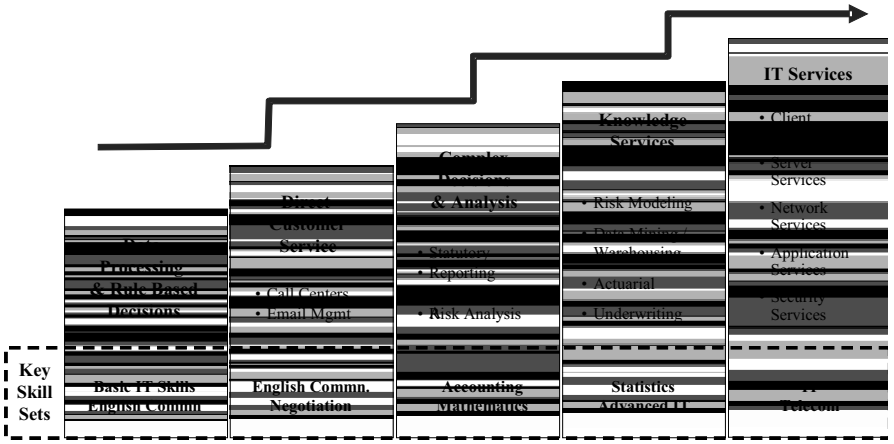


Figure 1: GECIS' Evolution in India (Source: GECIS)

5.1.1 Locations

Though GECIS' operations began in Gurgaon, the company has diversified all over the country and now has offices in Hyderabad, Bangalore, and Jaipur. While Gurgaon remains GECIS's flagship unit with four sites, Hyderabad boasts the

largest investment of GECIS in India due to the presence of the BPO facility and learning center that together cover 12 acres and employ 5,000 people.

5.1.2 State-of-the-art Infrastructure

A state-of-the-art infrastructure with a robust telecommunications network supported by dedicated earth stations connects GECIS to its clients across the globe. GECIS is the largest private user of international bandwidth in India. A stringent security system, round-the-clock crisis management help lines, back-up devices and recovery sites, and general emergency preparedness form the core of its Business Continuity Planning (BCP) and Disaster Recovery Planning (DRP) efforts.

5.1.3 Centers of Excellence (CoE's)

GECIS businesses in India comprise nine Centers of Excellence (CoE's).

- **Finance & Accounting CoE:** This CoE currently provides Financial and Accounting services to 26 capital businesses and 6 industrial businesses of GE.
- **Insurance CoE:** It provides underwriting services and claims processing to GE businesses GEFA and GEMICO and Employer's Reinsurance Corporation.
- **Collections CoE:** This CoE is responsible for consumer and commercial collections for GE Card Services, Monogram Credit Services (MCS), Auto Financial Services (AFS), Vendor Financial Services (VFS), etc.
- **Customer Fulfillment CoE:** The focus of this CoE is on a range of customer fulfillment activities, including inbound call centers and transaction processing for GE Capital's consumer and commercial finance businesses.
- **Industrial & Equipment Businesses CoE:** This CoE deals with GE's industrial business like Appliances, Medical Systems, Industrial Systems and certain equipment/operating businesses like Penske and Fleet Services.
- **GECIS Analytics:** It provides data modeling and analytics support to GE Capital businesses across the globe and helps to improve their processes and profitability.
- **GECIS Learning:** It helps its customers make training more effective and efficient by digitizing training programs. It also runs business-to-business (B2B) telesales and telemarketing processes for international customers.
- **GECIS IT Services:** It provides technical support services such as offshore support for hardware, software trouble shooting and problem resolution, network and operating system monitoring & management to companies in North America and Western Europe.

- **GECIS Software:** This GECIS business provides a wide range of software services from development, implementation, and transition to maintenance and support including helpdesk and upgrades.

These Centers of Excellence provide the following services:

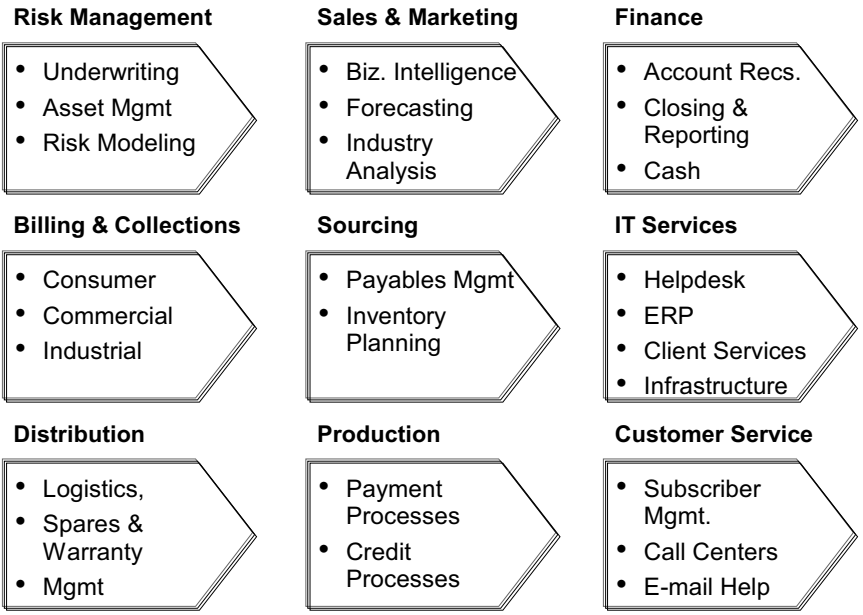


Figure 2: Snapshot of Services Provided by GECIS CoE's (Data Source: GECIS)

5.1.4 Global Presence

The large size and global reach of GECIS' footprint allows it to take big swings towards meeting its stakeholders' objectives. According to Pramod Bhasin, President & CEO of GECIS Global, GECIS' India operations save GE in excess of US $300 million a year. This had a large bearing on GE's recent decision to commercialize GECIS, as GE saw this as an opportunity to realize significant value from GECIS' scale. The decision will help GECIS further broaden its global offerings by meeting the needs of other potential clients, many of whom have expressed strong interest in partnering with GECIS to make their global operations more efficient. With this accelerated growth, GECIS will continue to deliver operational excellence to provide expanded opportunities for employees and increased value for shareholders.

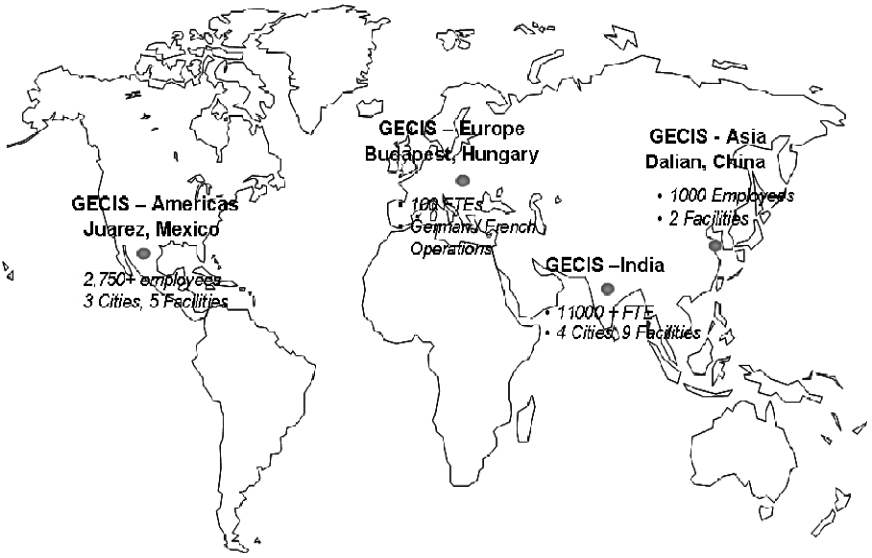


Figure 3: Size of GECIS' Global Footprint (Data Source: GECIS, GE)

5.1.5 The Way Forward

The challenge in front of GECIS today is to rope in new clients and slowly move away from solely servicing GE as a captive BPO unit. However, since it has expertise and a global presence, it should be able to attract the right clients. GECIS is also planning to attract companies from Europe and is setting up offices in Rumania and Tunisia for this purpose.

Towards this end, GECIS has recently sold a 60 percent stake in its BPO outfit for $500 million to two private investment firms, General Atlantic Partners and Oak Hill Partners. This is the largest deal thus far in the BPO domain and is part of the company's larger plan to grow at above 40 percent per annum, which is the industry average. GECIS is valued at around $800 million after the deal, and expects to post revenues of $420 million in 2004 and $513 million in 2005.

Among the unique features of GECIS is the fact that it has moved from servicing a single parent entity to fending on its own. This requires considerable marketing muscle and new people have been hired for this purpose to help fatten the order book. The company has to compete with others in the BPO space and prove that it can be as effective as a solo entity as it was when it was a captive BPO unit.

6 Conclusion and Challenges Ahead

The BPO industry is seen as a major employment generator and foreign exchange earner for the Indian economy over the next decade. Global BPO spending is forecasted to increase from US$ 127 billion in 2001 to US$ 178 billion in 2005 (McCarthy, et al., 2003). The U.S. market, which accounted for 60 percent of global spending in 2001, outsourced about 5 percent of this spending to offshore locations. As US corporations come under competitive pressure to further cut costs without sacrificing quality, they would be expected to seriously consider outsourcing to offshore vendors that they can depend on for high-quality of work. Indian vendors need to build credibility with their target clientele through the work being outsourced to them, so that when more work is to be outsourced, they will be the logical choice.

With a large and growing talent pool, improving infrastructure, increasing global interest in offshore outsourcing and with strong government support, this should not be very difficult to achieve. While the domestic market is not expected to grow at the rapid pace indicated above, export revenues will drive growth in the industry. There are also signs of growth on the shared-services front in the domestic market, with large domestic and multinational groups active on this front. The major BPO players have consolidated their positions in India and several mergers and acquisitions have taken place in the BPO industry in India during the last 18 months. This bodes well for the Indian BPO industry which is expected to do quite well and compare favorably with global BPO majors. The major challenges lie in the skills area, where attrition rates range from 25-40%. Together with rising employee costs, retaining management talent is becoming a major concern. Another area of challenge is data security. Though India has implemented the IT act, the industry feels the need for a comprehensive data security law to address these concerns (Roy, 2005).

Indian BPO service providers are expected to move up the value chain and become strategic BPO service providers as they mature from providing transaction-based BPO offerings to more holistic, value-added services. The evolution from “service provider” to “strategic partner” is continuous and inevitable, and those that make the transition successfully while managing their burgeoning growth-related challenges well will reap the benefits in the years to come.

References

Ang, S., and Slaughter, S.A. "Work outcomes and job design for contract versus permanent information systems professionals on software development teams," *MIS Quarterly* (25:3), 2001, pp. 321-350.

Ang, S., and Straub, D.W. "Production and transaction economies and IS outsourcing: A study of the U.S. banking industry," *MIS Quarterly* (22:4), 1998, pp. 535-552.

Arora, A., Forman, C., and Kuan, J. "How Does Vendor Distance Influence the IT Outsourcing Decision?"2004-E46), 2004, pp. 21.

Atlas, T. "Bangalore's Big Dreams," *USnews*, 05/02/2005 2005.

Aubert, B.A., Rivard, S., and Patry, M. "Managing IT Outsourcing Risk: Lessons Learned,"), 2001.

Carmel, E. "American hegemony in packaged software trade and the "culture of software"," *Information Society* (13:1), 1997, pp. 125-143.

Carmel, E., and Agarwal, R. "The maturation of offshore sourcing of information technology work," *MISQ Executive* (1:2), 2002, pp. 65-77.

Choudhury, V., and Sabherwal, R. "Portfolios of control in outsourced software development projects," *Information Systems Research* (14:3), 2003, pp. 291-315.

David, and Ganesh "Planning for Offshore Outsourcing,"), 2004.

Desai, N. "Global sourcing survey towards a wider service mix,"), 2004.

Dibbern, J., Goles, T., Hirschheim, R., and Jayatilaka, B. "Information Systems Outsourcing: A Survey and Analysis of the Literature," *Database for Advances in Information Systems;* (35:4), 2004, pp. 6-103.

DiRomualdo, A., and Gurbaxani, V. "Strategic intent for IT outsourcing," *Sloan Management Review* (39:4), 1998, pp. 67-80.

Ekanayaka, Y., Currie, W.L., and Seltsikas, P. "Evaluating application service providers," *Benchmarking* (10:4), 2003, pp. 343-355.

Feeny, D., Lacity, M., and Willcocks, L.P. "Taking the Measure of Outsourcing Providers," *MIT Sloan Management Review* (46:3), 2005, pp. 41.

Healey, A. "Reducing outsourcing risk,"), 2004.

Hirschheim, R., and Lacity, M. "The myths and realities of information technology insourcing," *Communications of the ACM* (43:2), 2000, pp. 99-107.

Kerry, M., and Marcolin, B. "Information technology outsourcing," *Business Quarterly* (59:1), 1994, pp. 95-193.

Kishore, R., Rao, H.R., Nam, K., Rajagopalan, S., and Chaudhury, A. "A relationship perspective on IT outsourcing," *Communications of the ACM* (46:12), 2003, pp. 86.

Kishore, R., Agrawal, M., and Rao, H.R. "Determinants of information technology sourcing during technology growth and maturity: an empirical study of e-commerce sourcing," *Journal of Management Information Systems* (21:3), 2004-5, pp. 47-82.

Krishna, S., Sahay, S., and Walsham, G. "Managing cross-cultural issues in global software outsourcing," *Communications of the ACM* (47:4), 2004, pp. 62.

Lacity, M.C., and Hirschheim, R. "The information systems outsourcing bandwagon," *Sloan Management Review* (35:1), 1993, pp. 73-86.

Martorelli, W. "Trends 2005: BPO in Finance and Accounting,"), 2004.

Matlus, R.T. "Outsourcing to control cost,"), 2004.

McCarthy, J.C., Temkin, B.D., Ross, C.F., and Belanger, N. "BPO's Fragmented Future," Forrester, 2003.

NASSCOM "India's IT is booming," *The Economic Times*, February 11, 2005, 2005a.

NASSCOM "Indian software and services exports exceed expectations," *Press release*, June 02, 2005, 2005b.

Pearce, J.L. "Toward an organizational behavior of contract laborers: Their psychological involvement and effects on employee co-workers," *Academy of Management Journal* (36:5), 1993, pp. 1082-1096.

Randeree, E., Kishore, R., and Rao, H. R. "Investigating trust in outsourcing: a study in the healthcare industry," *Advances in Management Information Systems*, forthcoming.

Roy, S. "BPO is responding to challenges," *Rediff*, June 15, 2005 2005.

Sabherwal, R. "The role of trust in outsourced IS development projects," *Communications of the ACM* (42:2), 1999, pp. 80-86.

Smith, V. "Institutionalizing flexibility in a service firm: Multiple contingencies and hidden hierarchies," (21:3), 1994, pp. 284-308.

Susarla, A., Barua, A., and Whinston, A.B. "Understanding the service component of application service provision: An emperical analysis of satisfaction with ASP services," *MIS Quarterly Executive* (27:1), 2003, pp. 91-123.

Willcocks, L., Hindle, J., Feeny, D., and Lacity, M. "IT and Business Process Outsourcing: The Knowledge Potential," *Information Systems Management* (21:3), 2004.

Zhu, E. "Let's Go Offshoring," *The Cannon*, 2004.

The Maturation of Offshore Sourcing of Information Technology Work[1]

Erran Carmel

Chair, Department of IT, Kogod School of Business, American University, Washington D.C., USA.

Ritu Agarwal

Professor of Management Information Systems at the Robert H. Smith School of Business, University of Maryland, College Park, USA.

1 Offshore IT Sourcing Is Gaining IT Management Attention

Offshore sourcing of IT work is increasingly occupying the attention of IT managers in U.S.-based firms. The term "offshore sourcing" includes both offshore outsourcing to a third-party provider as well as offshore insourcing to an internal group within a global corporation. Note the experiences of three major global U.S. corporations, General Electric (GE), Intel, and Ford:

- GE may be the largest American customer of offshore IT work. GE now has some 7,000 software professionals offshore, responsible for a wide variety of IT functions. In 2000, GE performed $280 million of IT work in India, increasing to $400 million in 2001. While most of GE's offshore work is performed in India, the firm also has two offshore development centers in Mexico and recently opened a center in China.
- "Intel Corp. opened [a software lab in 2000] in the central Russian city of Nizhny Novgorod. The chip maker employs 100 local programmers at the lab, plus another 100 contractors elsewhere in the country" (Chazan, G. 2001).

---

[1] This paper previously appeared as: Carmel, E., and Agarwal, R. "The Maturation of Offshore Sourcing of Information Technology Work," MIS Quarterly Executive (1:2) 2002, pp 65-78. The current version appears with permission of *MIS Quarterly*.

- "Ford [will] shift much of its computer-aided design and manufacturing (CAD/CAM) development, e-mail processing, and application development tasks to a subsidiary it is setting up in Chennai, India. Although Ford already has limited IT operations in that country, the latest effort is expected to help the automaker cut its costs by an additional $30 million to $60 million per year because IT labor costs in India are a fraction of those in the U.S" (Copeland, L. 2001).

IT managers are being pressured, above all, to contain costs in addition to ramping up projects quickly, finding experienced staff in fast-moving technologies, and innovating constantly with IT. To acquire the IT competencies that address these challenges, IT managers can choose one of two strategies: either outsource to a domestic supplier or go offshore. Our recent research has focused on this latter strategy of U.S.-based firms.

What has enabled foreign sourcing of IT work to grow? There are many reasons. One, the increasingly modular design of software production has reduced transactions costs – that is, the cost of coordinating software development and support work between two or more parties. More modular software production eases the burden of synchronizing, communicating, traveling, monitoring, providing feedback, and enforcing software development contracts.

Two, technologies for managing and coordinating work across geographic distances have matured considerably.

Three, offshore organizations (both internal and third-party) have improved their software development and project management capabilities.

The result, we believe, is that offshore sourcing of IT work will continue to grow because demand pressures persist, enabling factors are improving, and, as we discuss later, an increasingly professional global IT labor supply is emerging.

To better understand this offshore-sourcing phenomenon, and its underlying decision-making dynamics, we interviewed executives responsible for global IT sourcing decisions in 13 of the largest and most influential U.S.-based firms (see Appendix for study methodology). We spoke with executives in manufacturing and service sectors (whose IT organizations support internal needs only) and in technology companies (whose primary business is building software or providing professional IT services to others). We asked these executives:

- What is driving the offshore phenomenon in your corporation?
- Where are you going and why?
- What internal organizational impediments do you face?
- How are you overcoming these impediments?

Their experiences suggest that offshore IT sourcing follows a stage model, based on increasing maturity and sophistication in the offshore effort. This model can be

used by IT executives to benchmark their own activities. Furthermore, based on this research, we make recommendations for managers seeking to leverage offshore resources in delivering their IT solutions.

2 Four Stages of Offshore IT Sourcing

The companies we studied had different experiences as they proceeded offshore. Some chose vertical integration, while others used strategic alliances and partnerships. Some struggled to begin, while others made great progress. Are there discernible patterns in their experiences? We believe there are. We call this maturation the SITO stage model – short for "Sourcing of IT work Offshore." We derived the model from our own research as well as from the non-IT sourcing model of Monckza and Trent (Monckza and Trent 1991).

SITO has four stages:

- Stage 1: Offshore Bystander – No offshore sourcing; domestic sourcing only.
- Stage 2: Offshore Experimenter – Experiments with offshore sourcing on an ad hoc basis.
- Stage 3: Proactive Cost Focus – Sourcing of non-core work is encouraged at offshore centers, with the goal of cutting costs; offshore management mechanisms emerge.
- Stage 4: Proactive Strategic Focus – Core IT work is sourced to offshore centers, with the goal of achieving competitive advantage; distance management mechanisms are mature.

Each stage in this model is characterized by a set of strategic imperatives and internal firm dynamics, as described below.

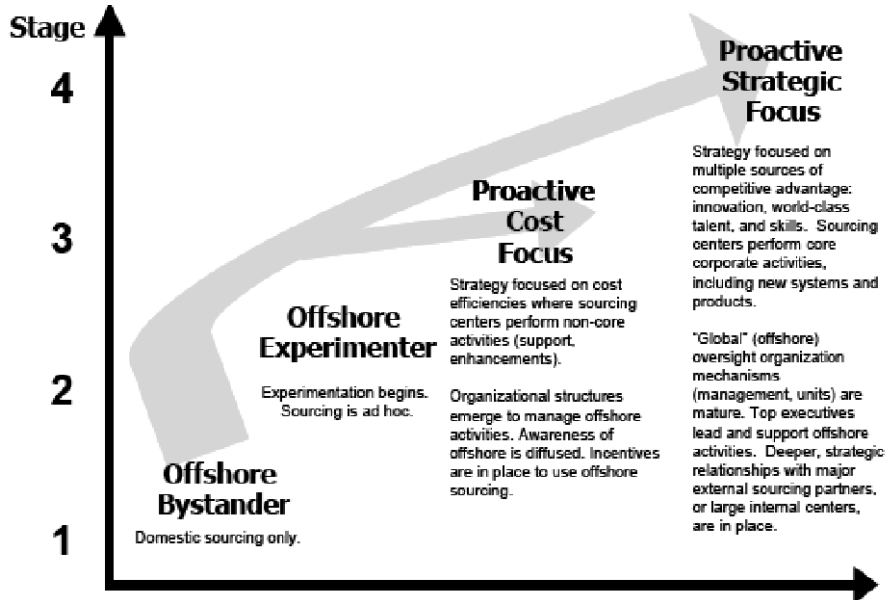


Figure 1: Sourcing of IT Work Offshore (SITO) Stage Model

2.1 Stage 1: Offshore Bystander

In this stage, there is no offshore sourcing of IT work; all sourcing is domestic to the U.S. While nearly 100 percent of U.S. *Fortune 500* firms were at this stage in 1990, we estimate that only 30-50 percent are still here in 2002. Firms remain at this stage because they have an ample supply of domestic IT labor or because the offshore option is not in the managers' mental models. However, this latter condition is diminishing.

These firms remain bystanders – even with the significant media attention focused on offshore sourcing – mainly because of their managers' significant pushback against offshore work. Both IT project managers and IT product managers are reluctant to send work offshore. "Nobody wants to move their work," said one offshore executive of the managers he encounters.

We found two reasons for pushback: a domestic mindset and inexperience in managing from a distance. A domestic mindset refers to corporate (or divisional) culture. For example, one corporation was characterized as "having a U.S.-centric model." Another was used to doing all its IT work only at its California sites. A third had a conservative culture; its employees were not used to diversity or foreign accents. And in a fourth, which performs defense-related projects for the government, managers were concerned about "atomic bombs in India."

The second pushback factor is inexperience in managing geographically dispersed projects. Some managers are simply more comfortable "managing by walking around." As one executive from an IT professional services firm pointed out, when IT managers become responsible for a project, they tend not to look beyond their own staffs for labor.

Some managers believe, somewhat erroneously, that offshore projects are characterized by minimal communication between offshore provider and the U.S. client. As a result, they assume all system requirements must be specified up front and very precisely in writing for the offshore sourcing to be successful. Precise specifications are difficult, so their reasoning justifies their avoiding the offshore route. (A corollary is that some managers are comfortable only sourcing low-level tasks offshore.)

We observed that pushback from software product engineers stemmed from their strong sense of product ownership. They proudly created these products, so they are unwilling to delegate responsibility offshore. They believe no one else can learn quickly enough to develop the products as well as they can.

Undoubtedly, globally dispersed projects are more difficult to manage than co-located ones (Carmel 1999). U.S. executives we interviewed who were active offshore users identified numerous problems they faced early on. Many of the problems have persisted, including:

- Cultural differences that lead to miscommunications and a lack of trust
- Time zone differences
- Poor English language skills
- Strange foreign work-hour regulations
- High employee turnover in India
- Difficulties in arranging visas for foreign professionals to the United States
- An offshore unit's lack of domain knowledge
- An unreliable telecommunications infrastructure.

Collectively, these obstacles deter Offshore Bystanders and frustrate those who may have moved further along. These obstacles also become handy excuses for firms unwilling to learn how to overcome them. All of them can certainly be managed, although not completely eliminated.

We identified three Offshore Bystanders in our study. Each of these large firms had a different reason for not shifting IT work offshore. One felt its hands were tied because it was involved in a broad, long-term outsourcing contract with a major U.S. outsourcing company. The second company was fortunate enough to be situated in an American metropolitan area in which the supply of IT labor was

sufficient for its needs. The third, deeply involved in defense contracts, assumed that moving IT work offshore would compromise the security of its defense work.

However, all three companies were taking small, initial steps offshore. And as is common, all three had their eyes primarily on India. One was allowing Indian firms to bid on four IT projects. Another had conducted some studies, but had not taken action yet. The third had begun a very small engagement with an Indian company, with three Indian professionals working on an experimental project. This third firm could be classified as transitioning into Stage 2.

In nearly all 13 firms in our study, no matter their stage, we found an "offshore champion" who advocated a new offshore approach within the corporation. This champion is the catalyst who creates momentum within the complex political environment of a large U.S. corporation. Champions see their mission as expanding offshore sourcing and are frustrated, or stymied, when they do not succeed in this mission. At one corporation stuck in Stage 1, the stymied champion said, "We missed the boat on India."

Typically, Offshore Bystanders have a history of choosing domestic partners for any outsourcing activity, not just for IT. They also generally have a conservative culture (e.g., a domestic mindset). Turning to an offshore unit would represent a significant shift in corporate values. The conservatism arises from a variety of factors, including a subtle distrust of foreigners and, in some instances, concerns about security. Even with one or two champions who advocate moving IT work offshore, the firms remain Offshore Bystanders because the champions' views are not widely shared among other corporate executives and IT managers.

2.2 Stage 2: Offshore Experimenter

Offshore Experimenters take an ad hoc approach to sourcing. Pockets of offshore IT activity emerge inside the corporation, but there is little coordination or knowledge sharing across divisions. In short, they do not coordinate or manage vendors, site selection, or acquisitions.

Firms transition from Stage 1 to Stage 2 when their offshore champions begin to be heard. Typically, firms move into and through Stage 2 beginning with pilot projects. We estimate that 10 to 20 percent of U.S. Fortune 500 firms are in Stage 2 today. For many, this experimentation phase began in the early to mid-1990s, lasted several years, and then the firms moved into Stage 3.

In the past, many Offshore Experimenters were reactive because their experimentation was motivated by years of cost pressures and a tight U.S. IT labor market. With this combination, managers saw little choice but to go offshore to meet their IT needs. They went offshore for Y2K remediation projects, for instance. But since 2000, this reactiveness has subsided. Today, firms are

motivated to become Offshore Experimenters to diversify, cut costs, or simply join the bandwagon (everyone is doing it).

Most business cases for offshore IT sourcing focus on cost savings. More than 90 percent of the firms in our study stated they were sourcing offshore, at least in part, to save money. In fact, 70 percent said cost savings was their sole reason or a key reason for doing work offshore:

> "Our IT budget is under constant pressure. It has shrunk to half, therefore, the move to India makes perfect sense."

> "We [in the offshore units] are now doing SAP [….]. We used to think that only $125/hr [American] consultants could do that. We knocked that off."

As observed earlier, Offshore Experimenters are characterized by ad-hoc offshore efforts. They choose offshore vendors without necessarily performing sophisticated comparisons. Or they let the location of offshore suppliers be dictated by short-term convenience. Or they set up an internal offshore unit without a highlevel mandate. The managers in these companies view their approach as appropriate because they do not see offshore sourcing as a long-term activity. However, these ad-hoc efforts generally do not deliver the full potential of offshore sourcing.

Stage 2 is actually a transition stage; it is not sustainable in the long run. Offshore Experimenters either move on to Stage 3 or regress to Stage 1 – but no firms in our sample had regressed. Companies move on because Stage 2 outsourcing creates a momentum that propels firms to develop structures, roles, and processes to leverage offshore resources. That is, once exposed to successful experiments, companies look to develop a strategy to garner any missed benefits – moving them to Stage 3.

2.3 Stage 3: Proactive Cost Focus

The transition from Stage 2 to Stage 3 is marked by moving from a reactive to a proactive stance. Management shifts its view of offshore sourcing, seeing it as a viable, acceptable strategy. Companies in Stage 3 still focus on saving money. In fact, that view becomes widely recognized and accepted within the company.

In Stage 3, managers develop internal capabilities and expertise to manage their offshore relationships. If these relationships are with third-party vendors, the managers expand their knowledge about supplier and site performance as they learn how to manage these long-term relationships. Generally, the offshore tasks are non-core and structured, such as maintaining current systems, performing quality assurance on new development, testing new applications, or porting applications to new platforms.

Given the focus on cost, firms just entering Stage 3 often find they already have a large number of external suppliers because different divisions have sent their IT projects overseas without central coordination. Rather than seek long-term, deep relationships with a small number of vendors, the different groups separately "shop around" for the lowest-cost bidder for each IT project.

Other firms want to reduce the number of suppliers, so they seek longer-term, deeper relationships with a small number of vendors for substantial chunks of their IT project portfolio.

Regardless of the number of suppliers, in all cases within our study, the Indian units were either the sole or major units involved in offshore sourcing. Often, these units were one or two large offshore IT professional services firms. In fact, two of the four Stage 3 companies in our sample sourced from just one large Indian firm, a third sourced from two Indian firms, and the fourth sourced from a U.S.-based IT professional services organization that subcontracts its offshore work to India. All these relationships were significant, involving tens or even hundreds of millions of dollars each year.

In Stage 3, both business and IT executives view offshore sourcing as an important mechanism for exerting market pressure on internal IT units. In-house IT units have often been characterized as monopolies that restrict free choice among captive internal clients Lacity et al. 1995).

Sending IT work overseas to less expensive destinations creates a natural incentive for domestic internal IT units to utilize resources as effectively and efficiently as possible. For instance, at a number of corporations in our study, the offshore units bid competitively against domestic internal units for internal projects.

Offshore units also offer increased cost flexibility. One unit in our study offers a menu of monthly contracts, short-term contracts, pricing by the hour, and bids on complete jobs.

The following quotes from our interviews demonstrate both the cost efficiencies of offshore sourcing and the ways management promoted this activity. Both are illustrative of the Stage 3 mindset:

- Corporation A set a target of sourcing 10 percent of its IT work offshore within the next few years. Managers had numeric quotas to meet, and each received an annual "balanced scorecard" that specified the offshore staff level. The managers met these offshore quotas about 80 percent of the time, and the strong budget controls helped drive work offshore.
- At Corporation B "… for every new application there is a [standard] checklist of how many global [offshore] resources you should be using, and if not, why not?"

Stage 3 or 4 companies often have fairly sophisticated labor-costing models, which they use to compare the cost of an individual IT professional in California with one in Kansas City, Bangalore (India), and Stockholm. One estimate we heard often was that an offshore Indian professional has a loaded cost of 30-50 percent relative to a U.S. professional. This finding is consistent with similar studies Arora et al. 2002). However, some offshore wage comparisons that appear in the trade press overemphasize cost savings because they ignore the other indirect costs of offshore IT work.

Interestingly, although Canada is not a nation that first comes to mind for offshore IT work, it is well worth considering, partly because of the currency differential. Canada now has a cost advantage for its IT professionals of about 30 percent relative to the U.S. In fact, it is on a par with Brazil and Ireland.

Cost efficiencies are not the only benefits of Stage 3. The discipline and rigor of the development methodology used by Indian firms benefited three companies in our sample. For American companies, the bestknown quality yardstick is the Capability Maturity Model (CMM),[2] and a number of Indian IT firms have attained world-class levels of quality by implementing CMM processes.

Stage 3 companies also shift low-value, monotonous, and boring work offshore to focus internal IT units on more interesting, higher value-added tasks. IT managers appreciate this benefit because it has become increasingly difficult to hire and retain domestic software professionals to perform the low-value tasks, especially in high-wage metropolitan areas.

We estimate that 30 to 60 percent of U.S. Fortune 500 firms are in Stage 3 in 2002. For some, the proportion of offshore IT headcount to total IT staff is between 10 and 20 percent.[3]

While the types of firms in Stage 3 vary significantly, they typically make intensive use of offshore third parties (primarily in India) for internal support functions (e.g., information systems). They were the early offshore adopters, beginning their Stage 2 experimentation in the early to mid-1990s. Thus, by 2002, they have accumulated a relatively long history of offshore work and have many employees with experience and confidence in this approach. In fact, this confidence is a key factor underlying the transition to Stage 4.

---

2 Software Engineering Institute (2002)

3 The ratio of IT headcount results from our own data. Separately, the proportion of the IT budget for those firms doing so-called selective IT outsourcing (both domestic and offshore) is typically 15-30 percent according to Lacity and Willcocks (2001).

2.4 Stage 4: Proactive Strategic Focus

In our estimation, no more than 10 percent of U.S. Fortune 500 firms have reached Stage 4 – where management no longer views offshore options as simply sources of low-cost work or suppliers of lower-valued work (Barthelemy 2001). Rather, management views offshore IT sourcing as an important and attractive strategy for achieving a range of strategic objectives (Ballon 2000; ITAA 2000). In addition to cost advantages, Stage 4 companies utilize offshore units to increase business innovation, spur technology innovation, develop new products, gain access to new markets, and grow globally (Kotabe 1992). In short, offshore sourcing becomes embedded in the firm's culture.

A key distinction between Stage 3 and Stage 4 is that the offshore partners of Stage 4 companies also routinely develop new IT products or systems, take ownership of entire IT systems or software products, and assume responsibility for end-to-end IT systems. In Stages 2 and 3, new development is rarely sent offshore. In Stage 4, it occurs regularly.

This transition to entrusting new systems to an offshore unit is significant because developing new systems involves domain expertise (or often, "business knowledge"). That domain expertise could mean understanding a financial modeling system of a bank, the consumer Web page of a retail company, or a new network management software package. One executive from a leading Wall Street firm told us that his company planned to send complex, turnkey projects offshore. The entire lifecycle – from requirements gathering through implementation and support – would be handled by the offshore IT professionals. In practice, such turnkey outsourcing is usually facilitated and managed by an onshore "bridge" organization established by the offshore vendor.

In Stage 4, managers also recognize their need to establish a global network of coordinated sourcing nodes, and then leverage that network to orchestrate new development and key support functions globally. For example, one company in our study set up IT centers around the world to provide 24/7 software engineering support. Each center has its own unique capabilities, talents, and timelines so that together the centers can fulfill any information systems need of the company in a timely manner.

Typically, software R&D organizations have units in many nations. Information systems units, on the other hand, tend to develop deep and intensive relationships with just one or two strategic outsourcing vendors which they then call preferred vendors. Indeed, some preferred offshore vendors have such tight relationships with their American clients that they have special bidding rights on projects and receive other inside- access privileges. In essence, they become extensions of their clients' internal IT units. This structure, which represents a significant departure from the traditional view of organizational boundaries, is similar to the network

organization forms (Useem and Harder 2000), business models, and governance arrangements of such celebrated companies as Dell and Cisco.[4]

Global coordination of resources also accelerates time-to-market. In a hyper-competitive global marketplace, there are compelling pressures to quickly bring new products and services to market. One-third of the large American corporations we surveyed noted that ramp-up time has become an important factor in their offshore decisions; significantly, the technology firms were the ones most concerned about this factor. Ramp-up is critical to project-level decision-makers because once a project is approved, they want the work to begin immediately. That means those people need to be available. Unlike U.S.-based human resources, the offshore units can staff quickly.

To manage their networks of corporate-wide offshore sourcing centers, the Stage 4 companies we interviewed established specific oversight units, with titles that include the term global, such as global engineering and global services. The term global is chosen because, as one of the executives quipped, the term offshore has some negative connotations.

These global oversight units amass and house the capabilities to manage the offshore activities, such as indepth knowledge about offshore suppliers, about their relative strengths and weaknesses, and about the pros and cons of insourcing versus outsourcing offshore centers. In some instances, these oversight units implement new measurement and reward systems that encourage project-level decision-makers to find the best software resources – inside or outside the corporation.

2.5 Tech Insourcers: One Type of Stage 4 Firm

We initially expected technology companies to be in Stage 4 and to have different organizational structures and mechanisms than the other companies. In general, technology companies have been more active in offshore work than non-technology companies. For example, as far back as 1974, IBM spent about 30 percent of its R&D budget on offshore R&D (Ronstadt, 1977). We therefore expected these firms to have accumulated considerably more experience in offshore IT sourcing. Indeed, we did find the technology companies behaving differently: They usually preferred to own their IT units.

Many of the Stage 4 firms are technology firms building wholly owned offshore development centers. We call them Tech Insourcers (insourcing because they

[4] For instance, Cisco utilizes contract manufacturers extensively for product development, and maintains close relationships with them. Likewise, Dell executes its direct-to-customer business model through a variety of deep relationships with component manufacturers and logistics providers.

fundamentally source from within their firms). Four companies in our sample fit this pattern. Three had global oversight organizations, usually headed by the corporate offshore champion – who traveled a great deal. One champion we interviewed had headed the global oversight organization for 10 years. Another made a deep personal commitment to the success of the new India center; he personally interviewed every candidate, out of several hundred!

In our sample, the size of each of the wholly owned offshore facilities was substantial – 400, 500, 1,000, and 2,000 professionals offshore. And all four offshore organizations were growing aggressively. Three had an extensive network of offshore development and support sites – 6, 9, and 16 sites, respectively. The fourth firm focused primarily on a large center in India.

Once Tech Insourcers build their offshore facilities, they use a variety of approaches to market their services. All four in our sample proactively sold their offshore services throughout their companies. Although this practice is common in most IT organizations, active and aggressive marketing is critical for offshore organizations because they are not part of the domestically located core IT function. To sell their offshore services to the various divisions within their corporation, they conducted seminars, set up Web pages, organized workshops, employed salespeople, and distributed brochures (one read "Leveraging Worldwide Engineering Talent").

The offshore groups at two Tech Insourcers were also creating internal "marketplaces" to match "customers" (internal product/program managers worldwide) with "suppliers" (internal offshore staff). These "marketplaces" potentially could create greater internal efficiencies.

The offshore sites used classic sales tactics to gain favor with promising internal IT customers by, say, pricing a project as a "loss leader" or using so-called staff augmentation as initial inducements. Staff augmentation is a label for importing inexpensive labor from low-wage nations. Though more expensive, it is easier to sell to reluctant managers because it does not require them to work with distant offshore units. In this respect, staff augmentation serves as an important bridgehead for advocating offshore outsourcing: Once these customers gain confidence working with the foreign staff on site, they will be more willing to work with the distant offshore staff.

Surprisingly, some of these giant tech insourcers used their offshore IT units for three quite distinct organizational functions: software product R&D, internal information systems work, and providing IT professional services to other firms. One firm supported all three streams of software work within its offshore units; another handled both software product R&D and internal information systems work.

Why were technology firms building their own offshore facilities rather than outsourcing to third parties? After all, American managers have become

accustomed to outsourcing to third parties (DiRomulado and Gurbaxani 1998). Indeed, the high transactions costs that drove vertical integration for much of the 20th century have become less relevant as the coordination costs of managing over distance and over organizational boundaries have declined. However, the managers we interviewed saw some clear advantages to internal offshore sourcing. Their rationales resemble the classic "build versus buy" argument that firms have used for decades. They prefer having vertical integration and an internal locus of control.

In particular, they underscored three advantages to vertical integration. First, ramp-up time is shorter because internal contracting is simpler. Second, insourcing has advantages in the areas of security, confidentiality, and maintaining proprietary knowledge. With an internal offshore unit, all professionals with access to internal systems are inside the security firewall. Thus, disclosure concerns are mitigated. Third, the internal IT professionals use standard software engineering tools, methodologies, and work processes, which reduce the project management burden. In addition, there is an unspoken reason for resisting outsourcing IT: Not surprisingly, technology companies want to maintain strong in-house technical capabilities.

3 U.S. Firms Will Move Up the Maturity Curve

Is this model deterministic? That is, do we expect a majority of large U.S. firms to transition to Stages 3 or 4? Our answer is "Yes." We believe the trend in offshore IT work parallels the labor shifts in other industries – most recently in electronics, textiles, and automobiles. The economics of sending IT work offshore is compelling, from both a production and transaction cost perspective (Ang and Straub 1998). More importantly, movement to Stage 3 or 4 is likely to occur due to broader economic forces: the elimination of trade barriers, the improvement of technologies that transcend time and space barriers, and the push for globalization coupled with the associated shift in corporate culture away from a domestic mindset.

Most firms will not evolve to Stage 4, though. We expect firms in which IT is not a significant source of competitive advantage to progress only to Stage 3 and reach a steady state there. For them, the additional advantages of developing the sophisticated internal mechanisms for Stage 4 are questionable.[5] Thus, firms in

[5] In both Stage 3 and Stage 4, offshore sourcing does not necessarily imply that a majority of the IT work is outsourced, or to use the term common in outsourcing – total outsourcing (more than 80 percent of IT budget). Rather we are describing an evolution in which only some of the firm's IT work is sourced offshore.

industry sectors such as energy, chemicals, and agriculture are more likely to stop at Stage 3.

By contrast, firms where IT is a significant source of competitive differentiation – either due to the cost efficiencies that IT offers or the business strategies that IT enables, or because IT is a core component of the firm's products and services – are likely to progress to Stage 4. These firms include those that compete on the basis of IT, such as financial services and retail, and, of course, technology firms, which create IT products.

4 Offshore IT Sourcing by U.S. Firms Will Continue to Grow

Offshore momentum was very strong into 2000, through the peak of the technology boom and the socalled "IT labor shortage" in the U.S., which also peaked in 2000. The U.S.-based ITAA estimated the U.S. shortage at 850,000 in 2000, dropping to 425,000 in 2001. Other geographies also experienced shortages in 2000. Europe's shortage was estimated at 1.7 million, Canada's was 50,000.

Our assessment is that growth will continue in sourcing IT work offshore for a number of years to come. While the growth rate slowed somewhat in 2001- 2002, corporate pressures to reduce costs remained strong. However, putting a figure on the global offshore picture is difficult. Adventis, a research firm, estimates that U.S. firms will spend some $7 billion on third-party offshore IT work in 2002. Narrower figures give more guidance: Forrester, a U.S. research firm, found that 44 percent of U.S. firms with more than $1 billion in revenues performed IT activities offshore in 2001, and Forrester estimates that percentage will grow to 67 percent by 2003 (for comparison purposes, a Fortune 1000 firm has $1.2 billion in revenue). Note, though, that these estimates do not include offshore sourcing to wholly owned facilities. Furthermore, offshore sourcing is but a small slice of the global market in IT outsourcing (both domestic and offshore), which is estimated to be more than $100 billion (and again, this figure does not include insourcing) (Lacity and Willcocks 2001).

The increasing prevalence of offshore sourcing is further supported by our qualitative field data. In our sample, 11 of the 13 corporations expected to grow their offshore IT workload aggressively. Several even mentioned double-digit growth. Many of the 13 planned to move much – but not all – of their systems support and software product support functions abroad, mainly to India. One corporation estimated spending $1 billion offshore. All these companies were investing in the infrastructure to grow their offshore work. The technology firms were focusing on building their wholly owned facilities offshore.

One technology firm planned to increase the size of six of its many offshore centers. Another hoped to triple the size of its India center in one year's time, expand its workforce in Russia, and establish a new site in another country as well. Finally, recent anecdotal evidence (from our on-going research) suggests that the growth in offshore sourcing is not limited to large corporations; small and medium-sized enterprises are turning their sights offshore to find lowercost, high-quality IT talent.

What are the limits, if any, to offshore outsourcing of IT? To answer this question we first consider the case of domestic outsourcing. Numerous forecasts point to increased IT (domestic plus offshore) outsourcing. But as Lacity and Willcocks (2001) observe, the proportion of firms that engage in total outsourcing (more than 80 percent of their IT budget) is relatively small – and many have had a mixed record of success. Similarly, Agarwal and Sambamurthy found that a completely outsourced IT function is not a sustainable organizational model (Agarwal and Sambamurthy 2000). We believe the case for offshore IT sourcing is not substantially different. To meet their IT needs, firms must retain some core innovative development functions, such as strategic planning functions and the architectural blueprint of their overall IT portfolio. For technology firms, core innovative activities often will not be delegated offshore either. So there is a limit to both the types as well as the magnitude of IT activities that will migrate afar.

5 The Global IT Labor Supply Will Grow and Mature

Asserting that offshore IT sourcing will continue to grow is supported by the maturation of the global IT labor supply. The offshore vendors are expanding their competencies beyond programming to such areas as relationship management with U.S. firms, domain knowledge of key business functions, and sophisticated project and process management techniques.

There is also evidence that this labor force will grow in size. While labor markets in industrialized nations tightened in the 1990s, they grew rapidly in other countries. Through roughly 1,000 offshore vendors, the Indian offshore IT industry employed approximately 170,000 software professionals in 2002, and the country is producing 122,000 software engineering graduates a year. Russia has between 100-200 offshore vendors, several thousand software professionals working in these firms, and countless other scientists and engineers working (and moonlighting) as programmers.

U.S. firms now outsource IT work to the four corners of the globe: near-shore to Canada, Mexico, and the Caribbean, and faraway to such locations as the

Philippines, Russia, China, and most of all, India. The firms in our study had development and support units in 26 of the nations of Figure 2.

All our study companies had some activity in India. Indeed, India dominates the mental model of U.S. executives because it combines low-cost, high-quality work processes, a large supply of qualified labor, and an English-speaking workforce.

India also dominates the offshore scene because it has built a cadre of highly professional IT services firms. Tata Consultancy Services, Infosys, and Wipro are the three largest. They compete with such American global powerhouses as EDS, Accenture, and PwC. The Indian firms have positioned themselves to compete with U.S. outsourcing vendors by building large "onshore/offsite" centers in many U.S. cities. Of the 23 firms in the world that have been awarded CMM-5 status for the quality of their software engineering processes (the highest such level), 15 of them are Indian (Field 2002). Finally, India offers another advantage that few other nations can match - scalability. Indian firms have the potential of growing offshore software centers to hundreds or thousands of IT professionals, if desired, due to their country's large educated labor force. Only two other large nations have this scale potential - China and Russia - and these two nations currently lack the managerial resources to grow largescale global businesses as the Indians have done successfully.

In summary, CIOs and CTOs will soon have an even larger set of offshore options. The traditional locations for offshore talent are being supplemented by a variety of boutique and emerging destinations. Stage 1 and Stage 2 firms just beginning to learn about offshore IT sourcing should probably start with a "major offshore destination" because their maturity will offset the client's inexperience – increasing the likelihood of a good first experience. In contrast, Stage 3 and Stage 4 firms can be more adventuresome and seek to develop relationships with firms in emerging potential destinations because their managers have enough knowledge and experience to manage relationships with less mature IT sourcing destinations.

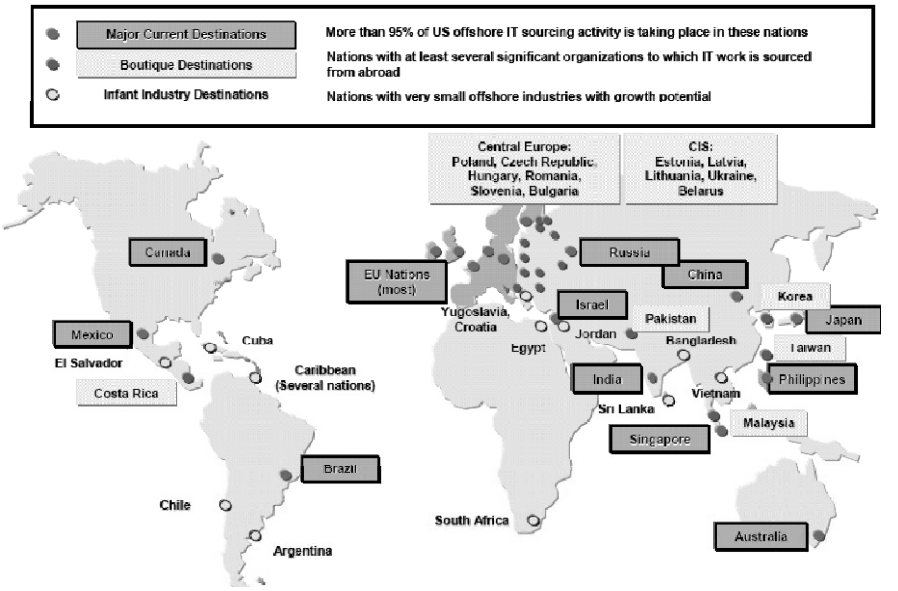


Figure 2: Offshore IT Destinations for U.S. Firms

6 Recommendations for IT Executives

Firms go global for many reasons: to expand sales, to acquire resources, to diversify supply sources, and to minimize competitive risk. The relatively recent trend of offshore sourcing of intellectual labor, rather than manufacturing capacity or natural resources, is arguably an inevitable outcome of globalization. Our findings suggest that practitioners not currently sourcing IT work offshore need to examine their IT sourcing strategies. The challenges of offshore work notwithstanding, there are compelling reasons for exploiting location-specific advantages. The leading-edge firms in our study recognized these advantages and have positioned themselves to reap the benefits of overseas resources, while overcoming the structural and cultural barriers.

How can a CIO ease the evolution to Stage 3 or 4? Fundamentally, it involves changing the corporate culture to view offshore work as an acceptable business strategy. We offer three recommendations based on our interviews.

One, give offshore sourcing the same strategic importance and visibility as other strategic initiatives. Support managers who support champions – the ones willing to step up to the risks of advocating a new approach within the company. Most significantly, obtain senior executive commitment and involvement in the

initiative. When employees sense that an effort does not have executive backing and support, resistance is more likely to surface.

Two, overcome fears that can derail offshore sourcing. The use of offshore resources creates uncertainty and turmoil among internal staff. Employees believe that the centrality of their roles is being undermined. They may have a hard time "letting go" of their products and projects. They fear reduced responsibilities. Worst of all, they fear being displaced.

Similarly, IT managers worry about how they will manage resources over which they have limited control. They especially fear that the performance of these resources will drive their own evaluations. These impediments and barriers can be overcome through a broad-based communication program, along with clear policies regarding the impact that offshore resources are likely to have on employees.

Three, foster internationalization. Offshore IT sourcing can make divisional and organizational boundaries porous. Many offshore projects co-mingle offshore and onshore resources, including business staff, internal domestic developers, and offshore developers. Such efforts are more likely to fail if employees' attitudes and behaviors are narrow minded and inward looking. IT staff members need to reduce the actual or perceived cultural distances between themselves and their partners. This internationalization can be accomplished in several ways: by increasing diversity in the ethnic backgrounds of employees, through cultural awareness programs, and perhaps even through overseas sabbaticals for key staff.

References

Agarwal, R., and Sambamurthy, V. Organizing For Hypercompetition: A Guidebook of Practice for the IT Function, SIM International, Chicago, IL, 2000.

Ang, S. and Straub, D. "Production and Transaction Economies and IS Outsourcing: A Study of the U.S. Banking Industry," MIS Quarterly (22:4), 1998, pp. 535-552.

Arora, A., Arunachalam, V.S., Asundi, J.M., and Fernandes, R.J. The Globalization of Software: The Case of The Indian Software Industry, Final Report, February 2000, Heinz School, Carnegie Mellon University, http://www.heinz.cmu.edu/project/india/. Accessed on June 19, 2002.

Ballon, M. "U.S. High-Tech Jobs Going Abroad," Los Angeles Times, April 24, 2000.

Barthelemy, J. "The Hidden Costs of IT Outsourcing," Sloan Management Review (42:3), Spring 2001, pp. 60-69.

Carmel, E. Global Software Teams: Collaborating Across Borders and Time Zones, Prentice Hall PTR, Upper Saddle River, NJ, 1999.

Chazan, G. "Now Available from Russia: Software Programming, " *The Wall Street Journal*, August 6, 2001, page B1.

DiRomulado, A. and Gurbaxani, V. "Strategic Intent for IT Outsourcing," Sloan Management Review (39:4), Summer 1998, pp. 67-80.

Copeland, L. „Ford Opens IT Hub in India to Save Millions," *Computerworld*, March 19, 2001

Field, T. "For a Few Rupees More," CIO Magazine, December 1, 2000, http://www.cio.com/archive/120100/rupees.html. Accessed June 19, 2002.

ITAA. Bridging the Gap: Information Technology Skills for a New Millennium. Washington D.C.: Information Technology Association of America, April 2000.

Kotabe, M. Global Sourcing Strategy, Quorum Books, New York, NY, 1992.

Lacity, M. C. and Willcocks, L.P. Global Information Technology Outsourcing: In Search of Business Advantage, Wiley, New York, NY, 2001.

Lacity, M.C., Willcocks, L.P., and Feeny, D.F. "IT Outsourcing: Maximize Flexibility and Control," Harvard Business Review (73:3), May-June 1995, pp. 84-93.

Monckza, R.M. and Trent, R.J. "Global Sourcing: A Development Approach," International Journal of Purchasing and Materials Management, Spring 1991, pp. 2-8.

Ronstadt, R.C. Research and Development Abroad By U.S. Multinationals, Praeger, New York, NY, 1977.

Software Engineering Institute Capability Maturity Model Integration, http://www.sei.cmu.edu/cmmi/. Accessed on April 23, 2002.

Useem, M. and Harder, J. "Leading Laterally in Company Outsourcing," Sloan Management Review (41:2), Winter 2000, pp. 25-36.

Appendix: Study Methodology

The Study Sample

We used a stratified sample from among the largest U.S. firms from both technology and non-technology groups (see Table 1). We chose only U.S.-head-quartered firms. We hypothesized that technology companies might be more active in offshore sourcing and might behave differently than non-technology companies.

Data Collection Approach

We interviewed 20 executives from 13 corporations and supplemented these interviews with follow-up messages and conversations. Respondent titles included head of global software engineering, head of enterprise development services, and director of global strategic IS planning. Interviews were conducted between January 2000 and October 2000. Interview data was supplemented with publicly available data about the firms and was analyzed utilizing qualitative methods. Specifically, we analyzed the interview transcripts twice. In the first analysis, we extracted factual answers to questions raised a priori, such as the extent of sourcing, decision drivers, rationale for site decisions, and internal corporate dynamics. During this analysis we also discovered additional tactics and processes being utilized by firms – for instance, how offshore work was incented and how projects were controlled and orchestrated. In the second analysis, we sought to ascertain patterns in how the sample firms utilized global sourcing of IT work and the contingencies that appeared to distinguish between the patterns.

Table 1: Sample Summary

Major Non-Technology Firms	Most of the U.S. Fortune 200 fall within this category, e.g., financial services, manufacturing, retail.	5 from the 200 largest U.S. non-technology firms (Fortune 500, 2000)
Major Technology Firms	These are companies that develop software products that either stand alone or are embedded in larger systems that may include hardware. Typical firms in this category include Motorola, Intel, IBM, Texas Instruments, Microsoft, and Oracle. Some of these firms also offer professional services. In addition, the firms have substantial internal information systems needs. Some technology firms offer only IT professional services. These companies provide systems services such as consulting, contracting, outsourcing, and system integration.	6 from the 200 largest U.S. technology firms (Fortune 500, 2000) 2 from the 20 largest U.S. IT professional services firms (ranking by Global Technology Business, 1999)
Total		13 total, including 3 of the Top 10 in the Fortune 500

Managing Cross-Cultural Issues in Global Software Outsourcing[1]

S. Krishna

Indian Institute of Management, Bangalore, India

Sundeep Sahay

Department of Informatics, University of Oslo, Norway

Geoff Walsham

Judge Institute of Management, University of Cambridge, UK

1 Managing Cross-Cultural Issues in Global Software Outsourcing

IT outsourcing continues to be a booming business. The reasons why companies choose to outsource have been well-documented, including reduced cost, improved performance, and access to wider labor markets (Barthélemy, 2001; DiRomualdo and Gurbaxani, 1998). One aspect of IT outsourcing is the outsourcing of software production, and an important trend which started in the 1990s, and continues to the present time, is to outsource software production globally (Lacity and Willcocks, 2001). Much of the software development takes place in the 'offshore' locations, where costs are low and labor in plentiful supply. Software suppliers normally maintain small 'bridgehead teams' in the client countries for sales and customer liaison purposes. Outsourcers in turn often locate executives in the supplier countries, for example to oversee large projects.

All of this makes good economic sense for both sides of a cross-border outsourcing relationship, but it raises the question of how best to manage the process. In

[1] This paper previously appeared as: Krishna, S., Sahay, S., and Walsham, G. "Managing cross-cultural issues in global software outsourcing," Communications of the ACM (47:4) 2004, pp 62-66. The current version appears with permission of *Communications of the ACM.*

particular, cross-cultural issues are likely to come into play here in a big way, as they do for example in the management of international joint ventures (Brannen and Salk, 2000). We have been investigating such issues over a 5-year period, primarily through in-depth case studies, and with a particular empirical focus on outsourcers in North America, Western Europe and Japan to software suppliers in India.[2]

The primary conclusion from our research is that working across cultures when outsourcing software production is not a trouble-free process (Nicholson and Sahay, 2001). Particular societies tend to have distinct ways of working, and these can prove problematic when attempting cross-border collaboration. For example, Indian software companies have found that they need to approach communication with US and Japanese clients in very different ways. US client companies normally work to extensive written agreements and explicit documentation, reinforced with frequent and informal electronic contact through media such as e-mail. In contrast, Japanese clients tend to prefer verbal communication, more tacit and continuously negotiated agreements, and less frequent but more formal use of electronic media.

A second area where problems can arise in cross-border outsourcing is in the cultural adaptation of the bridgehead teams working in the client countries. Challenges not only concern the need to adapt to different ways of working, but to cultural norms of social behaviour, attitudes to authority, and language issues. For example, some Norwegian outsourcers express a preference for Russian software suppliers rather than Asian companies. They explain this in terms of physical proximity, the similarity of the 'European mindset', and the relative ease with which Russians can learn the Norwegian language.

How can the cross-cultural difficulties of global software outsourcing relationships be addressed? This is the focus of the rest of our article.

---

2 We have also carried out some more limited empirical work involving software suppliers in China and Eastern Europe, and we have studied the literature and interacted with other researchers on all aspects of cross-border outsourcing. On the basis of this, we believe that the analysis and conclusions of our article apply quite generally to cross-cultural software outsourcing relationships.

3 Our conclusions, as summarised in the tables below, apply to the relationship between outsourcers and software suppliers, and thus have relevance for both sides of that relationship. In cases where the conclusion relates specifically to the outsourcer or supplier, we have indicated this in the table.

2 Strategic Choice of Projects

One approach to handling the difficulties of cross-cultural working is through the appropriate choice of projects to be outsourced. For example, software which is to be 'embedded' in operating systems or consumer products can often be specified in a relatively 'culturally-neutral' way, so that software development needs less cross-cultural understanding. Similarly, 'middleware' is a layer of software between the network and the applications, which performs the function of enabling different end-user systems to communicate more effectively with one another in advanced network applications. This again can often be specified in a way that does not depend on continuous cross-cultural contact between outsourcer and supplier.

Table 1: Choice of Software Projects for Cross-cultural Outsourcing

Minimize cross-cultural issues through project choice of 'culturally-neutral' software	• Embedded software • Middleware
Use relationship to learn about leading-edge business systems, particular business sectors or higher-level software work	• For example, in telecomms or e-business systems (outsourcer) • To gain domain expertise/move up the value chain (supplier)
Choose applications software only when good cross-cultural working feasible	• Cross-cultural match • Or major effort through staffing/training

A second strategic approach to the choice of appropriate projects concerns the value in learning that can be gained through them. Many Indian software suppliers have acquired knowledge in the telecommunications and e-business domains through projects carried out for North American and European companies. This has resulted in some cases in Japanese outsourcers being keen to learn from the Indian software suppliers about leading-edge business systems in these domains. Software suppliers in developing countries such as China often focus on particular outsourced projects which offer them the opportunity to gain domain expertise, in the banking sector for example; or to move up the value chain, from tasks such as simple maintenance to higher levels of project involvement and ownership.

The development of applications software is only a good strategic choice for cross-border outsourcing where conditions are such that effective in-depth working relationships can be achieved throughout the project. This exists where, for example, there is a good cultural match, such as that between Japan and China for example. This match relates not merely to linguistic closeness, but also to compatible ways of working, and understanding of user attitudes. Similarly,

Indian software developers speak English and often have extensive educational and cultural contact with the UK, so that there is normally a good cultural match here also. In contrast, Germany has not been very successful in attracting Asian software developers to work there, reflecting cross-cultural barriers of language and culture. The harder way to achieve effective cross-cultural working, where the cultural match is not close, is through careful attention to issues such as relationship management, staffing and training, as discussed below.

3 Managing the Relationship

Table 2: Approaches to Managing the Cross-cultural Relationship

Use systems to harmonise between outsourcer and supplier	• Coordination/control systems • Processes • Technology
Understand differences in norms and values	• Hierarchy/power • Business practices
Encourage 'negotiated culture' of cross-cultural teams developing compromise 'working culture'	• Bridgeheads and exchange mechanisms • Staffing and training

In all cases of cross-border outsourcing, active management of the client-supplier relationship on both sides is of key importance. The use of common systems is one way in which the relationship can be facilitated (Heeks et al., 2001). Such systems include agreed coordination and control mechanisms, for example to report on and monitor project progress. Further harmonisation can be achieved through common processes such as systems development methodologies (Gopal et al., 2002), and common compatible technologies in terms of computers, software systems and telecommunications links.

However, although much can be achieved through the use of compatible technology and systems, it is important to recognise the limits of this approach. Major differences in norms and values cannot be 'harmonised', since they derive from deep-seated differences in cultural background, education and working life. Examples include attitudes to hierarchy and power, and different business practices. For example, British managers in an outsourcing relationship with a particular Indian software supplier found that Indian programmers, in deference to authority, would not voice criticisms in face-to-face meetings but would sometimes send their opinions in e-mails after the meeting. The British managers, used to intense interaction and the development of ideas through meetings, felt

frustrated at this 'polite' behaviour (Nicholson, et al. 2000). Such difficulties can, however, be recognised and understood, but it requires substantial effort on the part of both sides in the cross-border collaboration.

An attempt to understand and move some way towards the other partner in a cross-cultural collaboration has been called a 'negotiated culture' perspective (Brannen and Salk, 2000). This perspective focuses on attempts to form and develop cross-cultural teams so that a compromise 'working culture' is achieved in which both sides of the partnership modify their work behaviours to take account of the cultural norms of their partners. For example, Germans and Japanese typically have very different attitudes to 'out of hours' working. However, it was noted in a particular German-Japanese international joint venture that some of the German managers began to stay later at work while many of the Japanese worked fewer hours than they were accustomed to in Japan (Brannen and Salk, 2000). Negotiated culture of this type is not something that can be achieved easily, and normally only occurs over a significant time period. Approaches to its achievement include the use of bridgehead teams who spend significant periods in client premises, exchange of staff on a long-term basis between cross-cultural partners, and staffing and training issues as discussed below.

4 Staffing Issues

Table 3: Choice of Staff and Incentives

Recognise limits to cultural adaptation	• Foreigners cannot 'become' locals
Use 'cultural bridging' staff	• People rooted in both cultures • Locals as on-site workers (supplier)
Use locally-relevant recruitment and retention incentives	• Salary • But also status/expertise acquisition

Although some movement towards other cultures is possible, it is unrealistic to expect expatriates in any country to be able to think and act like locals. This can create serious problems in areas such as applications software development, where in-depth client contact is needed. As one approach to this problem, successful outsourcing relationships often involve people who can 'bridge' cultures. For example, people originally from India, but with higher education and long-term residence in North America, have been reposted to India as expatriate managers for outsourcing projects. Such managers have often been very effective in overseeing complex outsourcing projects.

A complementary solution to the problem of cultural bridging is for the software supplier to maintain a mixed cultural team in the client country. Locals in this country can then be used to perform a range of tasks, including being members of the sales force and of bridgehead teams in client premises, or sometimes as senior staff dealing with the corresponding level in the client company. One reservation that third world software suppliers have about employing 'first world' staff is cost. However, such staff should be regarded as an essential overhead for major projects.

How can such link people be recruited and retained? Salary is one means, but there are cultural differences in the weight which is ascribed this factor. In many western economies, such as the USA, salary is arguably the most important incentive for many people. In Japan, for example, this is less so, with many Japanese being very concerned about the status of the employing company rather than merely the salary. This is one of the problems that Indian companies, for example, have in recruiting locals in Japan. In a similar fashion, German companies have often found it difficult to locate managers with the right profile for directing their development centres in Asia. A suitable person, apart from technical competence, has to be open and adaptable to the very different living and work environments. Recruitment and retention packages for staff need to be tailored to the realities of these issues in specific contexts and labor markets.

5 Training

Table 4: Training Needs and Processes

Give pre-posting cultural training for supplier employees working in outsourcer companies (supplier)	• Language • Cultural practices, norms and values
Develop systematic on-the-job cross-cultural training	• To reflect on ongoing experience • To share knowledge with colleagues
Recognise that training needs are two-way (outsourcer)	• Not just for supplier staff

Many organizations, including those in the cross-border software business, do offer pre-posting cultural training for employees, varying from very basic orientation courses through to rather more substantive programs on language and cultural practices (Forster, 2000). For difficult software outsourcing situations, such as Indian companies working in Japan (Khare, 1999), the fuller type of program is certainly necessary.

Systematic on-the-job cross-cultural training is less common in our experience. Staff involved in cross-border relationships learn ways to achieve better cross-cultural collaboration, but there tends to be no structured opportunity at which this experience can be reflected upon and shared with colleagues in a formal way. Informal sharing of experience is of course very important. However, we would argue that formal cross-cultural training should not stop when the staff member has arrived at the foreign posting.

A further issue is that cultural training is often perceived as only necessary 'one-way', namely for the staff from the software supplier to learn about the culture of the country of their client organizations. Regardless of any ethical concerns about such a culturally-blind attitude, it is surely bad business practice also. Training for cross-border software outsourcing should be seen as a two-way learning process. Then, all aspects of the relationship from contract negotiation through to the delivery of the final software product can take place on the basis of a well-informed understanding of the culture and business practices of one's customer or supplier.

6 Conclusions

In this article, we have suggested ways of tackling problems and challenges in cross-border software outsourcing relationships. These involved the strategic choice of appropriate projects in the first place, ways of managing the relationship, and approaches to staffing and training. Although targeted on software outsourcing, many of our conclusions are also relevant to the area of global software teams operating within a specific company (Carmel, 1999). Some increased convergence of attitudes and approaches can be expected in such a context, when compared to outsourcing to a different company, but the challenges of working in multi-cultural teams still apply.

We are living in a more globalized world, in which there is increasing interconnection between different societies, and cross-border software outsourcing provides one example of this. But globalization does not imply homogeneity of culture (Walsham, 2001). In working in the contemporary world, we need to make extra efforts to tackle the cross-cultural issues that arise. This should lead not only to more effective business practices, in areas such as cross-border software outsourcing, but also to a world of increased cross-cultural understanding.

References

Barthélemy, J. The hidden costs of IT outsourcing. *MIT Sloan Management Review* 42, 3 (spring 2001), 60-69.

Brannen, J.V., and Salk, J.E. Partnering across borders: Negotiating organizational culture in a German-Japan joint venture. *Human Relations* 53, 4 (2000), 451-87.

Carmel, E. Global Software Teams. Prentice-Hall, New Jersey, 1999.

DiRomualdo, A., and Gurbaxani, V. Strategic intent for IT outsourcing. *Sloan Management Review* 39, 4 (summer 1998), 67-80.

Forster, N. Expatriates and the impact of cross-cultural training. *Human Resource Management Journal* 10, 3 (2000), 63-78.

Gopal, A., Mukhopadhyay, T., and Krishnan, M.S. The role of software processes and communication in offshore software development. *Communications of the ACM* 45, 4(April 2002), 193-200.

Heeks, R.B., Krishna, S., Nicholson, B., and Sahay, S. Synching or sinking: Global software outsourcing relationships. *IEEE Software* 18, 2 (Mar./Apr. 2001), 54-61.

Khare, A. Japanese and Indian work patterns: A study of contrasts. Chapter 7 in Management and Cultural Values: The Indigenization of Organizations in Asia, H.S.R. Kao, D. Sinha and B. Wilpert, eds., Sage Publications, New Delhi, 1999.

Lacity, M.C., and Willcocks, L.P. Global Information Technology Outsourcing. Wiley, Chichester, 2001.

Nicholson, B., and Sahay, S. Some political and cultural issues in the globalisation of software development: Case experience from Britain and India. *Information and Organization* 11, 2001, 25-43.

Nicholson, B., Sahay, S. and Krishna, S. Work practices and local improvisations with global software teams: a case study of a UK subsidiary in India. Proceedings of the IFIP Working Group 9.4 Conference on Information Flows, Local Improvisations and Work Practices, Cape Town, May 2000.

Walsham, G. Making a World of Difference: IT in a Global Context. Wiley, Chichester, 2001.

Knowledge Management in Offshore Software Development

Brian Nicholson

Manchester Business School, Booth Street West, Manchester, UK

Sundeep Sahay

Institute of Informatics, University of Oslo, Norway

1 Introduction

Knowledge management has emerged as an important area of information systems research and practice. Over the last few years, related theory and practice has turned to supporting knowledge intensive work in organisations with operations spread across the globe. Waves of specific technologies have been presented as the "silver bullet" in complex distributed or networked organisations but despite the optimism the study of the capacity for information technology to support the management of knowledge remains highly contentious. For example, McDermott (1999) tells how technology led approaches to knowledge management can lead to expensive failures. Offshore software development is an interesting example of knowledge intensive work. For a number of reasons such as cost savings and access to skills, many companies are engaging in offshore software development either by outsourcing to third party vendors or setting up their own offshore subsidiaries in countries such as Ireland, Russia, China and India (Apte 1990, Carmel 1999, Nicholson and Sahay 2001, Sahay et al 2003). The significant reduction in cost, improved reliability and capacity of international telecommunications have provided the conditions for development to be done in locations far removed from end user sites. Despite these improved technical conditions, the problem of knowledge management in these operations is highly significant and still inadequately understood.

In order to contribute to the debate surrounding knowledge in such distributed software development operations, this paper presents the results of a longitudinal interpretive case study of British software developers (from a company we call Sierra) working with their counterparts from their Indian subsidiary. Sierra opened an offshore development subsidiary in 1998 but closed it in early 2000. This is an interesting case for two main reasons: firstly it is an example of a failure

and so allows us to consider lessons for future ventures. Secondly, unlike the large firms like Nortel and Texas Instruments that have previously established offshore centres, Sierra in contrast is a small, flexible dynamic software house that thrives on innovation and creativity. Firms like Sierra, are what Saxenian (2001) describes as "born global". An analysis of Sierra provides us insights on how these born global firms work in practice. These insights help to illuminate our understanding of the implications of globalisation processes.

There is a fast burgeoning literature on the subject of knowledge management and information systems (see Alavi and Leidner (2001) and Robey et al (2000) for comprehensive reviews on the subject). A subset of this literature is concerned with knowledge sharing which is of specific concern to our study. Of importance in this area is the community of practice approach (Lave and Wenger 1991) to understanding learning in professional and social groups. The community could be a group of photocopier technicians as related by Orr (1990). Other community of practice examples might be related to tailoring or midwifery practice or the community of research staff in an academic department. The many communities encountered in organisations are distinct in that they are typically drawn together by some shared mission or goal, a shared understanding of what the community does and how to do it. The community faces common problems requiring solutions and thereby collectively embodies knowledge. Lave and Wenger (1991) define the concept as:

> a set of relations among persons, activity, and world, over time and in relation with other tangential and overlapping communities of practice. A community of practice is an intrinsic condition for the existence of knowledge, not least because it provides the intrinsic support necessary for making sense of its heritage.

Learning is achieved in the community through engagement in situated practice under the conditions of legitimate peripheral participation. Participation for newcomers is initially peripheral but over time through engagement with the community may reach full participation. The feasibility of participation though is governed by issues of *legitimacy* related to access, social structure and power relations within the community.

The community of practice concept has become influential and has been used in a number of recent theoretical and empirical studies (Boland and Tenkasi 1995, Hayes 2001, Hayes and Walsham 2001). These studies in various ways demonstrate the importance and capability of information technologies in supporting a community of practice. Hayes and Walsham (2001) for instance in their analysis of groupware usage discuss the importance of surveillance free "safe enclaves" for effective community learning. To date there is no empirical study that specifically addresses the international dimension in supporting the dynamics of knowledge sharing in communities of practice across time and space in different countries. This issue together with analysis of knowledge sharing in offshore software development are central contributions of the paper.

The paper starts with perspectives on the process of evolution of offshore software development relationships and the important role that knowledge sharing processes play in shaping the evolution of the relationship. The unit of analysis here is concerned mainly with the project team and the impact of knowledge sharing on the strategic trajectory at an inter organisational level. This is followed in section three by a discussion of the research approach and a review of pertinent concepts related to knowledge sharing to develop the conceptual scheme. Following this we provide an outline of the case history and analysis drawing on the theoretical ideas outlined earlier. Finally in section five we discuss the more general implications of the case for developing a richer understanding of communities of practice in offshore software development.

2 Conceptual Scheme: Knowledge and Offshore Software Development

Offshore software development relationships typically go through phases of initiation, to one of growth and then to a maturing of the relationship (Carmel 1999, Nicholson 1999, Nicholson and Sahay 2001). While this is not supposed to be an articulation of an ideal and deterministic model, these phases help to serve as a metaphor to help make sense of the case study events over time. Initiation of a software development relationship, whether involving a 3rd party or a wholly owned subsidiary, typically start with small and relatively structured projects. Attempting projects beyond simple easily specifiable coding work would typically involve a collocated team from both sides of the relationship. For this, various products, processes, practices and notations enable 'knowledge' to be readable and usable by those involved in the software development process (Telioglu and Wagner 1999). Products could include programming languages and application tools. Technical processes relate to development and project management methodologies and quality process such as ISO 9000 and Capability Maturity Model. Practices typically concern culturally accepted norms, such as approaches to learning, problem solving and communication. Notations include specifications, flow charts and other similar inscriptions. The specific content required varies with the different stages of the software development relationship.

Over time, as a shared understanding of this knowledge develops between the two sides, an increased proportion of the development tasks can then be moved offshore where the costs of development are cheaper. For a relationship to develop into the "growth phase," there needs to be shared knowledge based on the early experiences and interactions that support the building of personal relationships. Growth also builds upon a track record of success with meeting deadlines and quality standards supported by well-defined contracts (Sabherwal 1999). A crucial task in the growth stage is to manage the balance between offshore and on-

site work. Budget constraints are crucial to defining this balance since tangible costs are reduced with increased offshore presence, even though the intangible costs of management overheads required for coordinating offshore work might be significantly higher. This onshore - offshore balance is not static, it shifts over time depending on the demands of either new work or peaks and troughs in the current workload. The balance between on and offshore also depends on the level of shared understanding between the groups and new staff would typically be given a period onshore.

We have chosen to examine the case using theoretical concepts concerned with sharing knowledge in communities of practice (Brown and Duguid 1991, Lave and Wenger 1991). We chose this theoretical approach because there is a dearth of studies of such interorganisation knowledge sharing working across cultures. The community of practice view of learning was attractive to us because it helps to go beyond a view that emphasizes the inherent capacity of information and communication technologies to "transfer" all facets of knowledge required for software development. Brown and Duguid (2000) differentiate between information and knowledge: knowledge requires a person or *knower*, knowledge is harder to *detach* from the knower than information, as it requires *background understanding*. Examples of such integration is seen in Orr's (1990) study of Xerox technicians who formed tacit background knowledge through a process of face-to-face socialisation, storytelling and hands on experience. This made the talk and the work, the communication and the practice inseparable. The Xerox technicians were co-located for at least some periods during the working week, which made their learning deeply related to their everyday practice. In communities of practice, learning is viewed as *situated.* This contrasts with "knowledge transfer" models (e.g. Nonaka and Takeuchi 1994) that tend to isolate knowledge from practice. The community of practice school develops a view of learning as social construction with an emphasis on the context within which knowledge has meaning.

Knowledge is understood to be produced and held when people work together in tightly knit groups. Such communities of practice are able to muster collective 'know-how,' the sharing of which is deeply rooted in practice, and through which members develop mutual understanding of *what* it does, of *how* to do it, and *how* it relates to other communities of practice. The processes of developing the knowledge and the community are interdependent; the practice develops the understanding, which reciprocally changes the practice and extends the community (Brown and Duguid 1991, Lave and Wenger 1991).

Individual learners are central as they become practitioners by engaging in practice under the conditions of legitimate peripheral participation in the community. *Peripherality* is concerned with the access learners have to the periphery of communication, examples being the email, informal meetings, stories, practices and technique of the community. Learning requires full participation of newcomers to learn from "old timers" community practices that

are dependent on the various sources of knowledge used by members. This learning is shaped by the *legitimacy* of participation, the socio-political context that may impede or encourage participation and interaction of members.

Another issue of importance to researchers is how to sustain communities of practice across time and space. Hayes and Walsham (2001) in their analysis of groupware in a pharmaceutical company demonstrate the importance of the political context in developing legitimacy of participation in the community learning. Hayes (2001) discusses the opportunities that groupware offer to disembedd social relations (Giddens 1990) from local contexts and the some of the issues that support and undermine participatory and learning processes. Brown (1998) and Boland and Tenkasi (1995) discuss various information and communication technologies might support communities of practice across time and space. Walsham (2001) points out some of the problems and issues in using information technologies to support communities of practice within and between communities. Key to Walsham's critique is the "sense giving and sense reading" activities of receivers of inter community communication meaning that the interpretive frameworks of individuals in different communities or across time and space in different countries and cultures may make participation problematic. This may be exacerbated by electronic media that remove bodily cues characteristic of situated face-to-face contact.

As Walsham (2001) indicates, there are far different and greater complexities involved when attempts are made to stretch the community of practice between different countries. For example, Lam (1997) describes a collaboration between a British and Japanese company and argues that different approaches to knowledge of the two side contribute to the tremendous complexity. Lam argues that while the Japanese firm's design approach relied on experimentation, intensive interaction and learning by doing, the British used a formalised approach emphasizing the use of an explicit high level design language. The Japanese design did not appear consistent and logical to the British who expected explicit formal specifications but the Japanese had a better understanding of the tacit nature of know-how that is held organically within the individuals in the group and is difficult to encode and transfer. Eventually after many attempts at direct collaboration, the two companies abandoned attempts at direct collaboration.

To give greater clarity to the analysis of our case, we draw on 'images' of organizational knowledge (Blackler 1995). Blackler concurs with Brown and Duguid (1991) arguing for a view of learning which is concerned with knowing in action, and accepts the importance of improvisations in the course of practice which are often undocumented and unformalised. The images of knowledge presented include knowledge that is *embedded* into routines and systems or *encoded* into manuals, codes of practice and dialogue that are *embrained* and *embodied* within human actors and *encultured* in the norms and conventions of a culture. While these images if viewed as categories, may suggest incommensurability with the community of practice paradigm, we draw upon them as

metaphors, similar to Morgan's (1986) images of organisation. We regard the images in relation to practice as essential constituents of knowing in action but accept they are overlapping and inseparable at that point. The images are inextricably interlinked in that they "come to life" in the individual at the point of instantiation during the act of "knowing in action" during practice. An expert chef practices using often tacit knowledge of recipes, ingredients, equipment, routines of the kitchen, tastes of the diners etc. The images of knowledge allow us to unpack the concept of "knowing in action" and apply it to the context of distributed development.

For the case analysis, we draw on three of Blackler's images: encoded, encultured and embedded knowledge. Encoded knowledge is conveyed by signs and symbols within manuals, notations, standards and codes of practice that need to be encoded and transmitted electronically using various information and communication technologies. The debates around what constitutes encultured knowledge are complex but we simply take it to imply 'the way things get done' referring to the process of achieving shared understandings. Encultured knowledge reflects more broadly the structures, policies, norms, traditions, rituals and values of an organisation or society (Smircich 1983). While some aspects of this knowledge are formalised into rulebooks and codes of practice, other aspects are less formal, shared and negotiated during informal socialisation depending on language. There is considerable evidence of programmers and analysts approaching the information systems development process differently in different countries based on varying encultured practices (e.g. Ein Dor 1992). Embedded knowledge is that which resides in routines, technologies, roles, formal procedures and methods. Development methodologies and project management plans where knowledge is embedded into the routines would be key examples of this.

In summary, our conceptual scheme is concerned with *legitimate peripheral participation* in a community of practice stretched across time and space. To clarify our analysis, we draw on three images of knowledge : encultured, encoded and embedded images of knowledge.

3 Research Approach

The research approach follows an interpretive case study methodology (Walsham 1995, Walsham and Sahay 1999) conducted between 1998 – 2000. Events prior to 1998 were historically reconstructed. This involved a single case of a subsidiary arrangement of the British firm 'Sierra'. In addition to the pragmatic reasons of gaining access, this case was selected because it was unique. Sierra despite being a small firm, by establishing this subsidiary were willing to make a long-term and strategic commitment involving considerable risk. We met participants from both India and the head office in England at regular intervals of time in order to gain

insights into the nature of the relationship, how it was evolving, and how the unfolding events compared to what the respondents had expected earlier. All together fourteen semi-structured interviews with senior management and programmers took place during three field trips to Bangalore. Interviews and repeat interviews took place with key participants including programming staff. Two trips to the offices in London led to a further seven interviews.

Table 1: Interviews: Number and Level of Interviewee

	India			**England**		**Total**
	8/98	7/99	1/00	10/98	10/99	
Managers	2	5	1	1	2	11
Programmers	2	4			4	10
						21

The data was analysed following the approach set out in Walsham and Sahay (1999). Interviews and repeat interviews were held with case participants over periods of time and the interview tapes were all transcribed verbatim by one of the researchers. After transcription, detailed notes were made concerning issues and themes identified. These themes were related to theoretical concepts of interest to us.

We attended meetings and presented two interim documents containing our views on the evolving themes and issues in the relationship which were discussed with key participants. This does not imply an "action research" methodological approach although the reports indicated our first cut analysis of relevant themes and were useful to the organisation. This helped to maintain access, provided a point of discussion with case participants and formed part of the approach to data analysis and generation of themes from the large amounts of qualitative data. Secondary material included a wealth of information on the corporate web site including press releases, corporate information and pertinent links to trade information.

4 Case Description and Analysis

Sierra is a small but highly profitable and rapidly expanding software house with offices in London (the headquarters), Brighton, New York, California and Bangalore although our scope was restricted to head office in England and India. Sierra specialises in the development of short lifecycle custom-built client server projects with customers and projects in a wide range of domain areas. In 1998, they had particular strengths in visual interface design and in 1999 moved into e-

commerce development. In 1998 Sierra employed 80 staff worldwide, company turnover revenue was approximately £8 million. Like many other specialist software houses, Sierra management were striving to overcome skills shortages and capacity problems in England. Their response was to open a subsidiary in Bangalore, India. Sierra believed that they could not pursue their strategy of corporate growth at their desired quality levels if they only depended on the development resources in the South East of England. The primary problem was the high salaries required for qualified staff.

Prior to setting up their subsidiary, Sierra had attempted to outsource small projects to Indian software companies by 'body shopping' of Indian staff to work in the head office. A key problem in these early attempts was the large variability of quality of staff and thus of software developed because of the frequent movement of developers. Another problem was that the outsourced staff were not integrated into the Sierra culture. For example, incentive schemes offered to Sierra staff were not offered to the Indian outsourced staff and it was unclear whether the loyalties of Indian staff were to Sierra as the customer or their home company as employer. The outsourced staff felt no obligation to attend meetings or engage in informal socialisation and tended to keep to their own group. The differences were uncomfortable for individuals in both organisations and Sierra management felt they had no control. Informal socialisation and meetings were key to the Sierra culture. As time went on the development staff become factional.

Sierra felt that the problems of inconsistent quality and cultural fragmentation could be addressed by opening up their own subsidiary in India where they would have greater control over operations. The early experimentation had given Sierra management confidence about the availability of the necessary skills to do software development in India. But they also realized that to do it effectively there was a need to control the operations closely. A decision to open the India centre was taken very rapidly based on a hastily constructed business plan. Within three months of the decision to start, a subsidiary was opened in Bangalore in 1998. It had a modest growth plan from ten to twenty four people in eighteen months. Early projects in Sierra varied in size and scope but all were short lifecycle projects involving mainly data warehousing and interface design. We describe the process by which the relationship between the head office and Indian subsidiary developed in two phases of initiation and growth phase (1998-1999) and maturation (1999-2000) where the relationship failed to stabilize.

4.1 Initiation and Growth Phase (1998 – 1999)

The manager of the Indian subsidiary (who we call Mitra) was of Indian parentage, born in Kenya and raised in England. He had a computer science education. The decision to deploy Mitra to Bangalore was influenced by his Indian parentage which was felt could bridge some of the knowledge gaps they would experience of the India context. Mitra was expected to provide appropriate

conditions for legitimate peripheral participation of the Indian team in the Sierra head office software development community of practice, however Mitra had never lived in India and had scant knowledge of differences in social structure. He believed software development to be a "global profession" with a strong, homogenous community of practice. Mitra and a colleague of his, who had been involved with Sierra's earlier outsourcing attempts in India, were responsible for setting up the Indian centre. Taking into account how later events unfolded, in hindsight it can be said that these earlier experiences seemed to have provided Sierra with very little local contextual knowledge or subtle understanding about 'the way things are done' in India. For example, Sierra management did not realize the need for a 'middleman' to negotiate with the Indian Customs officials to release their videoconferencing equipment, or how to get their telephone connections expedited. The delays that resulted in getting these clearances caused Sierra management in England and India shock and frustration. This negative situation was accentuated with the resignation of Mitra's colleague from England who had helped set up the subsidiary and worked on the Indian outsourced projects pre 1998. He left four months after the subsidiary operations started in India. Along with the loss of a close ally, Mitra also lost access to crucial accumulated experience of doing work in India over the last few years.

4.1.1 Encoded Knowledge

Sierra's initial plans was for the Indian team to take whole lifecycle projects including customer liaison. Unlike many outsourcing arrangements to India, Sierra was innovative and willing to take risks by trying to establish a direct interface between the Indian developers and their England-based end clients. Figure 1 shows Sierra's expectations about how the use of information and communication technologies between India and head office would make distance invisible providing conditions of full participation in the community of learning between clients , head office and India based staff. It was envisaged that system requirements could be easily encoded and transmitted to the Indian developers. A head office manager remarked that now 'geography is history,' and the Bangalore centre could be made to operate in a seamless way, appearing to their clients as if they were physically present in England. Usual procedures in the head office which involve regular face-to-face meetings with clients every ten days could now be replicated over the telephone or videoconferencing connection. The use of the leased line would mean that customers did not have to pay extra, which in turn was expected to encourage communication. Mitra was confident that the knowledge gained through their early outsourcing experience supported by the use of new information and communication technologies could effectively substitute for the need of a face-to-face presence and bridge community learning.

By the end of 1998, the Bangalore subsidiary had engaged in some full lifecycle projects but even in those instances video conferencing had not offered the expected levels of community interaction. Contributing to this were technical

reliability problems due to frequent power failures in India, and also because the videoconferencing link was to the Sierra London office. This meant that Sierra's customers, often out of London, who typically did not have access to video conferencing equipment, had to travel some distance for the conferencing session. This was practically inconvenient and impeded the effective use of videoconferencing since it required a great deal of logistical coordination of activities in terms of both time (difference) and space (multiple locations).

	Facilities
Staff Intranet	Shared database of standard procedures for quality, project management, systems development, appraisal, career development
Email	Send receive of asynchronous messages
Video conference	Synchrous video conference
Telephone conference	Synchrous group discussion
Internet Netmeeting	Demonstration, speech, whiteboard, synchrous text chat, small video window

Figure 1: Information and Communication Technologies in Use Between Sierra India and Head Office

Communication was also problematic leading to further problems in the sharing of community knowledge. The customers and head office development staff found the 'strong' Indian accent difficult to understand. The difficulty was not helped by the unreliable video and audio conferencing. The email medium was perceived as limited in providing clarifications and supporting gestures. The Indian team were sent on courses in the evening to 'correct' their accents, a process not appreciated by the Indians.

In one success story related to us, a majority of the early lifecycle work (analysis and design) was done by an Indian developer who travelled to the client site in Southwest England for a few months to facilitate the process of requirements elicitation. The developer felt that such face-to-face contact was essential to reassure the customer and relate better to the richness of the requirements. He felt that the initial interactions provided him with the shared frame of reference with the England based customer and colleagues in head office which helped to continue effective technology-mediated communication on his return to India.

Further complexities arose with regard to community knowledge sharing in the shape of contrasts in the approach to problem solving between head office and subsidiary. Mitra and some head office developers felt that the Indian team gave priority to technical issues and ignored the equally important aspect of business

requirements. As a result, solutions often did not fit well with what the customer actually needed. The head office staff felt that their colleagues in India had a tendency to overestimate their technical expertise, often reinterpreting the design requirements incorrectly, and sometimes unilaterally changing and removing things to deal with ambiguities. A head office developer said:

> He (the Sierra India developer) didn't think it was important that things had to work in a very particular way. If there was a grey area, it was his job to make it not grey anymore by implementing it in a certain way that unfortunately was not aligned with the original design.

There were further contrasts in problem solving approach related to the head office "creative" problem solving approach which formed further barriers to community learning. We discuss these in the following section in relation to encultured knowledge.

4.1.2 Encultured Knowledge

Given its orientation of a small, global, high-tech company, Sierra head office staff had strong cultural norms about creativity reflected in their perceived ability to 'self-start' and 'think outside of the box'. Head office staff were expected to, and took pride in their ability, to use the software analysis and design techniques flexibly and think independently largely without supervision. Mitra and the head office senior management we interviewed believed that such creativity was absent in the Indian developers who lacked a 'spark', and were unable to 'self start' or formulate 'self-directed learning'. In the words of a senior manager from head office:

> It is a sweeping statement, but in India they don't tend to think outside of the box, they do what they have been told to do. And what that means is that if you miss something or something doesn't quite add up, they won't see it as a problem. They'll take it as read that that is what to do. So you have to be aware of that problem. I think that they will see there is a problem, but think that it is all sorted out. We want to encourage the developers to think outside of the box and to raise questions and issues.

The head office management believed that the subsidiary should mirror the non-hierarchical, freethinking, informal and creative organisational culture of the other Sierra offices. This informality and lack of hierarchy was an important facet of the way knowledge was shared and problems solved in the head office. Physically the head office contrasted with India offices. In London, the offices were laid out in open plan for 'hot-desking' using lap top computers and mobile phones. Senior people would typically dress informally in jeans and t-shirt and share desks with junior staff. Mitra had high expectations of replicating this informal, non-hierarchical structure in India as this informality. He was extremely disappointed by the lack of success of his efforts to transpose the 'Sierra culture' and bridge the

community of practice by creating a "little bit of England in India." In contrast, the Indian staff preferred their own stable and defined workspace, and tended to dress more formally than staff in the head office. The behaviour at events and ceremonies was also quite different, and this created frustration for Mitra. He said:

> The London office is much freer. A typical example from the London office might be when someone joins us we open a bottle of champagne. People casually mill around, say hi and move-on. Here in India I am expected to make a speech. 20% drink, 80% don't. We have some soft drinks for them to get people to loosen up. In the London office everyone drinks.

In a continuing effort to bridge the community of practice and imbibe the Sierra head office culture in India, staff from both locations were taken on a trip to the seaside resort of Goa in late 1998. However, these synthetic efforts to create a relaxed atmosphere was difficult to translate into the reality of the office which was shaped by very different and deeply culturally embedded work practices. Informal socialisation attempts between London and Bangalore based staff was limited to the information and communications technology mediated settings. The time difference between India and England also meant that India based staff felt excluded from the everyday activities of the head office staff who would be on duty for around three hours of the India working day and could thus be only contacted at certain times. Also, high levels of staff attrition, a characteristic of the Indian software industry, meant that a lot of energy was expended on constantly building new relationships, and trying to repair the loss experienced in the knowledge base through the departure of staff. Communication problems were further compounded by head office based staff reporting a tendency for the Indian developers to avoid saying 'no', asking few questions and saying they understood when they might not have clearly done so.

A strategy of raising the technical skills and fostering more creativity by recruiting graduates from the more elite Indian educational institutions (like the Indian Institute of Technology) faltered because Sierra, being a small firm, could not hire a full-time human resources manager. Mitra had to handle the personnel functions together with an Indian senior technical person. As a result, they could not invest adequate time actively going out to recruit from the major Indian university campuses where they faced competition from the larger and more glamorous multinationals. Sierra was thus left recruiting graduates from some of the second and third tier engineering colleges where the primary focus is often on building technical skills (like C++ and JAVA) rather than on the broader 'business' and use context where these skills will be deployed. Also, the skills of these graduates were rather outdated, with a majority of students graduating with courses on Cobol, with little or no experience with newer languages like Java and Visual Basic needed by Sierra. These outdated skills of graduates, coupled with their perceived inability to self-start and engage in self-directed learning, led the Sierra staff to believe they were spending far too much time on building the knowledge

base of the Indian developers, which should have come as a given to the relationship.

The perceived continuing inability to transfer the Sierra head office 'relaxed' working environment had direct effects on the software development process. From the India side, there were good reasons for not engaging in these practices but it formed significant legitimacy barriers to full participation in the community of practice. In Sierra head office, it was considered legitimate for highly volatile 'creative discussion' to take place in meetings as an integral part of knowledge sharing and problem solving. In these meetings, it was considered legitimate for a junior developer to openly contradict a senior staff member. Mitra felt that in India the hierarchical position or 'tag' reflecting status, title, rank and position of a person were more important than the knowledge the individual brought into the process. For the Indians, hierarchy and position was relatively more closely related to knowledge. An older, senior manager's knowledge would be seen superior to that of a colleague or junior. The head office staff perceived hierarchy as absolutely unimportant to problem solving. Mitra told us that he too was uninterested in titles and rank and was only concerned about what 'someone brings to the table' in terms of direct contribution to solving the problem or issue at hand. This different status of knowledge related to hierarchy influenced managing 'creative meetings.' In Mitra's words:

> We are not allowed to enter into their (the Indians') comfort zone. I am the manager: they will not let me talk to them, and they will always agree with me. In meetings the staff will often stay quiet and then I will get a lengthy email maybe an hour later when the meeting is over. And I have to start the thing all over again. And I think, well why not bring all that up in the meeting? It ends up taking twice the time. They will not confront me in meetings. The spark is missing.

The head office staff, management and Mitra himself found it difficult to mould Indian behaviour (for example, related to creativity) to reflect their own community of practice, knowledge sharing and problem solving style. The reluctance of the Indian staff to follow head office practices of becoming informal and reflect "creative behaviour" led Mitra to frustration:

> It is really annoying. Sometimes I tell them something that is wrong. I want to hear 'I don't agree with you.' Here they are all interested in the 'tag.' I am more interested in what you bring to the table, not the tag you bring.

4.1.3 Embedded Knowledge

Another problematic area concerned the transfer of embedded knowledge about Sierra's management processes including best practices, routines, programmes and policies. Access to this community knowledge would be through the corporate intranet. Although this enabled the subsidiary staff access to the sources, some of it made little sense. For example, one form used for personnel appraisal process in

the head office contained the criteria of 'bollocking ability.' The term has a strong sense of meaning in the head office context, reflecting the ability to sternly discipline an employee when necessary. However, this term had little or no meaning in India. While the Sierra management found this amusing in hindsight, the use of this term in the official personnel appraisal form was strongly indicative of a lack of sensitivity to contextual differences. Another example concerned the video filming of the regular strategy making process and then later playing it back to the Indians so they would feel "part of the team" and understand the strategy and plans for the organisation. The Indian staff found difficulty in understanding the accents, and were also deeply perplexed and confused by the head office team's volatile 'creative discussion,' which often had even senior people swearing and shouting at each other.

These early experiences show how encultured knowledge formed a large part of the barriers to legitimate peripheral participation of the subsidiary group in the head office community of practice. Far from software development being a neutral "global profession", the specifics of the India context had particular impact on legitimacy of participation. Coupled with technological issues in communication, staff turnover, accents and the pragmatics of time differences, even periods of face to face working such as in Goa could not bridge the communities which increasingly were seen to diverge.

4.2 Failure to Reach Maturity and Closure (1999-2000)

In early 1999 after several (mostly unsuccessful) attempts at whole lifecycle projects being undertaken in India, it was felt that the model of work distribution should be moved to two discrete largely interdependent models. This it was hoped would reduce the extent of dependence between head office and subsidiary related to the type of application. Model one, which had been in use prior to 1999, envisaged the use of a split team between head office and subsidiary. Teams were comprised of subsidiary and head office staff varying in size, but usually had four to five head office based developers collaborating with two or three Indian staff. Subsidiary and head office staff either travelled back and forth or a head office liaison was used for requirements elicitation and ongoing customer interaction. As well as the difficulties of communication related in the growth phase, lack of physical proximity was identified as a key problem with this model. In particular there were many problems relating to encoding knowledge into messages and conversations that could be transmitted through the use of information and communication technologies.

In model two, projects were broken into self-contained modules and the subsidiary based team would assume responsibility for an entire module but the head office team would do most or all customer liaison. In this model, specifications would be sent to the India based team and the code returned for testing and aggregation into the completed application. A mirror of the application as built was maintained at

both sites. Video conferencing, email and telephone as well as such technologies such as Microsoft Net meeting were used to facilitate communication between developers, and also to a limited extent customers. File Transfer Protocol (FTP) was used to deliver completed portions of code. Most work would be done with the latest World Wide Web application building packages, JavaScript and database applications.

In model two, the strategy was one of replicating knowledge systems and minimising interaction between head office and subsidiary. Model one emphasised replication and the development of knowledge sharing bridges through travel and the use of information and communication technologies. All staff considered model two more effective since the modularisation of work done in India made it self-contained and minimized the need for subsidiary-head office interaction.

The effects of encultured knowledge in this phase are inseparable from encoded and embedded and so we combine the analysis. Events were increasingly leading Sierra to the conclusion that they needed to separate the subsidiary and head office operations abandoning the notion of full participation of the subsidiary staff in the head office community of practice. A significant issue in the failure to achieve full and legitimate participation concerned the conclusion that encoded and embedded knowledge is only meaningful within a context of encultured knowledge in the form of norms and practices which are socially embedded. By combining the categories we attempt to demonstrate this inseparability in the final phase of Sierra's operations in India.

4.2.1 Embedded and Encultured Knowledge

Although Sierra management considered the model two strategy of replication of knowledge systems more successful, it was not without problems. For instance, head office staff perceived the subsidiary staff to have difficulty in keeping up with their pace and speed of development. This concerned time deadlines, and how they were met (or not). For example, Sierra measured project management success based on the efficiency criteria of 'leakage' which reflected the ability to complete the project in the specified timeframe. Mitra and head office management were unhappy with the subsidiary developers who were seen to be 'leaking' about 25% on project deadlines, significantly higher than the head office average of less than five percent. However, when the Indian developers were confronted with this concern, they were surprised that 'leakage' was an issue since they believed they had most often been delivering projects 'in time.' On further exploring this issue, we found that the main reason for the conflict was that the subsidiary and head office staff had very different assumptions of time by which they measured leakage. The head office measured leakage based on the number of hours worked on a project and not on whether or not a deadline was met. The Indians on the other hand measured leakage based on whether they met a deadline or not. So it was quite typical for the Indians to work late in the evenings or over

the weekend to make sure they met the deadline. However, the head office management still perceived this as leakage as it was greater than the number of hours that were assigned for the project.

Further evidence of the problematic nature of replicating of knowledge embedded into routines was experienced with respect to software development methodologies. While methodologies were in place and held on the staff intranet, they were perceived by the head office side as guidelines that were not rigidly adhered to as opposed to highly prescriptive structured methods. The Indian developers seemed happy with this freedom but head office staff perceived their subsidiary colleagues as using the guidelines mechanistically rather than questioning the validity of statements or stages. This meant that Indian staff would go through steps and stages that would have been modified or left out if the job had been done in the head office taking account of encultured norms of permitted deviation from the standards.

4.2.2 Encoded and Encultured Knowledge

In both models one and two, telecommunications delay and unreliability contributed to reported difficulties in what was described to us as 'building a shared mental model' of customer requirements as the system was being built. One response under these conditions was to increase the level of formalism in design and communication processes and to have regular structured videoconference meetings. However, interviewees in both England and India complained that there came a point when it became easier to do the job in England than specify it in the detail necessary to do it in India. A head office based developer had the following opinion:

> We have project status meetings and the only communication which takes place is asking things like 'why are you slipping?' rather than discussing 'how are you getting on?', 'how are things?', a kind of conversation. When you do get through to India it is all 'what did you get to? 'what have you done this week?', 'what about next week?'. We miss out on things like 'I've just found this good bit of code which you might find useful.'

Informal 'corridor conversation' was important in sharing informal community knowledge which was not possible to formalise and transfer in conditions of separation. A developer from head office said,

> We would have formal videoconference meetings with the India developers but a lot of the details would be worked out in an informal way between people. Only a small part of what you actually do gets written down and communicated through. This (informal knowledge) was important because we were closer to the customer.

Frequently Indian developers were seen to make incorrect assumptions about design documents. In some cases a developer in England found it quicker to complete the job himself rather than attempt to encode it or ask for clarifications.

Misunderstandings were reported as being related to language differences, incorrect 'inferences' and inadequate 'base level' understanding. Another developer from head office said:

> The communication whether written or verbal, would be less rich because of language. The Indians speak good English, but you get the feeling that they are only getting say 70 – 80 percent and are missing out on any subtle points that might be inferred between people. If you describe something you often leave quite a few things unsaid that are assumed to be the case, whereas you have to be much more explicit with India. There is less of a base level understanding.

For example, head office developers specified a workflow application and sent it via email for Indian programmers to develop. When they produced the specification they assumed that the Indian recipients would recognise basic workflow concepts and technology. This 'taken for granted' assumption about knowledge of the head office developers was not shared by their colleagues in the subsidiary. It took several costly iterations before the workflow application was eventually withdrawn from India and completed in England. The head office developers were under high time pressure and unable to monitor the responses of the Indian developers. They had no time to check understanding since it was treated in a routine way as in face-to-face interaction. This was not however similarly possible through the use of information and communication technologies. If they tried, developers faced problems relating to time differentials, establishing and also maintaining the phone or videoconference connection.

By mid-1999, Sierra's business direction was being reoriented towards providing e-commerce solutions, as was becoming a norm in the industry. The e-commerce area itself was nascent and clients were rather unsure of what they wanted. This industry situation made Sierra management feel that they had the opportunity not only to implement solutions but also to define problems of clients. Sierra as a company consequently needed to pay greater attention to the client business needs, including their information strategy requirements. This implied different knowledge requirements from coding to consultancy, problem solving and presentation. There was subsequently within Sierra a complex rethinking of their future strategic thrust. There was a general consensus that for the highly complex and early lifecycle projects which e-commerce kind of applications entailed, the developers would need to be onsite with the customer. From the customer perspective, there were also serious concerns about intellectual property, especially in a new and uncertain area like e-commerce where ideas seemed to being valued more than the product itself. This was the primary concern which led Mitra to believe that Sierra customers would be reluctant to outsource their e-commerce ideas and plans to India from fear of it being stolen in offshore outsourcing locations.

To deal with the new strategic need for onsite work, and the ongoing problems of running the Bangalore office, Sierra decided to close its India operations and relocate the staff to the England or United States offices. Contributing to this decision was the fact that if the Bangalore centre continued, there would be ongoing difficulties in obtaining work permits for the Indians, and in trying to motivate staff who had worked on the first phase of new projects in England or United States to come to India. Another not explicitly expressed reason was that Mitra by this time had become personally frustrated with the Indian situation and was keen to move back to England. Thus, at a macro level, a global shift towards e-commerce type applications contributed to the need for the company to shift its operational emphasis. In Mitra's view this made the position for the Indian centre untenable as the early lifecycle work, conception, strategy and requirements for e-commerce applications required face-to-face presence and interactions.

5 Discussion and Implications

In the sections below we focus on the main issues that negatively impacted on the legitimate peripheral participation in the community of practice between Sierra staff in India and in England. Drawing on the conceptual frame described earlier, we discuss some theoretical and practical implications for offshore outsourcing. Although we continue to use the embedded and encoded images of knowledge for reasons of clarity, we reiterate that these images at the point of practice are only meaningful within a context of encultured knowledge. We attempt to demonstrate these interconnections in our discussion.

5.1 Encultured Knowledge

Upon arrival, a lack of knowledge of the Indian context such as local formal and informal recruitment networks, bribes and corruption, infrastructure, educational institutions and nature of bureaucracy caused great difficulties for Sierra management. Informal knowledge about bribes, for instance, tends not to be formalised in any official documentation, but is nevertheless an institutionalised practice in many Indian public and private organisations. Mitra did not discover this until he arrived in India and started to engage with the various systems that software development relied upon. For instance, telephones took considerably longer to be installed and repaired than in England and bribes were required to get equipment through customs. These differences and problems were never fully appreciated by the England based staff who had not experienced such problems and felt Mitra may be making excuses for insufficient effort and not imposing discipline on the process. Mitra had created very high expectations in England of what could be achieved in India chiefly that the Sierra head office way of working

could be transplanted. Failure to meet these high levels led to dissonance among staff in Sierra's head office and a reluctance from them to engage in projects with the subsidiary. This caused Mitra to try and downplay the problems he was having leading to a "closing off" of the India centre and an emphasis on presenting an image that "everything is OK".

Sierra management in England and India believed that the Sierra way of working could be more easily shared by recruiting the 'right' staff who could relate better to the Sierra community of practice. Far from the 'streets of Bangalore being paved with programmers,' as Mitra originally thought, he quickly found Sierra was a very small company in a large intense market competing for the best staff with large multinationals and recruiting and retaining was very difficult.

Sierra's practice of creative conflict made little sense to Indian programmers and formed a legitimacy barrier to participation. They tended to avoid open and direct conflict and saw little value in participating in this way. However this was seen as key to them becoming full community members as it was how the head office community engaged in its learning through practice. The behaviour of the Indians was seen by Mitra to be risk avoidant and obedient, taking action only when some superior gives clear signals to go ahead. Individuals were careful about expressing their opinions in a way that avoided disrespect for him as their manager. This tendency to value the positional role and hierarchy experienced can be related to the importance of knowledge and power. Other authors have noted a tendency to value status in India for instance Sinha (1984) argues that in Indian firms while obedience is expected from junior staff members, guidance is expected from senior leaders and their knowledge is accorded higher status. Sinha and Sinha (1990) suggest that in many Indian firms there is a traditional differentiation of hierarchical relationships with the notion of 'check with the boss' as the crux of the majority of decision-making style. This shifts the locus of control into the highest position in the organisation.

5.2 Embedded Knowledge

The web based intranet contained all Sierra's standard procedures for quality and methodological rules providing Sierra India staff access to the community knowledge. This allowed unconstrained access to shared databases conducive to enabling peripheral participation in the activities of the community. There were no shared discussion databases, implying that the material was essentially static. Some of the embedded knowledge made little sense in the Indian context.

The example of the failure of project management evaluation in the form of leakage can be examined in terms of the broader context in which the Indian developers were working and how that context differed from the Sierra head office conditions. Human geographers such as Massey (1995) point out the importance of place in the globalisation debate. Massey points out that places contain

existential significance for people living within them and form part of the tacit frames of reference that shape behaviour.

To illustrate, in Sierra head office generally there tends to be a relatively clear separation between home and work. A staff member there said that when a developer comes in to work, he or she would not respond to a personal phone call or run out to do some domestic errand during work hours. Staff were encouraged to work a regular nine to five working day. The situation was different in Sierra India operating in a developing country context where work and home lives were more tightly integrated. Some developers had aged parents living at home and it would be quite common for them to take some time off in the middle of the workday to take a relative to the hospital. Or, since telephone bills cannot be paid by mail but only by physically visiting the office, it would be common for employees to take off some hours to pay the bill or to complete a transaction in the bank or post office. Other place related issues which affected the subsidiary based staff are that India has a relatively higher number of religious holidays meaning more time off for staff contributing to delays and in monsoon it can be extremely difficult to travel meaning staff could be late or have to leave early or may simply not be able to get to work. Further delays were caused by telecommunications failures. Power cuts are common occurrences significantly affecting productivity. Differences in time zones between England and India also created issues in synchronising team activities contributing to leakage.

This was difficult for head office based staff with no exposure to life in India to understand and accept. For example, late working in the night or on weekends was quite routine for the Sierra Indian staff but head office staff would not understand why they could not work set hours as in England and United States and achieve the same results. This caused suspicion of poor management and work practices in India. This suspicion and continued failure to satisfy the leakage measure in turn caused another barrier to the legitimacy of participation in the community of practice, that of motivation. The head office development staff over time became less and less inclined to work with the Indians if it meant risking damage to their own reputation for delivering projects on time to acceptable quality.

5.3 Encoded Knowledge

Brown and Duguid (2000) point out the importance of informal interactions, shortcuts and fixes to make the form of talk of actors and their work mutually intelligible. The creating, learning, sharing, and using knowledge appear almost indivisible. To try and cope with this, in the early stages, Sierra attempted complex development offshore based on a strategy of standardization of knowledge systems. This strategy was quickly found wanting as software development work needed high levels of interaction with customers whose requirements were difficult or impossible to encode without face-to-face presence. Other writers such as Maznevski and Chudoba (2000) have emphasized the

importance of initial face-to-face meetings in establishing a 'temporal heart beat' based on which subsequent meetings can proceed even in conditions of temporal and spatial separation. When moving to the split team model, physical separation still acted as a barrier to knowledge sharing between the Indian and England teams. Learning was situated in that the head office development staff were closer to the customer and their informal interactions, checks and confirmations were troublesome to formalise in specifications for India.

Zuboff (1988 cited in Blackler 1995) points out that knowledge encoded by decontextualized abstract symbols is inevitably highly selective in the representations it can convey. It is thus open to interpretation and can convey varying meaning to different groups. At Sierra, poor interpretation of designs occurred due to language and communication problems as well as differences in levels of shared technical and organisational knowledge. These differences were difficult for head office staff to detect. This led to some disastrously incorrect designs. Then there was the problem of telecommunications speech delay meaning gaps in the 'conversation' and accents. Furthermore, the problems were accentuated by a reported tendency on the Indian side to say that they understood when they may have not. Discussions using the information and communications technologies in place that lacked the informal tips, stories, gossip about the customer needs and chat, which was of great importance in the evolving development. Other accounts of successful communities of practice such as Orr (1990) describe how the community members, in this case Xerox photocopy technicians, during their breakfast meetings provided such informal but vital knowledge sharing in within their community of practice.

At this point it is necessary that we discuss in more depth how in communities of practice encultured knowledge provides background understanding and a framework in which encoded and embedded knowledge can "come to life" in the individual who draws on them. Encultured knowledge is related to history, habits, local context, role related-expectations and the prior disposition of individuals and groups (Tsoukas 1996). Following Polanyi (1962, 1966), Tsoukas points out that all articulated knowledge is based on an unarticulated background of what is being taken for granted that is tacitly integrated by individuals. These particulars reside in the social practices, forms of life into which one happens to participate. For Tsoukas, it is when one lacks a common background that misunderstandings arise in which case one is forced to articulate the background and explain it to others and oneself. The unarticulated background is apparent to the individual through having been socialised into it by others. This issue became apparent when programmers were making wrongful assumptions; when the England side found difficulty in ascertaining the Indian programmers base level understanding and in the issues of status, behaviour in meetings, leakage and communications norms which had impact on the legitimacy of participation.

This does not imply that individuals are all 'cultural dopes' or that all Indians are the same thereby caged by structural norms. Although the individual retains

agency, structural norms exist as tacit memory traces that are drawn upon in articulating action (Baumard 1999, Giddens 1984). In another stark example of this nature discussed in Nicholson and Sahay (2001), Indian programmers working on United Kingdom social security and housing benefit systems had no conception of unemployment benefit or social housing. These were an unknown concept in the Indian system, but formed part of the taken for granted background knowledge in the United Kingdom.

5.4 Implications for Practice

A knowledge perspective provides insight into the changing knowledge requirements for offshore software development relationships to be initiated, and subsequently grow and evolve. Analysing the software development process in this way shows the importance of achieving congruence in initiation stages. It demonstrates the need for an appreciation of tacit forms of knowledge particularly in the realm of encultured practices which act as an interpretive framework for dialogue and for knowledge embedded into processes. Walsham (2001) suggests researchers and practitioners should "take culture seriously" and discusses how cross cultural working involves the interaction of people whose tacit knowledge has been developed in different ways, and who have learnt different approaches to sense-reading and sense-giving (p. 606).As a result of continuing problems in this area accentuated by lack of face-to-face dialogue and misinterpretation of designs, Sierra abandoned the idea of trying to develop a workable community of practice between India and head office staff in England.

Does this mean that practitioners should abandon hope of knowledge sharing across any such circumstances? Obviously not, and we do not dispute that certain aspects of software development could be regarded as "global". A global software community of practice exists at a high level in that it shares a common technical language, purpose and a way of acting. However, what the case does show is that account must be taken of the particularities of the circumstances of practice. Sierra's head office form of creativity made little sense to the Indians and prevented the legitimacy of full participation. Their view was that maturity in the relationship would only have been achieved by minimising the need for interaction between England and India by providing whole self- contained projects. Sierra as a small company could not compete with large multinationals for the staff they wanted. Their inability to recruit and retain offshore staff with requisite skills and qualities clearly affected community learning. Information technology was limited in its usefulness in supporting community learning.

The challenge for practitioners for development of effective learning communities therefore is to realize the limits of information and communication technologies; develop sensitivity to the importance of local knowledge and heterogeneity within broader standardized templates. So what are the practical implications for the

design of systems to support such a process? We consider three strategies: the use of straddlers, organisation form and the role of education and training.

A straddler (would be a person or persons who could relate the interests of the respective communities to each other. Having sophisticated individuals who can bridge the cultures between groups, facilitate informal discussion and act as front line liaison may have overcome some of the difficulties faced by Sierra and facilitated the practice based learning experiences. Sierra may also have been better advised in their initial business planning to have considered alternative organisational relationships before hastily embarking on a subsidiary route. Entering into a joint venture arrangement with an established Indian company would have enabled them to set up operations with experienced people well versed in local and global practices and the limitations of offshore software development. This route, although complicated with its own set of problems and difficulties, would have insulated them from some of the knowledge sharing problems experienced.

Cultural differences such as issues of hierarchy had direct consequences for the development process and stalled the evolution of the offshore relationship. Many aspects of the Sierra organisational culture had little if any connection with the background knowledge of the Indian programmers. Mitra's expectation that Indians would mirror the head office culture was unrealistic and a source of constant frustration. Achieving any position towards mutual understanding would require an appreciation of background and history of social practices and forms of life in which India and England based developers participate. Developing an appreciation of another culture requires extensive socialisation, a genuine interest to learn, and a strong investment of time and effort to this end. For the head office side this would have meant an interest in Indian society, history, traditions, and a deeper attempt to understand Bangalore and India as a place rather than a space for software development. Sierra would have needed to adopt a process of bi-directional knowledge sharing rather than uni-directional in order to develop a stronger encultured understanding. The offshore side would also need to attempt similar efforts to relate to the head office context, society and the customer business.

5.5 Implications for Theory

We have found the images of knowledge to be useful for identifying some of the barriers which may exist to the legitimacy of community learning across international contexts. Activities, tasks, functions and understandings do not exist in isolation; they are part of a broader system of relations in which they have meaning (Lave and Wenger 1991 p53). With this important point in mind, use of the images to conceptualise and unpack the concept of communities of practice we believe can be of use to other researchers and practitioners in particular those studying international aspects of community learning. A key contribution to the

theory is the importance of encultured knowledge and the means by which this can affect the legitimacy of participation in the community. We call for more interpretive work in this area. Empathy and understanding of such issues of working in India or another country became fundamental to developing a place-based sensitivity to issues and is key to achieving full mutual participation in a community of practice. The Indians' interpretation of embedded knowledge and its place specificity created an interpretive barrier to the functioning of the community of practice. Local differences affected the legitimacy of community learning and so relevant local place related religious, familial, historical issues are a prerequisite for facilitating full participation in community learning. The importance of expectations, motivation and the impact of dissonance in learning in a community of practice is also highlighted. High expectations led directly to dissonance in the head office and the "closing off" in India. Poor perceived performance of the subsidiary led to lack of motivation to collaborate having effects on the legitimacy of full participation in the community of practice.

Present day information and communication technology is limited for supporting community of practice that are distributed across time and space. The limits to encoded knowledge to support instant access to the community meant that the situated learning, observing improvisations, chatting and storytelling was impossible. Finally, our analysis shows that communities of practice once set up are not static and the importance of time in relation to context in studying them. At Sierra, various internal issues (e.g. communication problems due to accents) and external contextual events (e.g.. global and corporate shift to e-commerce) impacted and were impacted by the knowledge sharing process over time. Communication problems led to a change in the nature of work conducted in the Bangalore centre that in turn reduced the need for extensive communication. Corporate shifts to e-commerce caused a move to unstructured early lifecycle work that Sierra management realised could only be done in the head office.

Acknowledgements: We would like to thank Professor Geoff Walsham and Mark Thompson, Judge Institute, Cambridge University, England for comments on an earlier draft.

References

Alavi, M. and Leidner, D. (2001). Knowledge management and knowledge management systems: conceptual foundations and research issues. *MIS Quarterly,* 25, 1, pp.107-133.

Apte, U. (1990). Global outsourcing of information systems and processing services,

The Information Society, 7, pp. 287 - 303

Baumard, P. (1999)**.** *Tacit Knowledge in Organizations*, London: Corwin Press.

Blackler, F. (1995). Knowledge, knowledge work and organizations: an overview and

Interpretation. *Organization Studies*. 16, 6, pp. 1047 – 75.

Boland R and Tenkasi R (1995) Perspective Making and Perspective Taking in Communities of Knowing *Organization Science* 6 (4) pp. 350-372.

Brown, J. S. and Duguid, P. (1991). Organisational learning and communities of practice: Toward a unified view of working learning and innovation. *Organization Science* pp. 40 – 57.

Brown, J. S. (1998) Internet technology in support of the concept of 'communities of practice': the case of Xerox. *Accounting, Management and Information Technologies* 8 (4) pp. 227-236.

Brown, J. S and Duguid, P. (2000). *The Social Life of Information,* Cambridge, MA**:** Harvard Business School Press.

Carmel, E. (1999). *Global Software Teams,* New Jersey: Prentice Hall.

Ein Dor, P. and Segev, E. (1992). The effect of national culture on IS: implications for international information systems. *Journal Of Global Information Management*, 1,1, pp. 33 - 44.

Giddens, A. (1984). *The Constitution Of Society*, Cambridge: Polity.

Giddens, A. (1990). *Consequences of Modernity,* Cambridge: Polity.

Hayes, N. (2001) Boundless and bounded interactions in the knowledge work process: the role of groupware technologies *Information and Organization* 11 pp 79-101.

Hayes, N. and Walsham, G. (2001) Participation in groupware mediated communities of practice: a socio political analysis of knowledge working *Information and Organization* 11 pp 263-288.

Lam, A. (1997). Embedded firms, embedded knowledge: problems of collaboration and knowledge transfer in global cooperative ventures. *Organization Studies* 18, 6,

pp. 973-96.

Lave, J. and Wenger, E. (1991). *Situated Learning: Legitimate Peripheral Participation*, New York: Cambridge University Press.

Massey, D. (1995). *Space, Place and Gender,* Cambridge: Polity.

Maznevski, M. and Chudoba, K. (2000). Bridging space over time: global virtual team dynamics and effectiveness, *Organization Science*, 11, 5, pp. 473 - 92.

McDermott, R. (1999) Why information technology inspired but cannot deliver knowledge management *California Management Review* 41 (4) pp 103-117.

Morgan, G. (1986) *Images of Organization*, London: Sage.

Nicholson, B. (1999). *The Process of Software Development Across Time and Space: The Case of Outsourcing to India*, Unpublished PhD thesis, Salford University, Manchester, UK.

Nicholson, B. and Sahay, S. (2001). The political and cultural implications of the

globalisation of software development: case experience from Britain and India. *Information and Organisation*, 11, 1, 25-44.

Nonaka, I. and Takeuchi, H. (1994) *The Knowledge Creating Company: How Japanese Companies Create The Dynamics Of Innovation*. Oxford: Oxford University Press.

Orr, J. (1990). Sharing knowledge, celebrating identity: community memory in a service culture. In *Collective remembering,* ed. Middleton, D. and Edwards, D. pp. 169- 89. London: Sage.

Polanyi, M. (1962). *Personal Knowledge: Towards a Post Critical Philosophy,* New

York: Harper Torchbooks.

Polanyi, M. (1966). *The Tacit Dimension,* New York: Anchor Day Books.

Robey D, Boudreau, M, Rose, G (2000) Information technology and organizational learning: a review and assessment of research *Accounting Management and Information Technologies* (10) p 125-155.

Sabherwal, R. (1999). The role of trust in outsourced IS development projects.

Communications of the ACM, 42, 2, pp. 80-86.

Sahay, S. Nicholson, B. Krishna S (2003) *Global Software Work: Micro-Studies Across Borders* Cambridge University Press.

Saxenian, A. (2001). The Silicon Valley connection: Transnational networks and

regional development in India, Taiwan and China, Final Report for the project *The Context of Innovation of the Information Technology Industry*, of University of Pennsylvania Institute for the Advanced Study of India, New Delhi, August 2001.

Sinha, D. and Sinha, M. (1990). Dissonance in work culture in India. In *The Concept of Work in Indian Society*, ed. Moddie, A. D., pp.206-19. New Delhi: Manohar Publications.

Sinha, J. B. P. (1984). A model of effective leadership styles. *India International Studies of Man and Organizations*,14, pp. 86-98.

Smircich, L. (1983). Concepts of culture and organizational analysis. *Administrative*

Science Quarterly, 28, 3, pp. 339-58.

Telioglu, H. and Wagner, I. (1999). Software cultures. *Communications of the ACM,* 42, 12, pp. 71-77.

Tsoukas, H. (1996). The firm as a distributed knowledge system: a constructionist

approach. *Strategic Management Journal,* 17, pp. 11-25.

Walsham, G. (1995). Interpretive case studies in it research: Nature and method.

European Journal of Information Systems, 4, 2, pp. 74 - 81.

Walsham, G. and Sahay, S. (1999). GIS technology for district administration in India:

Some problems and opportunities. *MIS Quarterly*, *Special Issue on Intensive Research*, 23, 1, pp. 39 - 66.

Walsham, G. (2001) Knowledge management: the benefits and limitations of computer systems. *European Management Journal* 19 (6) pp 599-608.

Zuboff, S. (1988). *In the Age of the Smart Machine: The Future of Work and Power,* New York: Basic Books.

Offshore Outsourcing: Challenge to the Information Systems Discipline

Rudy Hirschheim

Ourso College of Business, Louisana State University

1 The Growth of Offshoring

Outsourcing as a means of meeting organizational information technology needs is now a commonly accepted and growing practice, and one that is continually evolving. From its beginnings as a cost-reduction tool, many now feel outsourcing has evolved into a vital component of a firm's overall business strategy. It has grown from the domain of IT embodying decisions such as where and how to source IT to a much wider set of business functions: logistics, payroll, human resources, legal, and so forth. To be sure, the generic notion of 'outsourcing' – making arrangements with an external entity for the provision of goods or services to supplement or replace internal efforts – has been around for centuries. Yet, IT outsourcing is fundamentally different: IT is pervasive throughout the organization. It is not a homogenous function, but rather is interrelated with virtually all organizational activities. And it is strategic. Until the late 1980s, strategic functions were thought to be incapable of being outsourced; however, Kodak changed that belief. Now whether a function is strategic or not makes little difference regarding outsourcing. Virtually all functions are candidates for outsourcing. Clearly, outsourcing is no passing fad (Dibbern *et al*. 2004).

The past several years have seen a remarkable growth in not only IT outsourcing but where IT is outsourced to vendors who are based in different countries from the client. This is the so-called 'offshore outsourcing' ('offshoring' for short) and the IS field could find itself in the unenviable position of potentially presiding over its ultimate demise; or if not its demise, a dramatically different field where the center of IS work (and possibly also teaching and research) is done in places like India and China rather than in the West.

2 The Immediate Consequences of Offshoring

What are the consequences of offshoring? While some contend that the U.S. economy as a whole would benefit from offshore outsourcing this is of small

consolation to the employee who has to train his replacement before being terminated. Such tales fuel the opposition from employees and labor unions and bring negative publicity. Opponents of offshore outsourcing focus on the potentially deleterious consequences of the displacement of domestic jobs by offshore workers on the economic structure of the country. This is a theme taken up by Friedman (2005) who calls offshoring 'the quiet crisis' and warns of the impending doom it will cause in the West. Essentially, the dot-com bust and the resulting loss of jobs intensified the concerns about loss of domestic jobs to foreigners and fuelled public sentiment against outsourcing.

McLaughlin (2003), for example, suggests that 27,000 U.S. computer and mathematical jobs have moved offshore in 2000 predicting the number to be 180,000 by 2005 growing to 470,000 by 2015. Pretzlik (2003) predicts that at least 2 million jobs are at risk of being offshored as organizations plan to transfer their operations offshore. A Hewitt study estimates that by 2015, offshoring by US companies would represent a loss of $135 billion in wages and 3.3 million professional jobs (Business Standard, 2005). Geary (2004) forecasts that all non core jobs that can be reduced to a contract will be offshored in the coming years. He further notes that at least 11% of all U.S. jobs (approximately 14 million jobs) are at risk of being offshored, with the key areas being: telephone call centers, computer operator, data entry, programming, business and financial support, paralegal and legal support, diagnostic support services, accounting and bookkeeping. Others worry about the loss of technical IT knowledge and IT talent to a foreign country (Koch 2003; Morello 2003). Another thorny issue is the decline in wages that accompanies offshoring. Robinson and Kalakota (2004) cite the example of programmers' salaries in the U.S., which have fallen from a range of $70,000-$100,000 per year to $40,000-$50,000. Such numbers have intensified the negative sentiment towards offshore outsourcing.[1]

Driven by negative public sentiment, new governmental regulations that impose stricter policies against offshore outsourcing have been enacted. For example, Connecticut introduced the U.S. Workers Protection Act that prohibits the use of

[1] Interestingly enough, for each 'negative' prediction, there is a concomitant 'positive' prediction. McLaren (2000) and Mann (2003) for example, forecast a strong positive impact on the US economy due to global outsourcing. The basis of their predictions lies in economic models of technological advances on past national and international economies, noting that efficient economic markets provide benefits to everyone in the long run. For example, as the wages and incomes of workers in India and China increase, they will have enough disposable income to buy new products and services which would have a positive affect on the entire global economy. And the savings that accrue through offshoring get translated into lower costs for US corporations and hence more profits for the shareholders and lower costs for customers. But are such predictions accurate? What are they based on? The simple truth is: these forecasts are based on speculation and little empirical data or theory. It is little wonder that the public is confused and frightened by such prognostications.

federal funds for offshore work (Thibodeau 2004) and Washington State has regulations that bar state agencies from using offshore vendors (King 2004a). Some state agencies have had to bring back services after offshoring due to public opposition. New Jersey's Department of Human Services had hired eFunds of Scottsdale, Arizona to provide electronic processing of welfare benefits. In 2002, eFunds moved the call center from Green Bay, Wisconsin to Mumbai, India. The political outcry that followed forced eFunds to move the call center back to New Jersey, a move that is costing an additional $885,600 per year (Lyne, 2003). The state of Indiana cancelled a $15 million IT contract with India's Tata Consultancy Services, a contract that TCS had won with a bid that was $8.1 million lower than the most competitive domestic bid (Press Trust of India, 2003) . While it is not clear how such protectionist moves will serve the U.S. economy in the long-term the cries for something to be done are loud and clear, if perhaps short-sighted.

The decline in employment and compensation in the IT industry have had a backlash in the educational system as well. Konrad (2005) notes that recent computer science graduates aren't even looking for jobs in IT anymore since they believe that there are no IT jobs left in the US. Worse, citing a recent Gartner Group report, she suggest that 15% of the IT workers will drop out of the profession by 2010, and that the world-wide demand for systems developers will shrink by 30% during the same period. This has led to a dramatic decline in enrollment in computer science and information systems programs. In a survey of PhD-granting computer science departments in the United States, the Computer Research Association found that the number of new undergraduate majors dropped 18 percent in 2003 (Frauenheim and Yamamoto, 2004). Datz (2004) reported the drop in undergraduate computer science and computer engineering programs to be 23% from 2003 to 2003. More worrying was the recent report (Vegso, 2005) on Computer Science numbers which noted that the percentage of incoming undergraduate students in US universities who indicated they would major in CS declined by over 60% between 2000 and 2004, and is now approximately 70% lower than it was in its peak during the 1982-83 time period. Similar declines have also been anecdotally noted in the IS field.[2]

The combination of declining enrollments in IT along with the fact that many of those who majored in Computer Science and IS were international students already and who often return to their home country after graduation, is leading to a

[2] Certainly, part of the decline in enrollment in these programs can be ascribed to media "sound bites", which seem to suggest that there will be no jobs left in the areas of computer science and information systems (Lopez, 2004). However, data from the Bureau of Labor Statistics indicates that the demand for IT workers will exceed the supply (Pollack, 2004), requiring recruitment of workers from other countries – thus creating a potential and ironic self-fulfilling prophecy. To add insult to injury is the fact that good overseas students (from countries like India and China which in the past came to the US to study and then stayed on) are increasingly staying away because of the post 9/11 immigration overreaction.

diminution of IT knowledge in the US. Couple this depletion of IT talent at home with the loss of IT knowledge to a foreign country has left a number of commentators to suggest that the US is dangerously vulnerable when it comes to IT knowledge (Koch, 2003; Morello, 2003).

3 The Fundamental Nature of Offshoring

But these perceived deleterious consequences miss a more subtle (some might say 'sinister') change that is occurring which is based on the key role that IT plays in the commoditization of work. Indeed, the new terms "IT-enabled services" (Kern *et al*. 2002) and "utility computing" (Westerman and Ross 2003) are suggestive of an important side effect of technology that has been one of the key characteristics of 'modernization' since the beginning of the first industrial revolution - the expropriation of individual skills into explicit methods and techniques that are then coded in specific turn-key technology "solutions". From a systems perspective, the same phenomenon has been labeled "black-boxing". The operators of these turn-key solutions no longer have to master the detailed craftsmanship to perform the work that the turn-key solution automates, because the original complexity has been hidden behind the levers and buttons of an interface. As a result, the operator of a programmable lathe needs fewer skills than the old blacksmith, or the factory-trained laborer in a semi-automated shoe factory has a fraction of the skills of the old shoemaker. Modern IT has facilitated extending this market logic of commoditization to white collar work - clerical work initially (e.g., payroll computations) but growing now to encompass knowledge work such as IS (in particular) but also business processes in general (business process outsourcing). Hence, IT has served both as a medium and catalyst for turning subjective skills and know-how into a market commodity that can be contracted out to the lowest bidder. IT has both facilitated and made possible the taking of knowledge work (e.g. business processes), dividing it up into individuals modules, and allowing these modules to be performed anywhere in the world. Commoditization through IT has allowed knowledge work to be disaggregated, distributed, performed, sent back and aggregated so that it does not matter where the knowledge work comes from or where it is performed. As long as the knowledge skills and the means for electronic distribution and communication are available, it simply does not matter where the work gets done. In this sense offshoring really refers to true globalization.

Some might see an irony in this. The commoditization process has now come full circle, affecting the IT profession itself: IT workers are now experiencing what technology has done to other professions. Whilst commoditization is not wholly dependent on IT (the causes of commoditization are deeply rooted in the progress ideal of the enlightenment and liberalist ethics of market economics), IT does

fundamentally extend its reach and speed with which it spreads throughout the economy. It also is virtually unstoppable. This leads us to wonder what the implications of offshoring on the future of the IS Discipline might be, as it is clear that educators and policy-makers need to address these impacts if they wish the discipline to continue to thrive.

4 Implications for the Future of the Discipline

Although there is disagreement about how easy such offshoring challenges will be to overcome, few seem to have considered the implications on the discipline of IS; especially given that the majority of the IS discipline has traditionally been housed in the West. This seems somewhat surprising as there would appear to be the potential for dramatic consequences for the discipline. For example, is there the possibility that external stakeholders and influences could undermine the economic base on which IS research and teaching depends? What would these external influences look like and how would they affect the discipline? Would the locus of the discipline shift from the West to the East? And if so, would the research directions change? In Hirschheim and Klein (2003), there was some modest discussion of these points but it was left as an open question as to how the inexorable drive toward the outsourcing and offshoring of IT might erode the very *raison d'etre* of the discipline, at least in the Western World, and if so, how the discipline might evolve in light of the changes that offshore outsourcing might force upon the IS academic community. So far, little discussion has ensued (but see Davis et al, 2004; Weber, 2004). What is particularly worrying is the lack of regard being paid to the rather alarming drop in student numbers in both IS and Computer Science noted earlier in the paper.

Perhaps the reason why most of the academic IS field seems unconcerned by offshoring has to do with fact that it is driven by the external IS (practitioner) community rather than the internal (academic) community and not fueled by intellectual insights, but long-term economic trends. If so, this would be consistent with traditional academic IS in that the academic IS field has historically paid too little attention to the external community and its needs. We feel that the field does so at its own peril because the field's resources and future depend largely on these external communities. If we have no students and no demand for our product, what kind of discipline would we have?[3] Thus, there is a need to consider the implications of offshoring.

[3] The same concern has been voiced in the 'rigor vs. relevance' debate that has received considerable attention (*cf*. Benbasat and Zmud, 1999; *CAIS*, 2001; King and Lyytinen, 2006)

So what does this mean for the discipline of IS? Even if the move toward the offshoring of IT work turns out to be inexorable, this does not necessarily spell the demise of the discipline (in the West), as long as the discipline evolves to take into account this new reality. The simple fact is: the old world order where the key products and processes of the discipline (innovation, knowledge creation, knowledge dissemination, skill set development, etc.) are the sole province of the West, is likely over. Just as the British Empire gradually eroded over time to become a notation (albeit an important one) in history, its power and influence over world affairs is but a fraction of what it once was. The same may well be true of Western IS programs as we currently know them. As IT jobs move more and more to the East, countries like India and China are likely to become the dominant IS force in the future, both in teaching and presumably research. And if teaching has to take place where jobs can be found and research has historically been 'funded' through the teaching of students, then India and China could lead the way in the future. This will no doubt create new sources of wealth for places like India, China, Vietnam and the Philippines, and presumably to their overall economic, political and social advancement. But what about the West?

We believe that if the IS field recognizes the fact that most coding, support, infrastructure and operations jobs will likely be offshored to the East[4], there is still a key area where IS can prosper in the West, *viz*. in the IT enablement of organization/business processes. These are the so-called 'customer-facing' jobs. This appears to be a fruitful avenue for IS academics in the West to focus on as it might help differentiate Western IS from that which develops in the East, at least in the short term. In the longer term, there is no reason to believe this function might not find its way to the East too.[5] But at least in the short term, it appears that most organizations in the West will likely rely on local talent to undertake such IT process enablement.

Of course this begs the question as to whether the notion of business process enablement through the application of IT is an overlooked IS core competence or whether other functional units couldn't also perform this function. We believe that it is – or should be – an IS core competence. Consider that in the past, information

4 And even if these jobs are outsourced/offshored, would it not still be necessary for students to have some knowledge of these areas so that they may interface with the vendors and manage these activities? How can one manage something that one does not know? Indeed, students need more technology knowledge, not less. This also suggests to us (as it has for many commentators) that the key will be to instill an attitude and desire for life-long learning and to ensure the discipline possesses the capability to support this. Technology and the need to teach technology skills are not going away. We simply cannot conceive of a society in which technology skills are not valued or perceived as unnecessary.

5 Indeed, some suggest there really is little if any difference in what IS students in the East and West study, and thus ultimately what functions and tasks they can and can not perform.

systems development involved the studying of existing business processes, identifying new opportunities and/or restructuring the processes, and then building systems that would support the rationalized new business processes/model. In the past, the restructuring often turned out to be minor because of political and other reasons, which anchored the new system firmly to the old way of doing things. Many of the so-called 'business process reengineering' exercises suffered this fate. The reengineering efforts simply did not accomplished the hoped for changes. However, this has begun changing; and in fairly dramatic fashion. One need only look at enterprise resource planning systems (ERP) and related approaches which have reversed the old systems development model. New software modules embracing industry best practices are implemented allowing organizations to change their business processes. Usually this requires both organizational process and structure redefinitions to be prepared and then adopted for this alignment with best practices to take place. IS seems particularly well suited to perform this function since IS *has* studied information systems development (and its associated methods and tools) for decades and the new business process redesign is a logical extension of the earlier emphasis on methods of information requirements analysis, information systems design, and implementation. So we believe Western IS academics should focus their attention on this key core competence.

To be sure, IS as a discipline will have to evolve. For the West, the focus could be primarily on process redesign and the IT enablement of these processes as well as the implementation of the system when it is complete. The actual coding and maintenance of the modules will be done in the East. So what we see is more a growing division of labor between the West and East, at least in the short term[6]. A yet to be determined issue is where will IS research be located? As much of IS training moves to the East, presumably the growth of IS faculty in these countries will spur new research. This in turn is likely to reduce the funding base for IS research in the West to match its reduced faculty ranks. Not only have the organizations that have gone to offshore locations established their own research and development centers there (which often operate at higher quality assurance ratings (e.g. CMM) than their centers in the home country, *cf.* Mohnot 2003), they have also sponsored research at leading educational institutions in these countries. For example, in India, Intel Corp. is funding research at the Indian Institute of Technology in Chennai to discover appropriate applications and usage models for wireless Internet in rural environments. IBM's India Research Laboratory has set up a technology center at the Indian Institute of Technology – Delhi which focuses on advanced IT applications in the areas of bio-informatics, grid computing, and

6 But as we already suggested, there is no reason to believe that this can be sustained in the longer term as offshore companies move up the value chain and actually execute many/most of the activities on the value chain themselves. See also the discussion in Gopal et al, (2002).

knowledge management. Similarly, Indian Institute of Technology – Kharagpur is doing research work in collaboration with multinationals like Motorola, HP, Oracle and GE Capital. As research moves from the West to the East, it might change its character and we wonder how such research will fit with the research that remains in the West? And if the differences between the research in the West and the East surpass the differences that exist between North American and European IS research, then this is likely to fuel a new identity and legitimation debate. At this time it is hard to know if and to what extent the IS issues studied in the East will be different from those considered "core" in the West, although there is some reason to believe it might not be as different as some think. For example, since a large number of IS researchers/academics in India have received their PhDs from the US or Europe, the current wave of research that is going on in India appears to be in line with what is going on in the West as can be seen by the numerous international collaborations (e.g. Krishna, Sahay, Nicholson, et al). (Of course the Indian Diaspora no doubt has much to do with this fact.) Another reason for the similarity of teaching and research interests could be the establishment of Association for Information Systems (AIS) divisions in Asia. We have noticed an increased participation by researchers from Indian institutions, such as the IITs and IIMs at AMCIS, ICIS, ECIS and IFIP TC8 events.

Last, but not least, is the issue of adjusting courses and degrees to the new realities. It is of critical importance for U.S. universities to step up to the challenge and prepare their IS graduates for working in the new IT-enabled global economy both onshore and offshore (Ferguson, 2004; Schuldt and Davis, 2005). Some IS academics have stepped up to the challenge and offered recommendations. King (2004b) for instance suggests that the IS curriculum be revamped so as to focus on three core areas: software interfacing, contract management and strategic technology assessment. Davis et al (2004) contend that the IS curriculum should be revised to include offshoring management as a key component, and that new specializations should be added to the curriculum, *viz*., offshore infrastructure management, offshore system development management, offshore operations management and offshore outsourcing management. Revising IS programs so as to be more attuned to the changing global nature of the discipline and the new realities of offshoring would make its students more relevant and employable, and might help reverse the trend of declining enrollments in the US. Additionally, by preparing our students for the offshoring world, we would in effect be 'taking the lead'. This might be something the field could build upon and use in teaching students from other disciplines about the nature of offshoring (which presumably will affect them in whatever business functional area they are majoring in). In essence, just as IT outsourcing was the precursor to business process outsourcing, IT offshoring is the precursor to business process offshoring. The field should capitalize on its early adopter status and apply its learning in other disciplines.

In addition, the AIS has taken a leadership role in helping to spearhead a change in IS education. Recognizing the need to promote courses that reflect the new social

and technical trends in IS globally, the AIS sponsored a competition to recognize courses in the area of software development innovations and offshore outsourcing (Markus, 2005). Such efforts which recognize and encourage the creation of courses and changes in curricula need to be applauded and extended. Another role that AIS could play might be helping to establish virtual research centers allowing researchers from countries like India and China to enter into collaborative ventures with their counterparts in the West. As an example, we are in the process of setting up a collaborative virtual outsourcing/offshoring research center with some Indian and Australian colleagues. More of this sort of collaborative efforts could prove highly useful for the discipline.

5 Conclusions

In Friedman's (2005) insightful book "The World is Flat" he notes the quiet yet dramatic changes that are occurring globally which portend the gradual – and maybe not so gradual – erosion of US dominance. In particular, he talks about the *economic* and *educational* hole that the US has dug itself into. From an *educational* standpoint, most US students simply don't get it anymore. The purpose of education isn't to please one's parents or simply get a piece of paper (i.e. diploma), but to prepare oneself for the uncertain future ahead. Perhaps the problem stems from the gradual immersion of the European immigrants into the American culture. First generation immigrants did not want to have their children go through the hardships they endured and saw education as the way out of the morass. They valued education almost above all else and their children reaped the rewards. Children of immigrants – to a large extent - went to college, graduated, and wound up with good jobs. The next generation of children however does not appear to have been imbued with the same value system. They saw 'going to college' as their parents dream, not theirs. Higher education took on a new role – as a means to satisfy or appease their parents (who typically paid for their children's education). The focus of these students was on 'getting the piece of paper'; but in the process, something has been lost. That hunger or drive to seize an opportunity for knowledge and creative thought seems to have vanished[7]. More middle class American students than ever attend college and end up with degrees, but many have failed to grasp the essence of what higher education can offer: i.e. the ability to critically think and adapt to change. This is America's real failing. The purpose of higher education has been corrupted, and for the most part, lost. Today's students may *think* they value education but do they? Contrast this with countries like India, China, Vietnam, Singapore, Taiwan and Korea, where education is considered *the* key to the future. Students in these countries work

[7] Steve Jobs in his Stanford 2005 commencement speech made reference to this exact point as it related to his education experience (Jobs 2005).

hard because they know education is the only way out of their economic condition. The same cannot be said about US students. The US is facing an educational fissure the likes of which it has never seen.

From an *economic* standpoint, one need only look at the 2004 US Bureau Labor study which reported that US job growth over the next 10 years will occur in the service sector, but that of the top 20 growth occupations, 15 are either in the 'low' income group (annual salary up to $27,380) or 'very low' (average annual salary of $19,600); not particularly comforting for those graduating students entering the job market. The simple fact is that we have moved from a US-centric notion of globalization which is "take American ideas and values and place them in foreign countries' to true globalization where countries (because of their newly found or newly emerging economic freedom) decide for themselves how they fit into the coming new world order. No longer are they bound to the US for their survival. Indeed, this change may not be as subtle as Friedman and other commentators suggest, but rather the equivalent of standing in front of speeding train. It is as relentless as it is unstoppable. The real question is 'how will the US, and the West in general, fit within the new world order?" Will it be like the former British Empire where the British simply refused to believe that the Empire was dead, and spoke instead of 'the Commonwealth' as a vestige of former British glory? Indeed, the Commonwealth is a reminder of how the world changes. The same is now happening with the US. Its economic power eroded, many in the US cry 'foul' as though the world has somehow done them wrong. The simple truth is: the new world order will be very different from what it was the last 50 years. History has shown that empires always erode, usually because of decay, complacency, and a failure to recognize change. The victors become vanquished, believing that somehow history has dealt them a raw deal while concomitantly believing that 'some day it will all be made right again'. The US may indeed be suffering this erosion. It simply cannot see what is happening and/or is powerless (or at least does not have the will to change) to adapt. Instead of complaining about how US jobs are disappearing and going offshore, and how the government should legislate against offshoring, the US should reflect upon what it has to offer; what it needs to do to be competitive in the future. Lamenting about the past or enacting legislation to 'protect' the past, serves no purpose other than to possibly soothe the egos of some. But fundamentally, it will do nothing to alter the inexorable shift toward the East.

A recent article appearing in *The Guardian* brought out an interesting fact: India never rebelled against the British when in 1699 the British enacted legislation which forbade the weaving of cotton in India even though the raw material - cotton - was grown in India. The British didn't want this skill to be lost nor allow India to have the economic gain from weaving so used their power to maintain the then world order of the 'haves' (British) and the 'have-nots' (Indians). It has taken 300 years but maybe now the Indians are finally getting what was rightly theirs in the first place! Welcome to the new offshored world.

Acknowledgements: I am indebted to Beena George and Heinz Klein for their thoughts and assistance on this paper.

References

Benbasat, I. and Zmud, R. "Empirical Research in Information Systems: The Practice of Relevance", *MIS Quarterly*, 23(1), 1999, pp. 3-16.

Business-Standard.com. "Offshoring to surge in 2005: Hewitt study" March 2005.

CAIS, Special Issue on Relevancy, Volume 6, March 2001.

Datz, T. "Degrees of Change", *CIO Magazine*, October 15, 2004.

Davis, G., Ein-Dor, P., King, W. and Torkzadeh, R. "IT Offshoring: History, Prospects and Challenges", paper presented at ICIS2004, Senior Scholars Session, Washington, 2004.

Dibbern, J., T. Goles, R. Hirschheim, and B. Jayatilaka, "Information Systems Outsourcing: A Survey and Analysis of the Literature", *Database*, 35(5). December 2004, pp. 6-102.

Ferguson, E. "Impact of Offshore Outsourcing on CS/IS Curricula," *Proceedings of the Central Plains Conference of the Consortium for Computing Science in Colleges,* 2004, pp. 68-77.

Frauenheim, E. and M. Yamamoto. "Reforms, not rhetoric, needed to keep jobs on U.S. soil," *Digital Agenda – Offshoring* at c|net news.com (May 4, 2004)

Friedman, T. *The World is Flat: A Brief History of the Twenty-First Century*, Farrar, Straus & Giroux, NY, 2005.

Geary, L.H. "Vanishing Jobs," money.cnn.com, January 9, 2004.

Gopal, A., L. Beaubien, and T. Marcon. "Old wolf, new wool suit: India, IT, and the Legacy of Colonialism," *Proceedings of the 23rd International Conference on Information Systems,* 2002, pp. 525-532.

Hirschheim, R. and Klein, H. "Crisis in the IS Filed? A Critical Reflection on the IS Discipline", *Journal of the Association of Information Systems*, 4(5), October 2003.

Jobs, S., "You've got to find what you love", *Stanford Report*, June 14, 2005.

Kern, T., Lacity, M. C. and Willcocks, L. *Net Sourcing: Renting Business Applications and Services Over a Network*, Upper Saddle River, NJ: Prentice-Hall, 2002.

King, J. "Damage Control: How to combat offshore outsourcing backlash," in: *Computerworld*, 2004a.

King, W. "Outsourcing and the Future of IT", *Information Systems Management*, 21(4), Fall 2004b.

King, J., and Lyytinen, K. (eds.) *Information Systems: The State of the Field*, John Wiley & Sons, Chichester, 2006.

Koch, C. "Offshore Outsourcing: The Politics," in: *CIO*, 2003.

Konrad, R., "Computer jobs lose luster as young techies aspire to other careers", *Houston Chronicle*, June 19, 2005.

Lopez, A. M. "Outsourcing? Offshore? Students Need to Know," *Proceedings of the Information Systems Education Conference 2004,* Newport, RI. §3453. 2004, pp. 1-6.

Lyne, J. "Political Storm Pushes Outsourced New Jersey Center Onshore," http://www.conway.com/ssinsider/snapshot/sf030519.htm (May 19, 2003).

Mann, C. "Globalization of IT Services and White Collar Jobs: The Next Wave of Productivity Growth", International Economics Policy Briefs: PB03-11, Washington, DC, 2003.

McLaren, J. "Globalization and Vertical Structures", *American Economic Review*, 90(5), 2000, pp. 1239-125.

McLaughlin, L. "An Eye on India: Outsourcing Debate Continues", *IEEE Software,* 2003.

Mohnot, N. "Why 'India Inside' spells quality?" *Dataquest*, October 2003; accessed from *www.dqindia.com.*

Morello, D. "U.S. Offshore Outsourcing: Structural Changes, Big Impact," Note number: COM-20-4837, Gartner, 2003.

Pollack, T. A. "The Potential Impact of Offshore Outsourcing on Information Systems Education Programs, " *Proceedings of the 2004 ASCUE Conference,* Myrtle Beach, SC, 2004, pp. 205-210.

Press Trust of India, "BPO backlash! US state nixes TCS deal" http://www.rediff.com/money/2003/nov/22bpo.htm (November 22, 2003.

Pretzlik, C. "Finance Companies plan shift to low cost countries", *Financial Times London (UK)*, April 9, 2003, p.14.

Robinson, M. and Kalakota, R. *Offshore Outsourcing: Business Models, ROI and Best Practices*, Milvar Press, 2004.

Schuldt, B. and Davis, B. "Offshore Outsourcing: A New Driver for University Curriculum Change?", Southeastern Louisiana University, working paper, 2005.

Thibodeau, P. "Anti-offshore-outsourcing groups banding together," *Computerworld*, February 24 2004.

Vegso, J. "Interest in CS as a Major Drops Among Incoming Freshmen", *Computing Research News*, Vol. 17, No. 3, May 2005.

Weber, R. "Some Implications of the Year-2000 Era, Dot-com Era, and Offshoring for Information Systems Pedagogy", *MIS Quarterly*, 28(3), June, 2004, pp. iii – xi.

Westerman, G. and Ross, J. "Utility Computing and the Future of IT Outsourcing," *IBM Systems Journal*, 2003.

Index

A

Adaptability 291
Agency theory.... 166, 274, 446, 450
Alignment .. 179, 286, 348, 550, 610
Analytic hierarchy process (AHP) 175
Application Service Providing (ASP) 285, 481, 507, 525
ASP market..... 537
Asset specificity..... 53, 55, 60, 90, 166, 169, 229, 249, 251, 260, 261, 273, 533

B

Backsourcing 83, 98, 586
Benchmarking... 270, 274, 275, 312, 326, 590
Business Process Outsourcing (BPO)..... 140, 543, 580, 583, 606

C

Capabilities ... 60, 97, 347, 370, 490, 557
Capability Maturity Model (CMM) 612, 639, 661, 693
Center of competency 331
Center of excellence..... 625, 626
Change management..... 105
Community of practice 577
Comparison theory..... 407
Competitive advantage 62, 233, 264, 348, 352, 367, 493, 524, 526, 528, 633
Complexity of arrangement 140, 284
Conflict . 84, 90, 219, 233, 250, 317, 323, 325, 329, 677
Conflict resolution 63, 227, 246, 277, 570
Contract interpretation 224
Contract negotiation..... 225, 324
Contractual complexity..... 274, 277, 549
Contractual definition 225–49
Control mechanism 72, 189, 190, 304, 446, 466, 654
Control over project 189
Control over vendor 141, 610
Coordination 144, 189, 273, 494, 618, 636, 668
Coordination committee..... 226
Coordination mechanism 190
Core activity... 4, 153, 267, 348, 645
Core business 531, 534, 589
Core capability 278, 348
Core competency .. 4, 71, 84, 86, 88, 92, 168, 170, 229, 329, 353, 606, 692
Core curriculum 694
Core jobs 688
Core professionals..... 410, 434
Cost advantage..... 28, 44, 90, 608, 617, 624, 639, 640
Cost control..... 228, 327
Cost escalation 169
Cost reduction 318, 389, 555, 559
Cost reduction tactic 317
Cost savings..... 89, 235, 318, 488, 548, 556, 587, 588, 612, 637
Critical social theory 73
Cross-cultural collaboration655, 657
Cross-cultural differences 58, 74, 652, 655, 695

D

Data center consolidation.. 226, 318, 331
Data center operations.. 65, 448, 621
Decision process 316
Degree of outsourcing..... 52, 53, 67, 109, 293

Differentiation..... 65, 116, 387, 390, 392, 524, 526, 532, 644
Dispute resolution..... 153

E

Economic theory..... 34, 89
Embedded knowledge..... 664, 671, 673, 677
Encoded knowledge..... 667, 678
Encultured knowledge 664, 669, 676
Endogenous risk..... 163
Evaluation process 7, 175, 306, 317, 458, 486, 590
Evolution... 127, 202, 526, 531, 624, 647, 661
Exchange control 140
Exogenous risk..... 163
Expectancy theory..... 488

F

Financial slack 32, 45, 55
Firm size..... 34, 45, 391, 398, 493
Fixed-price contract .. 104, 110, 221, 325
Formal control 191, 263, 264
Formalization..... 191, 663

G

Governance187, 188, 260, 268, 287, 493, 548
Governance choice..... 262
Governance forms..... 261
Governance mechanism.... 188, 191, 196, 202, 571
Governance mode 287, 296
Governance performance..... 274
Growth strategy..... 387

H

Human resources services. 547, 548, 621

I

Impact evaluation..... 175
Implementation phase 564
Information services..... 265
Information systems functions .. 271, 290, 485
Information Technology Act..... 147
Insourcing .. 107, 267, 304, 631, 641
Institutional theory..... 115
Intellectual property... 145, 546, 675

J

Joint venture.... 8, 35, 140, 178, 223, 229, 396, 566, 568, 655, 681

K

Knowledge exchange..... 577
Knowledge management... 397, 659, 694
Knowledge transfer.... 264, 357, 662

L

Labor cost advantage 6, 607, 611, 617, 632
Language... 149, 205, 611, 617, 652, 663, 670, 675, 680
Legal issues..... 139, 147, 621
Loss of control 92, 93, 205, 492
Loyalty..... 411

M

Market area 387
Market leadership 524, 530, 595
Market parceling..... 387
Market stimulation..... 387
Marketing channels theory..... 84
Maturity 381, 492, 612, 632, 643, 672
Measurement difficulty..... 166, 274
Maturity 492
Multi-vendor mode 112

N

Norms 117, 262, 406, 486, 491, 578, 654, 661
Number of suppliers..... 71, 168, 270

O

Obedience 411
Offshore agreements 142
Offshore arrangements..... 7
Offshore outsourcing 6, 138
382, 544, 606, 631, 651, 659, 687
Operational control . 5, 53, 157, 547, 666
Opportunistic behavior ... 30, 61, 74, 111, 187, 207, 263, 597
Organizational complexity 569, 575, 663
Organizational culture 168, 189, 319, 393, 578, 634, 636, 647, 681
Outsourcing agreements 142
Outsourcing arrangements 5, 107, 240, 249
Outsourcing mode..... 109
Outsourcing partnership..... 224

P

Place specificity 682
Power theory..... 59, 63
Pricing 152, 270, 330, 536, 612, 615
Privacy 146
Production cost 60
Production costs..... 29, 54, 89, 90, 200, 594
Production economies..... 29
Professionalization..... 117
Prospect theory 495

Q

Quality control 205, 424, 591

R

Reciprocity..... 406
Relationship management... 12, 227, 351, 654
Reputation... 95, 179, 218, 274, 395, 488, 506, 533, 587, 678
Resource-based theory/view 61, 347, 493, 532, 569
Risk exposure..... 164
Risk factors 166, 168
Risk management..... 168, 170, 173

S

Satisfaction.. 94, 103, 233, 274, 358, 482
Selective outsourcing.... 58, 93, 109, 271, 389
Service debasement..... 169
Service guarantee..... 485, 489, 547
Service level..... 143, 270, 333, 537
Service performance 95, 275, 571
Service quality 94, 369, 489, 505, 545
Service-oriented architecture (SOA) 525
Six Sigma..... 555
Social exchange theory 406
Software as a service..... 285
Strategy layers..... 387
Staffing 655
Stage model..... 632
Straddler..... 681
Strategic alignment 285, 286, 296
Strategic groups 391
Strategic integration 286
Strategy profile 387
Structural change 92
Supplier presence..... 32, 638
Switching costs ... 90, 111, 167, 169, 278, 327, 485, 544, 576
System complexity.... 163, 213, 389, 690
Systems control..... 155
Systems integration.... 482, 491, 615

T

Tacit knowledge..... 577, 680
Task complexity..... 169, 170, 181, 506, 534, 537, 578, 593
Tax 139, 142, 152, 214, 614
Technological change . 61, 263, 274, 389, 397, 404
Technological uncertainty..... 231
Theory of the firm..... 59
Tight contract..... 115, 231, 242, 249
Training..... 144, 411, 414, 554, 555, 625, 656, 681, 693
Transaction costs..... 30, 60, 89, 260, 590, 592, 599
Transformation..... 112, 566, 577
Transition.... 96, 144, 151, 169, 174, 467, 550
Travel..... 614, 668, 672, 678
Trust.... 95, 188, 226, 264, 279, 412, 455, 533, 550, 570, 610

U

User satisfaction..... 176, 483, 487
Utility computing..... 536, 690

V

Vendor perspective 188, 382, 524

W

Web services..... 524
Work culture 609, 617, 655