Transplants' role stress and work performance in IT outsourcing relationships

by

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A dissertation submitted to BI Norwegian School of Management
for the degree of Dr. Oecon

Series of Dissertations 6/2006

BI Norwegian School of Management

Department of Leadership and Organization

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Series of Dissertations 6/2006

ISBN: 82 7042 752 7
ISSN: 1502-2099

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N-0442 Oslo
Phone: +47 4641 0000
www.bi.no

Printing: Nordberg

The dissertation may be ordered from our website www.bi.no
(Research – Research Publications)

Abstract

This research investigates individual level effects of information technology (IT) outsourcing. The starting point is the lack of detailed research exploring the situation of transferred IT employees. The research problem is thus to examine these individuals' new roles and work outcomes.

The basis of this research rests on several organization and management theories typically applied to outsourcing separately. Some theories were focused primarily on cost concerns and resources concerns, while others had partnership concerns. Stakeholder theory recognizes the importance of balancing interests of all stakeholder groups. Agency theory recognizes that principal-agent relationships change as a consequence of outsourcing. And economic theories are addressing performance, but not individual level work outcome directly. These complementary perspectives are integrated into a framework, which subsequently was applied in empirical research.

A combination of qualitative and quantitative research was used to explore and test the findings. The exploratory case studies involved six large organizations and in-depth interviews with a selected number of client and vendor stakeholders. Combined they revealed important features influencing and creating successful IT outsourcing relationships, and more specifically explored individual level attitudes, behavior and performance. One important stakeholder group affected seriously by the outsourcing arrangement was recognized as the transplant group – defined as those employees who get transferred from client to vendor organizations, which employ them and offer their services back to the original employer for a service fee. The case studies recognized occupational stress among transplants, outsourcing arrangement stressors, and indicated consequences of occupational stress.

The confirmatory survey involved transplants of IT outsourcing. The survey found role stress as prevalent among transplants of IT outsourcing. In turn, perceived role stress was found to influence transplants' work outcome. Three outsourcing arrangement stress factors — complementary core competencies, client managerial persistent expectations, and relational norms — were found as stressors that affect the level of perceived role stress among transplants.

The main contribution of this research is the development and application of a multiparadigmatic based research framework providing a more comprehensive understanding of transplants' role stress and work outcome. Used as an analytic tool this framework might help managers in dealing with issues of role stress and among transplants of IT outsourcing.

Acknowledgements

In the course of writing this thesis many people contributed directly and indirectly, and I would like to take this opportunity to thank them all for their support.

In particular, I would like to express my sincere gratitude to my supervisor Professor Petter Gottschalk, BI Norwegian school of Management, for his commitment, support and intellectual guidance through the good but also difficult times of this research project. His ongoing enthusiasm has been invaluable. I would also like to thank two other colleagues at BI Norwegian School of Management, Professor Erling S. Andersen for his kind help starting up this project, and director Leif Riksheim for his support and hospitality at BI Ålesund.

I also wish to thank my fellow PhD students, especially Dr Gisle Henden for his continual encouragement and for being such a stimulating conversation partner.

I would also like to acknowledge all the interviewees and respondents who so kindly spared their time and shared their views and experience. In particular I would like to thank all the participants from Scandinavian Airlines, ABB, Rolls-Royce, and their information technology service providers CSC, IBM and EDS, who so kindly participated in the research.

Crucial to undertaking such a long-term study is the course of financial support, and in this matter I wish to express my sincere gratitude to Norway Post, Mr Leif Buseth and Mr Lars Kalfoss.

Last, but not least, I will thank my family and friends for their ongoing support during this challenging learning process.

Hans Solli-Sæther

Ålesund, Norway, July 2006

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1. Introduction

Historically, much research on information technology (IT) outsourcing has focused on the sourcing decision itself, trying to understand "why do organizations outsource?" and literature on IT outsourcing offers a variety of explanations of "how do organizations outsource?" Recently, an emerging stream of research has focused on the outsourcing relationship. This study will take a look at how outsourcing affects individuals. Specifically, the focus will be to understand the situation of those employees who get transferred from client to vendor organizations as part of the IT outsourcing arrangement.

1.1 Purpose and contribution of the study

Information technology outsourcing — the practice of transferring IT assets, leases, staff, and management responsibility for delivery of services from internal IT functions to third party vendors — has become an undeniable trend ever since Kodak's 1989 landmark decision. In recent years, private and public sector organizations worldwide have outsourced significant portions of their IT functions (Hirschheim & Lacity, 2000). Examples can be found in major organizations such as Scandinavian Airlines Systems, ABB, and Rolls-Royce. In a business perspective, outsourcing is motivated by the promise of strategic, financial, and technological benefits. The success of outsourcing, then, should be assessed in terms of attainment of these benefits. In a user perspective, outsourcing success is the level of quality of offered services (Lee & Kim, 1999).

But, IT outsourcing is also about organizational, relational, and individual changes. As the outsourcing contract is signed there is an overnight change in legal relationships, personal relationships, and control mechanisms. IT employees formally leave their organization and get transferred to the vendor organization or to the new spin-off company, which employs them and offers their service back to the original employer for a service fee. The status of these employees, relative to the original employer, changes from subordinates to third-party contractors (Ho, Ang, & Straub, 2003). The people who get transferred have to behave as an external vendor and have to focus on new issues such as marketing, customer services, and offering competitive prices to the clients (Willcocks & Lacity, 1998). These IT employees experience radical changes in their careers.

In reviewing IT outsourcing based research no articles were found questioning the transferred IT employees' new role. Exploratory case studies recognized the unique and difficult position of these employees. Interpretations of

relevant research and outsourcing practices motivated further research into individual level role stress of transferred IT employees.

1.2 Research questions and framework

The primary objective of this study was to examine influences of transplants' individual level role stress on their work outcome. The secondary objective was to identify elements of IT outsourcing arrangements that influence transplants' level of role stress. Specifically, two research questions arise:

- How does transplants' role stress in IT outsourcing affect their work outcome?
- What are the predictors of transplants' role stress in IT outsourcing?

In this research *IT outsourcing* is defined as a process whereby an organization decides to contract-out or sell the firm's IT assets, people and/or activities to a third party supplier, who in exchange provides and manages these assets and services for an agreed fee over an agreed time period (Kern & Willcocks, 2002). This process-oriented approach to outsourcing recognizes key elements of exchange and the relationship between different stakeholder groups.

One important stakeholder group is the *transplant* group, defined as those IT employees who get transferred from the client company to the vendor company. These employees formally leave their organization and are transplanted into the vendor company, which employs them and offers their services back to the original employer for a service fee. Even though these transplants still provide services to the original organization, it no longer directly employs them (Ho et al., 2003). For the purpose of this research, the IT employees that get transferred are called transplants.

The coalition of disparate corporate cultures yields appreciable levels of role stress for transplants in IT outsourcing. Two important facets that influence the level of stress are role ambiguity and conflict (Nygaard & Dahlstrom, 2002). *Role ambiguity* emerges because of the paucity of relevant information as well as the level of complexity and change. *Role conflict* similarly materializes as employees evaluate responsibilities in light of historical obligations and associations with a new employer. Ambiguity and conflict might jeopardize efforts to achieve objectives.

Work outcomes, as used in this research, cover transplants' attitudes, behavior and task performance.

1.3 Overall research design

Even though IT outsourcing is a practical issue, it also has significant impact on organization and management theories. IT outsourcing is as a discipline based on several other concepts and disciplines, as well as the relations between them — international business, marketing, psychology, technology management, strategic management, project management, knowledge management, finance, economy, organizations, traditional management, political science and the behavioral sciences.

Early research into the phenomenon of IT outsourcing focused on why organizations outsourced (determinants of outsourcing, advantages and disadvantages of outsourcing) and how organizations outsourced (what functions to outsource, how to evaluate the vendor, how to structure the contract). Theoretically, IT outsourcing research has a basis in economic theories, organizational theories, and strategic management theories as well. For example, transaction cost theory and neo-classical economic theory are important elements in the outsourcing decision-making process. Resource-based theory of the firm, including the knowledge-based perspective of the firm, is another example of important scholarly value when applied to IT outsourcing models. Partnership and alliance theory is also applicable to understanding relationship between the two parties.

This research had a mixed method approach with literature review, exploratory case studies and a quantitative survey. Table 1.1 below summarizes the research process, illustrating three research stages, methods employed, who was involved, key findings, and output and implications for the following stages of research. The process is described briefly below.

In *phase 1* an extensive review of IT outsourcing based research was conducted. Starting with major IS/IT journals, promising articles were followed back to their origin, whether based in articles, books, or dissertations. Previous research has investigated why companies outsource (e.g., Ang & Cummings, 1997; Lacity & Hirschheim, 1993), how companies manage outsourcing contracts (e.g., Elitzur & Wensley, 1998), and how to manage an IT outsourcing relationship (e.g., Kern & Willcocks, 2002; Kern, 1999). Lately, a few researchers have focused on individual level challenges (Ho et al., 2003; Koh, Ang, & Straub, 2004). Based on the literature review, eleven theories concerned with IT outsourcing were recognized, and used to extend and strengthen the theoretical understanding of this complex field. They were compared in terms of what they recommend for outsourcing. Some theories were focused primarily on cost concerns (neo-classical economic theory, transaction cost theory, agency theory, contractual theory, theory of firm boundaries), and resource concerns (theory of core competencies and resource-based theory), while others had partnership concerns (partnership

and alliance theory, relational exchange theory, social exchange theory, and stakeholder theory). In order to understand the inherent complexities and the underlying constructs of managing successful IT outsourcing relationships, empirical research was needed. An interesting observation from phase 1 was that very little research was conducted on individual level attitudes, behavior, and performance.

The exploratory case studies in *phase 2*, conducted through July – September 2004, had two related parts. First, important features of managing IT outsourcing relationship were examined. The second part of the exploratory case studies consists of an examination of how individuals or groups of individuals, called stakeholders, influenced the relationship. Data collection was done through a total of sixteen interviews, with questions addressing: enter and exit strategies, phases and activities, contract development, personnel issues, governance structure and relationship management, and knowledge management, with a strong emphasis on what characteristics influenced successful IT outsourcing relationship. One important stakeholder group was recognized as affected seriously by the IT outsourcing arrangement — employees transferred from client to vendor organizations. In addition to the interviews, a survey instrument was developed. All interviewees were asked to rate the importance of eleven individual critical success factors from IT outsourcing. Core competence management, stakeholder management, and production cost reduction, were found to be the most critical success factors in the three IT outsourcing relationships studied (Gottschalk & Solli-Sæther, 2005).

In *phase 3*, a survey instrument was developed to further investigate role stress among transplants of IT outsourcing. Data was collected during June – August 2005 in a large IT outsourcing service provider. Questionnaires were sent to 159 transplants. A total of 103 complete questionnaires were received, which makes the overall response rate 64.7%. A few responses were later refused because respondents did not belong to the target group of transplants. Three IT outsourcing characteristics were found to influence the perception of transplants' role stress, which in turn affected work performance.

Stage of research	Methods	Who involved	Key findings/output	Implications for next phase
Phase 1	Literature review	Researcher with input from supervisor	Outsourcing literature and research was focusing on organizational and relationship issues.	To understand the inherent complexities and the underlying constructs of managing successful IT outsourcing relationships empirical research was needed. Continue research into individual level attitudes, behaviour, and performance of transplants.
Phase 2	Exploratory case studies In-depth interviews with 16 stakeholders	Rolls-Royce – EDS SAS – CSC ABB – IBM	Ability to handle transfer of employees was critical to the relationships. Transplants experienced radical changes in their careers as they got moved from client to vendor organizations.	Confirmatory survey on occupational stress needed.
Phase 3	Survey	103 IT employees transferred from client to vendor organization	Role stress was identified as prevalent among transplants, and found to affect task performance. Three outsourcing arrangement stressors influenced the perception of role stress.	Conceptual refinements needed.

Table 1.1. Overview of the research process.

1.4 Expected contributions

In reviewing IT outsourcing based research (see Appendix A), very little attention was found on the issue of how outsourcing affects individuals. Thus, this research intends to shed light on an important stakeholder group of IT outsourcing arrangements, the transplants. As this research collected data through exploratory case studies and a confirmatory survey, practical and theoretical insights will be given. The mixed method approach will enrich the data material, and hopefully better the analysis and discussions of results.

As researchers have not looked into the issues of transplants' role stress previously this research may broaden our theoretical understanding of the complexities of outsourcing. And further, as practitioners from lower organizational levels are the focus group of this research, new insights for managers might be valuable.

1.5 Organization of the dissertation

This thesis is organized as follows. In chapter 2, there is a comprehensive review of IT outsourcing based research and literature. In the following chapter 3, an overview of the three international based research case studies is given, followed by an analysis based on the framework developed in chapter 2. Using theory and results from case studies, chapter 4 proposes a framework for understanding transplants' role stress and effectiveness in IT outsourcing. Methodology for the confirmatory survey research is given in chapter 5. Data analysis and results are presented in chapter 6. And finally, discussion of results and the contributions to research and practice are given in chapter 7.

2. Understanding the field of investigation

According to Leiblein, Reuer, & Dalsace (2002), the decision to outsource or insource enterprise-wide activities related to the acquisition, deployment, and management of IT represents one of the more complex choices facing a firm's mangers. They examined the relationship between outsourcing decision (governance choice) and technological performance, but they found that neither outsourcing nor internalization per se results in superior performance. Rather, observed differences in the performance of transactions governed by the different organizational forms were driven by factors underlying governance choice.

This chapter starts with a short presentation of popular sourcing practices. Subsequently, several organization and management theories are presented as a means of understanding underlying factors of IT outsourcing. At the end of the chapter, the enhanced understanding is synthesized and applied for the purpose of this study.

2.1 A sourcing universe

Hirschheim and Lacity (2000), define *insourcing* as "the practice of evaluating the outsourcing option, but confirming the continued use of internal IT resources to achieve the same objectives of outsourcing." Their research contributes to the IT sourcing research base by providing evidence that companies need not necessarily turn to outsourcing to improve IT performance. While outsourcing may be a preferred option for some organizations for various reasons, such as returning to core competencies or focusing IT staff on more business-oriented IT activities, Hirscheim and Lacity show that if cost reduction is the major objective, IT managers can oftentimes replicate a vendor's cost reduction tactics. Insourcing success, however, is predicated on a number of key issues, including aligning perceptions of and agendas for IT.

IT outsourcing has been defined as the "decision to transfer IT assets, leases, staff, and management responsibility for delivery of IT services from an internal IT function to an external IT provider" (Kern & Willcocks, 2002). If the costs represent more than 80% of the IT budget, this is called total outsourcing (Lacity, Willcocks, & Feeny, 1996). When the decision is to source selected IT functions from external provider(s), while still providing between 20% and 80% of the IT budget internally, this is called selective outsourcing. The vendor(s) becomes responsible for delivering the result of the selectively outsourced IT activities, while the customer remains responsible for delivering the result of the insourced activities. Traditional outsourcing is

depicted by the customer having a one-to-one relationship with large IT service companies (e.g., IBM, EDS, CSC). This is the domain of very large companies due to the fact that both set-up and maintenance costs are expensive. Unlike traditional outsourcing, business application outsourcing offered by application service providers (ASPs) is targeted for the small and medium enterprises (SMEs). This is typically a one-to-many model, where an application will be offered to numerous customers across different sites. The emerging technologies coupled with economies of skills (rather than scale) make the ASP model a viable and affordable option for SMEs (Currie & Seltsikas, 2001).

Business processing outsourcing is typically the outsourcing of a company's non-core or back-office business processes. Usually those processes are IT enabled (or should be IT enabled) and hence can be transformed by the use of a new or improved technology platform. The appeal of business process outsourcing is that it therefore attempts to involve a new support services model involving cost effective, scaleable, efficient services (Honess, 2003). The growth in demand for process outsourcing has also seen an expansion in the range of services being provided by suppliers. Processes typically outsourced include finance and accounting, procurement, human resources, and real estate. According to Feeny, Lacity, and Willcocks, (2005), successful outsourcing of back-office business functions requires the client to identify which competencies to assess, to undertake careful evaluation of supplier strengths, and to remain involved in the business processes.

According to Linder (2004), the concept of *transformational outsourcing* is an emerging practice, where companies are looking outside for help for more fundamental reasons — to facilitate rapid organizational change, to launch new strategies and to reshape company boundaries. In doing so, they are engaging in transformational outsourcing: "partnering with another company to achieve a rapid, substantial and sustainable improvement in enterprise-level performance." Transformational outsourcing places the power to bring new capabilities to the organization squarely in the hands of executives who have and value those capabilities. In other words, the outsourcing partner provides a management team that is experienced in the capability that the organization seeking change needs. And those executives are empowered by the outsourcing process to implement the practices they bring with them.

Since the mid-1990s *global outsourcing* — sometimes called off sourcing or offshoring — has been a fast growing aspect of the world economy. Venkatraman (2004) has defined the term offshoring as "the practice among U.S. and European companies to migrating business processes to India, the Philippines, Ireland, China and elsewhere to lower costs without significantly sacrificing quality." The strategic benefits for firms can be portrayed as a means to reduce costs, improve asset efficiency, and increase profits.

Criticisms of outsourcing have often been in the areas of changing employment patterns, globalization of labor force, and its effects on individuals and organizations (Clott, 2004). For most companies, coordinating a far-flung network of business processes presents new challenges, e.g., security, culture and knowledge transfer. For global outsourcing the role of transaction costs is almost as significant as production costs (Qu & Brocklehurst, 2003).

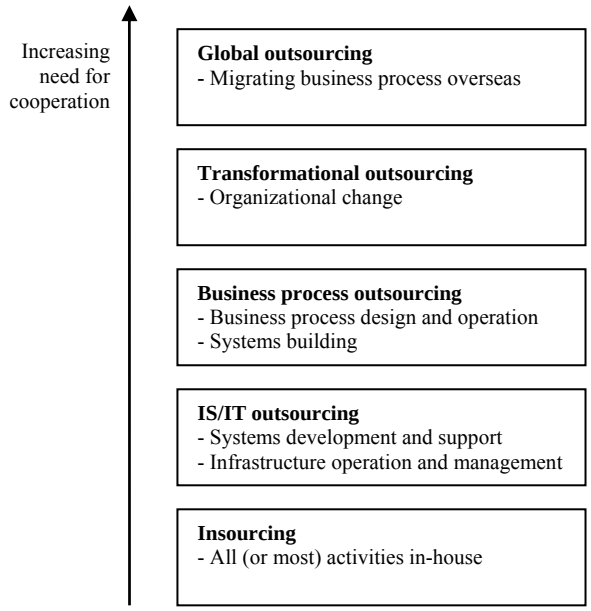

Figure 2.1. A sourcing universe.

The suggested sourcing universe in Figure 2.1 recognizes that a range of assets can be outsourced in order to satisfy business objectives. Assets can refer to hardware, software, people, and processes, each of which can be separately examined. As the extent of assets outsourced increases, there will be an increasing need for cooperation between the outsourcing parties, because of increasing uncertainty. In the case of insourcing, the client company retains responsibility for the delivery of all IT service, bringing vendor resources in only to supplement internally managed teams. External delivery of services is relatively easy to manage and control, because the amount is not very high. In outsourcing, the responsibility for delivery of services, such as infrastructure operation and management, systems development and support, business process design and operation, and organizational change, is transferred to an external vendor. This external vendor can even be located

overseas. As the complexity of these services increases, so does the uncertainty. And thus, the need for management control systems and trust in the outsourcing relationship increases. Characteristics of the transaction, environment and parties, can be used in the design of control systems (Langfield-Smith & Smith, 2003).

2.2 Theoretical foundations

In this section, eleven organization and management theories are presented according to attributes like focus, aim, unit of analysis, outsourcing philosophy and critical success factors. The primary purpose is to strengthen the theoretical understanding of IT outsourcing. This approach is adapted from Earl (2001). No claims are made that any one theory outperforms others. Each represents a particular theoretical orientation and a different form of organizational intervention of IT outsourcing. The theories are not mutually exclusive, and two or more of them can be applied to the same outsourcing arrangement. Furthermore, there may be other theories that the literature review has not encountered. A comparison of theories is presented in Table 2.1 on page 33.

2.2.1 Neo-classical economic theory

Focus, aim, unit of analysis. Neo-classical economic theory regards every business organization as a production function (Williamson, 1981), where their motivation is driven by profit maximization. This means that companies offer products and services to the market where they have a cost or production advantage. They rely on the marketplace where they have disadvantages. Neo-classical economic theory posits that firms outsource IT to attain cost advantages from assumed economies of scale and scope possessed by vendors (Ang & Straub, 1998).

In neo-classical economic theory, outsourcing may arise in two ways. First, outsourcing may arise through the substitution of external purchases for internal activities. In this way, it can be viewed as a discontinuation of internal production (whether it be production of goods or services) and an initiation of procurement from outside suppliers. To the extent this type of outsourcing reduces a firm's involvement in successive stages of production substitution-based outsourcing may be viewed as vertical disintegration. This seems to be the most commonly understood type of outsourcing. Outsourcing may also occur through abstention. Outsourcing need not be limited to those activities that are shifted to external suppliers. On the contrary, outsourcing may also arise when a firm purchases goods or services from outside organizations even when those goods or services have not been completed in-house in the past. In neo-classical economic terms, Gilley and Rasheed (2000) posed the question, “Making more by doing less?” Their

study empirically examined the extent to which outsourcing of both peripheral and near-core tasks influenced the firm's financial and non-financial performance. In addition, the potential moderating effects of firm strategy and the environment on the outsourcing-performance relationship were examined. Results indicate that both firm strategy and environmental dynamism moderated the relationship between outsourcing and performance, whereas there was no significant direct effect of outsourcing on firm performance.

In neo-classical economic theory, both the distribution of income and the composition of output are endogenously and simultaneously determined by a general equilibrium of supply and demand. The underlying data on the supply side are parametrically given resource inputs and a given technology of production for transforming inputs into outputs; on the demand side, the data are specified in terms of a given distribution of ownership of inputs and a given pattern of preferences for final outputs (Gram, 2003).

Contribution to the understanding of IT outsourcing. Companies will justify their sourcing strategy based on evaluating possibilities for production cost savings. Thus, the question of whether or not to outsource, is a question whether the marketplace can produce products and services at a lower price than internal production. In the context of IT outsourcing, a company will keep its IT-function internally if this has production cost advantages, and it will outsource when the marketplace can offer production cost savings. However, defining outsourcing simply in terms of procurement activities does not capture the true strategic nature of the issues (Gilley & Rasheed, 2000). IT outsourcing is not only a purchasing decision — all firms purchase elements of their operations. This is done to achieve economic, technological, and strategic advantages. However, the economies of scale and scope argument would predict that outsourcing has little to offer to larger firms, because they can generate economies of scale and scope internally by reproducing methods used by vendors. As documented by Levina and Ross (2003), there are other reasons for large firms to move into outsourcing (e.g., the vendor's efficiency is based on the economic benefits derived from the ability to develop a complementary set of core competencies).

2.2.2 Transaction cost theory

Focus, aim, unit of analysis. According to Henisz and Williamson (1999), transaction cost economics is a comparative contractual approach to economic organization in which the action resides in the details of transactions on the one hand and governance on the other. Given that all complex contracts are unavoidably incomplete (by reason of bounded rationality) and that contract as mere promise, unsupported by credible commitments, is not self-enforcing (by reason of opportunism), the question is which transactions

should be organized how. Much of the predictive content of transaction cost economics works through the discriminating alignment hypothesis, according to which transactions, which differ in their attributes, are aligned with governance structures, which differ in their costs and competences, so as to effect a (mainly) transaction cost economizing result. Implementing this requires that transactions, governance structures, and transaction cost economizing all be described.

Transaction cost economics concurs that the transaction is the basic unit of analysis and regards governance as the means by which order is accomplished in a relation in which potential conflict threatens to undo or upset opportunities to realize mutual gains (Henisz & Williamson, 1999). The problem of conflict on which transaction cost economics originally focused is that of bilateral dependency. The organization of transactions that are supported by generic investments is easy: classical market contracting works well because each party can go its own way with minimal cost to the other. Specific investments are where the problems arise.

Williamson (1979) identified three types of transactions according to specificity. Non-specific transactions have low asset specificity and are associated with the acquisition of commodities. Idiosyncratic transactions have high specificity. Mixed transactions have elements of both commodity and customization. Transaction specificity can be viewed alongside transaction frequency, a second major construct of transaction cost economics, which distinguishes occasional from recurrent transactions. Two frequency categories multiplied by three specificity types produces six discrete transaction types. It can be argued that the market is better for all but transactions, which are both recurrent and idiosyncratic. The third major determinant of transaction costs is uncertainty, compounded by the bounded rationality of humans and often associated with the complexity of the product to be acquired.

Uncertainty is recognized as a major determinant of transaction costs. It is compounded by the bounded rationality of humans and is often associated with the complexity of the product acquired. Given the cognitive limits of human actors, complex contracts, such as IT outsourcing contracts, are unavoidably incomplete. Contractual incompleteness poses problems when paired with the condition of opportunism — which manifests itself as adverse selection, moral hazard, shirking, sub-goal pursuit, and other forms of strategic behavior. Because human actors will not reliably disclose true conditions upon request or self-fulfill all promises, contract as mere promise, unsupported by credible commitments, will not be self-enforcing (Williamson, 2000).

Contribution to the understanding of IT outsourcing. In transaction cost economics, firms are hypothesized to take sourcing decisions to minimize the

sum of production and transaction costs (Anderson, Glenn, & Sedatole, 2000). If transaction costs offset production cost advantages of the external supplier, the firm subsumes the activity — an outcome termed vertical integration or insourcing. Otherwise, it can be argued that the market is better for all transactions. The consistency of the empirical results seems startling in the light of two problems with this outsourcing philosophy. First, production and transaction costs are rarely neatly separable. Second, decision-makers are likely to be affected by wealth effects associated with sourcing, and thus unlikely to make decisions that strictly maximize firm profit (Anderson et al., 2000). Researchers have found that production cost differences seem more influential in sourcing decisions than transaction cost differences (e.g., Ang & Straub, 1998).

The transaction cost economics presumption is that economic actors attempt to forecast the potential for opportunism as a function of unfolding circumstances, and then take preventive actions in transactions where opportunism is likely to be high. Opportunism is an explanatory mechanism, not readily observable, and typically empirically untested. However, it is important because it has potential for enormous impact on economic performance (Jap, 2001). Opportunism is self-interest seeking with guile, and includes overt behavior such as lying, cheating and stealing, as well as subtle behavior such as dishonoring an implicit contract, shirking, failing to fulfill promises, and obligations. It is the equivalent of bad faith, the implication being that the party who is opportunistic is not trustworthy. In an outsourcing setting, opportunism may involve misrepresentations, unresponsiveness, unreasonable demands, and lying. The notion of opportunism is what differentiates transaction cost theory from alternative conceptualizations of the firm, such as agency theory, relational exchange theory, or resource-based view. Trying to minimize settings in which opportunistic behavior is likely becomes a critical success factor in IT outsourcing.

2.2.3 Contractual theory

Focus, aim, unit of analysis. An outsourcing contract provides a legally bound, institutional framework in which each party's rights, duties, and responsibilities are codified and the goals, policies, and strategies underlying the arrangement are specified. Every outsourcing contract has the purpose of facilitating exchange and preventing opportunism. Appropriate contractual arrangements can attenuate the leeway for opportunism, prohibit moral hazards in a cooperative relationship, and protect each party's proprietary knowledge. A complete contract reduces the uncertainty faced by organizational decision-makers and the risks stemming from opportunism on the part of one or more contracting parties. It provides a safeguard against ex post performance problems by restraining each party's ability to pursue private

goals at the expense of common benefits. An incomplete contract may bring about ambiguity, which creates a breeding ground for shirking responsibility and shifting blame, raises the likelihood of conflict, and hinders the ability to coordinate activities, utilize resources, and implement strategies (Luo, 2002).

Outsourcing contracts are relational contracts characterized by long durations of interpartner dependency and enormous unanticipated contingencies in an uncertain environment. Outsourcing often involves highly idiosyncratic assets that give rise to high coordination costs and appropriation concerns. The optimal contract completeness simultaneously requires opportunism mitigation and adaptation promotion. Transaction cost economics scholars commonly point to three categories of exchange hazards that necessitate contractual safeguards (or vertical integration): asset specificity, measurement difficulty, and uncertainty. Asset specificity emerges when sourcing relationships require significant relationship-specific investments in physical and/or human assets. The presence of these specific assets transform an exchange from a world of classical contracting into a world of neo-classical contracting in which the identity of parties is irrelevant into a world of neo-classical contracting in which the identity of exchange partners is of critical importance. For example, an information technology outsourcing provider may need to customize service offerings to the client's 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. Difficulty in measuring the performance of exchange partners also generates market hazards. Markets succeed when they can effectively link rewards to productivity — that is, they can measure productivity and pay for it accordingly. Uncertainty, a third hazard, also challenges an exchange by requiring the parties to adapt to problems raised from unforeseeable changes. High levels of uncertainty in conjunction with measurement difficulty or asset specificity render contracting even more hazardous. This encourages more complex contracts (Poppo & Zenger, 2002).

However, a contract alone is insufficient to guide outsourcing arrangements. Cooperation is also needed. Cooperation is an improvement process through mutual forbearance in the allocation of resources, such that one party is made better off and no one is worse off than it would otherwise be. Cooperation is a necessary complement that overcomes long-term contracts' constraints in adaptation and execution and becomes an important vehicle that nourishes continuity and flexibility when change and conflict arise (Luo, 2002). Similar to Luo's argument that contract and cooperation are not substitutes but complements, Poppo and Zenger (2002) argue that contracts and relational governance are not substitutes but complements. They found that relational exchange arrangements supported by trust are commonly viewed as substitutes for complex contracts in interorganizational exchange, and that

many argue that formal contracts actually undermine trust and thereby encourage the opportunistic behavior they are designed to discourage.

Contribution to the understanding of IT outsourcing. Kern and Willcocks (2000) have investigated contracts in IT outsourcing. The contract in outsourcing has been described as a mechanism that establishes the balance of power between the client and vendor. Contracts essentially have to be as airtight as possible, because research has shown that vendors tend to refer to it as their chief source of obligation. Vendors however would prefer to see the contract as a working document, giving them flexibility to suggest improvements and new services. This is the interest of most vendor companies, for their goal is one of profit margins. An IT outsourcing contract tends to be more complicated than other business contracts, resembling as it does a hybrid between an asset purchase and sale agreement, and a sale/leaseback agreement, in that there is a sale of assets or transfer of operations, transfer of employees, and a lease back to the customer of the information technology services that were divested. This legal complexity is evident in the detail and in the time typically invested in negotiating agreement. Third-party legal experts have for quite some time emphasized the need for a comprehensive contract, not only because it is their livelihood, but also because it basically becomes a reference point specifying how the client and vendor relate. Kern and Willcocks (2000) identified three common dimensions that can be a useful typology for analyzing control in IT: focus of control (directed at whom or what), measures of control (degree of control), and process of control (means of enforcing control). Using this typology as an underlying guide, Kern and Willcocks presented a post-contract management agenda as the focus of control. The greatest challenge that client companies face following the signing of the contract is the achievement and the enforcement of agreed terms. To accomplish the management agenda, an effective communication and operations structure has to be established in each organization and between both parties.

2.2.4 Agency theory

Focus, aim, unit of analysis. Agency theory has broadened the risk-sharing literature to include the agency problem that occurs when cooperating parties have different goals and division of labor. The cooperating parties are engaged in an agency relationship defined as a contract under which one or more persons (the principal(s)) engage another person (agent) to perform some service on their behalf which involves delegating some decision making authority to the agent (Jensen & Meckling, 1976). Agency theory describes the relationship between the two parties using the metaphor of a contract. In an IT outsourcing relationship this is a client-vendor relationship and an outsourcing contract.

According to Eisenhardt (1985), agency theory is concerned with resolving two problems that can occur in agency relationships. The first is the agency problem that arises when the desires or goals of the principal and agent conflict and it is difficult or expensive for the principal to verify what the agent is actually doing. The second is the problem of risk sharing that arises when the principal and agent have different risk preferences. These problems are well known in IT outsourcing. An example might be that the client organization wants to reduce its IT costs, while the vendor organization wants to maximize profits. The agency problem arises when the two parties do not share productivity gains. The risk-sharing problem might be the result of different attitudes towards the use of new technologies. Because the unit of analysis is the contract governing the relationship between the two parties, the focus of the theory is on determining the most efficient contract governing the principal-agent relationship given assumptions about people (e.g., self-interest, bounded rationality, risk aversion), organizations (e.g., goal conflict of members), and information (e.g., information is a commodity which can be purchased). Thus the question becomes: Is a behavior-oriented contract more efficient than an outcome-oriented contract? Outsourcing contracts are to a great extent tied up to service level agreements, where the outcome of the service is the focal point.

The agency theory is applicable when describing client-vendor relationships in IT outsourcing arrangements. Typically, the client organization (principal) transfers property rights to the vendor organization (agent). In the context of IT, assets transferred might be infrastructure, systems and documentation, and employees. For a certain amount of money, the vendor organization provides services to the client organization. This implies a change in legal relationships, and IT services are carried out using a more formal transaction process. The status of personal relationships also changes, from that of a manager and a subordinate, to that of a client-manager and a vendor. According to agency theory, control mechanisms also change, from that of behavioral control, to that of outcome-based control. If both parties to the relationship are trying to maximize their utility, there is good reason to believe that the vendor organization will not always act in the best interests of the client. Monitoring and bonding activities in reducing agency costs include auditing, formal control systems, budget restrictions, and the establishment of incentive compensation systems which serve to more closely identify the manager’s interests with those of the outside equity holder.

Contribution to the understanding of IT outsourcing. The original impetus for the development of agency theory was large corporations' separation of control from ownership. Thus, its focus was never on organizational boundaries, as with transaction cost theory. Agency theory's primary interest is not the decision to source via the hierarchy or via the market. Although all con-

tractual arrangements contain important elements of agency, agency theory is essentially concerned with the delegation of work by the principal to the agent via a contract, whether or not they are both within the same organization. However, agency and transaction cost theories share several concepts, such as opportunism, uncertainty and bounded rationality, and there is a rough correspondence between transaction cost economics' hierarchies and markets and agency theory's behavior-based contracts and outcome-based contracts. The technological and business complexity of IT means that there may be a critical success factor for the principal in choosing a suitable agent and in monitoring the agent's work. Only the agent knows how hard he is working, and that can be especially important in multilateral contracting where one agent acts for several principals. This is often the case in IT outsourcing because of the market dominance of one (or a few) large firm(s). Given the difficulties of behavior-based contracts suggested by agency theory, it is reasonable to assume that the overwhelming majority of clients would insist on outcome-based contracts when acquiring IT products and services. Such a strategy can only succeed if the client can confidently specify current and future requirements. But accurate predictions by the client may not always be in the vendor's interests, since vendor account managers often are rewarded according to contract profitability, which is principally achieved through charging the client extra for anything that is not in the contract.

According to Hancox and Hackney (2000), the choice of contract type depends on the agency costs, which include the principal's effort in assessing the agent's performance and the agent's efforts in assuring the principal of his commitment. Agency theory holds that human beings act through self-interest and therefore, as contracting parties, they may have divergent goals. An important aspect of the theory is that both principal and agent wish to avoid risk when dealing with each other. The principal may prefer to place risk with the agent via an outcome-based contract, whereas the agent may prefer to avoid risk by having a behavior-based contract. Outcome-based contracts are claimed to reduce agent opportunism because the rewards of both agent and principal depend on the same actions. Behavior-based contracts need the principal to have sufficient information to identify two possible dangers: first, whether there is adverse selection (the agent does not possess the skills he claims); second, moral hazard — the agent is shirking. Sourcing via the hierarchy may reduce the overall risk, but agency costs also exist in hierarchies. Problems between agents and principals are greater in complex organizations with many managerial layers.

2.2.5 Theory of firm boundaries

Focus, aim, unit of analysis. There has been renewed debate on the determinants of firm boundaries and their implications for performance. According to Schilling and Steensma (2002), the widely accepted framework of transaction cost economics has come under scrutiny as a comprehensive theory for firm scale and scope. At the heart of this debate is whether the underlying mechanism determining firm boundaries is a fear of opportunism (as posited by transaction cost economics), a quest for sustainable advantage (as posed by resource-based view theorists and others), a desire for risk-reducing flexibility (as has recently gained increased attention in work on options), or a combination of factors. Although perspectives on firm boundaries such as transaction costs or the resource-based view are based on fundamentally different motivations for pursuing hierarchical control over market contracts, they rely on common resource or context attributes as antecedents.

Contribution to the understanding of IT outsourcing. Schilling and Steensma (2002) explored how various attributes of technology to be sourced influence the governance mode chosen, and the intermediate mechanisms by which they do so. They found that uniqueness and difficulty of imitation are significantly related to the perceived potential for sustainable advantage. They also found that technological dynamism and difficulty of imitation are significantly related to the perceived threat of opportunism. In turn, consistent with a transaction cost perspective, the threat of opportunism increases the probability of outsourcing. Schilling and Steensma's findings suggest that the resource-based view, transaction cost economics, and an options perspective may play complementary roles in explaining firm technology-sourcing decisions. Firms may pursue resources that are unique or inimitable because of their potential to create a sustainable competitive advantage, but the uniqueness and inimitability may also create a potential for opportunism. The potential for opportunism and the degree of uncertainty associated with the technological resources then heavily influence the governance mode chosen. In sum, the results imply that the resource-based view explains why a firm pursues particular resources rather than others, but transaction costs and an options perspective better explain the governance mode undertaken for accessing the resources once they are chosen. Therefore, the theory of firm boundaries claims that resource-based view, transaction costs, and options perspectives each explain only a portion of managerial motivation for decisions on firm boundaries. The rationale supporting the choices firms make regarding technology sourcing is multidimensional; firms are not only seeking potential sources of competitive advantage, but are also seeking to avoid opportunism and to preserve or create flexibility (Schilling & Steensma, 2002).

Garicano and Hubbard (2003) suggest that, more recently, some theorists have proposed that firms' boundaries reflect the division of labor across individuals. Whether a set of tasks is organized within one or multiple firms depends on the extent to which individuals specialize. While the particular trade-offs these theories emphasize differ from each other, together they represent a departure from the earlier literature: there is far less emphasis on specificity and far greater emphasis on issues related to the division of labor such as specialization and job design. This class of theories is important because it has the potential to explain firms' boundaries in a wide range of contexts where specificity is unlikely to have an important effect on individuals' incentives.

2.2.6 Theory of core competencies

Focus, aim, unit of analysis. According to Prahalad and Hamel (1990), core competencies are the collective learning in the organization, especially how to coordinate diverse production skills and integrate multiple streams of technologies. Since core competence is about harmonizing streams of technology, it is also about the organization of work and the delivery of value. The force of core competence is felt as decisively in services as in manufacturing. Core competence does not diminish with use. Unlike physical assets, which do deteriorate over time, competencies are enhanced as they are applied and shared. But competencies still need to be nurtured and protected; knowledge fades if it is not used. Competencies are the glue that binds existing businesses. They are also the engines for new business development. At least three tests can be applied to identify core competencies in a company. First, a core competence provides potential access to a wide variety of markets. Second, a core competence should make a significant contribution to the perceived customer benefits of the end product. Finally, a core competence should be difficult for competitors to imitate. The tangible link between identified core competencies and end products is what Prahalad and Hamel (1990) call core products — the embodiments of one or more core competencies. Core products are the components or subassemblies that actually contribute to the value of the end products. Core competences are sometimes called firm-specific competence, resource deployments, invisible assets and distinctive competences.

Quinn (1999) argues that core competencies are not products or “those things we do relatively well.” They are those activities, usually intellectually based service activities or systems, that the company performs better than any other enterprise. They are the sets of skills and systems that a company does at best-in-the-world levels and through which a company creates uniquely high value for customers. Developing best-in-the-world capabilities is crucial in designing a core competency strategy. Unless the company is

best-in-the-world at an activity it is someone else's core competency. The company gives up competitive edge by not buying that skill from a best-in-the-world source. Activities which are none-core should be outsourced to best-in-world suppliers.

Contribution to the understanding of IT outsourcing. Core competencies theory suggests activities should be performed either in-house or by suppliers. Activities, which are not core competencies, should be considered for outsourcing with best-in-world suppliers. Some non-core activities may have to be retained in house if they are part of a defensive posture to protect competitive advantage. Employees in non-core functions (even if not facing outsourcing) may feel excluded by the organization because they are a non-dominant discipline. An organization may view IT itself as a core competence. It seems that most successful companies have a good understanding of IT's potential. However, some organizations outsource IT even though they see IT as core and delivering competitive advantage. This may be because IT can be considered core at the corporate level, but some of its aspects, at lower levels, might be commodities. Thus the complexity of IT, and its (at least in part) core nature, may make the contracting out of IT a particularly challenging exercise. The ability to define IT requirements and to monitor their delivery by third parties may be some of the core IT competencies that any organization must have if it is to outsource IT successfully. It can even be argued that the very acts of specifying and managing supply contracts can themselves give competitive advantage. It is critical that client organizations are able to define their needs and manage services from their vendors.

Since most supplier markets are imperfect, Quinn and Hilmer (1994) recommended that managers must answer three key questions about any activity considered for outsourcing. First, what is the potential for obtaining competitive advantage in this activity, taking account of transaction costs? Second, what is the potential vulnerability that could arise from market failure if the activity is outsourced? Third, what can we do to alleviate our vulnerability by structuring arrangements with suppliers to provide appropriate controls yet provide for necessary flexibilities in demand? When the potentials for both competitive edge and strategic vulnerability are high, the company needs a high degree of control, usually entailing the activity internally or through joint ownership arrangements or tight long-term contracts.

The belief that outsourcing of IT is only appropriate when IT is not considered a core function of the firm's industry was not held by executives interviewed by McLellan, Marcolin, and Beamish (1995). Core activities were defined by a firm's management as those that provided the competitive capabilities that lead to competitive advantage. This definition implies that a core activity is central to the competitive nature of the industry. The executives involved in outsourcing relationships clearly viewed the IT function as cen-

tral to their competitiveness within the banking industry, yet the firms still choose to outsource much if not all of the IT activities.

Hancox and Hackney (2000) interviewed IT managers to find support for the core competencies theory in IT outsourcing. Contrary to vendors' marketing material and to much of the literature on IT outsourcing, concentration on core competencies did not appear to be a strong motive for IT outsourcing among the sample organizations. No organization from either private or public sector had systematically examined its activities to identify core and non-core functions. Most organizations seemed to share the view of IT as a mix of core and non-core activities.

2.2.7 Resource-based theory

Focus, aim, unit of analysis. The central tenet in resource-based theory is that unique organizational resources of both tangible and intangible nature are the real source of competitive advantage. With resource-based theory, organizations are viewed as a collection of resources that are heterogeneously distributed within and across industries. Accordingly, what makes the performance of an organization distinctive is the unique blend of the resources it possesses. A firm's resources include not only its physical assets such as plant and location but also its competencies. The ability to leverage distinctive internal and external competencies relative to environmental situations ultimately affects the performance of the business. The resource-based theory is a useful perspective in strategic management. Research on the competitive implications of such firm resources as knowledge, learning, culture, teamwork, and human capital, was given a significant boost by resource-based theory — a theory that indicated it was these kinds of resources that were most likely to be sources of sustainable competitive advantage for firms (Barney, 2001).

The essence of the resource-based theory of the firm lies in its emphasis on the internal resources available to the firm, rather than on the external opportunities and threats dictated by industry conditions. Firms are considered to be highly heterogeneous, and the bundles of resources available to each firm are different. This is both because firms have different initial resource endowments and because managerial decisions affect resource accumulation and the direction of firm growth as well as resource utilization (Løwendahl, 2000).

Firms' resource endowments, particularly intangible resources, are difficult to change except over the long term. For example, although human resources may be mobile to some extent, capabilities may not be valuable for all firms or even for their competitors. Some capabilities are based on firm-specific knowledge, and others are valuable when integrated with additional individ-

ual capabilities and specific firm resources. Therefore, intangible resources are more likely than tangible resources to produce a competitive advantage. In particular, intangible firm-specific resources, such as knowledge, allow firms to add value to incoming factors of production (Hitt, Bierman, Shumizu, & Kochhar, 2001).

Transformational outsourcing is an emerging practice to bring new capabilities to the organization. Resources are required to bring new capabilities, and resources bringing new capabilities can be found in an outsourcing vendor. In this context we apply the knowledge-based view of the firm that has established itself as an important perspective in strategic management. This perspective builds on the resource-based theory of the firm. According to the resource-based theory of the firm, performance differences across firms can be attributed to the variance in the firms' resources and capabilities. Resources that are valuable, unique, and difficult to imitate can provide the basis for firms' competitive advantages. In turn, these competitive advantages produce positive returns.

Contribution to the understanding of IT outsourcing. The value generation potential of an outsourcing relationship consists of three factors: client characteristics, the vendor-client relationship, and vendor characteristics. A key client characteristic is an understanding of how to manage resources that a firm does not own. A key in the vendor-client relationship is formal (contractual) aspect of the relationship. The third factor shaping the outsourcing value proposition is the vendor's own capabilities. From an outsourcing vendor's perspective, there are many potential opportunities and benefits for the client. These opportunities and benefits can be derived from the IT outsourcing vendor's value proposition. Important vendor characteristics include capabilities such as technical competence, understanding the customer's business, and relationship management. Levina and Ross (2003) stressed the importance of vendor characteristics in terms of the vendor value proposition. The concepts of complementarities and competencies explain that outsourcing vendors can increase productivity and reduce costs on client projects by applying a set of complementary application management competencies. They identified three complementary vendor competencies: IT personnel development, methodology development and dissemination, and customer relationship management.

Although it is generally accepted that IT is critical for information-intensive firms, not all members of top management teams attach the same degree of criticality to IT. Perceptions of the CIOs and CEOs of IT importance tend to be misaligned. While CIOs recognize IT as vital to an organization's strategy, CEOs with little background in IT tend to regard IS services as backroom operations, an expense to be controlled rather than a strategic investment to be capitalized. Generally, CEOs' perceptions of IT criticality are as

important as, if not more important than, those of the CIOs' with respect to IS sourcing decisions because IS investments represent a significant financial outlay for corporations. Sometimes management policies and direction of IT use are dictated by the CEOs' psychological involvement and participation in IS. Thus, we would expect that the greater the perceived criticality of IT to the firm, the less likely the firm will outsource its IS services (Ang, 1993).

2.2.8 Partnership and alliance theory

Focus, aim, unit of analysis. Alliances are broadly defined as collaborative efforts between two or more firms in which the firms pool their resources in an effort to achieve mutually compatible goals that they could not achieve easily alone. Resources here are defined as any tangible or intangible entity available for use by a firm to compete in its marketplace. When interfirm business relationships are collaborative, rather than adversarial in nature, a variety of types of these relationships may be classified as alliances, for example outsourcing.

According to Lambe, Spekman, and Hunt (2002), the popularity of alliances is growing. Alliances account for anywhere from 6 percent to 25 percent of the market value of the typical company. Yet, alliance success remains elusive. Studies find that as many as 70 percent of alliances are not successful. Thus, an important question for researchers and practicing managers is what makes alliances succeed? Lambe et al. argue that alliance competence contributes to alliance success, both directly and through acquisition and creation of resources. Using survey data gathered from 145 alliances, empirical tests provide support for the posited explanation of alliance success. Alliance competence has three facets, labeled alliance experience, alliance manager development capability and partner identification propensity. Furthermore, consistent with competence-based theory and resource-advantage theory conceptualizations of a competence (a higher order resource that is a distinct combination of lower order resources), the researchers proposed that these three facets are the three lower order resources that collectively comprise the higher order resource of an alliance competence. That is, more of each of these three lower order resources will contribute to increasing a firm's competence in finding, developing, and managing alliances. Alliance experience is a resource that can be leveraged across an organization because it contributes to knowledge about how to manage and use alliances. Alliance manager development capability enables firms to plan and navigate the mechanisms of an alliance so that roles and responsibilities are clearly articulated and agreed upon. In addition, these managers have the ability to review continually the fit of the alliance to the changing environment to make modifications as necessary. Partner identification propensity enables firms to system-

atically and proactively scan for and identify partners that have the complementary resources that are needed to develop a relationship portfolio or mix that complements existing competencies and enables them to occupy positions of competitive advantage.

Furthermore, Lambe et al. (2002) posited that two specific types of resources affect alliance success: idiosyncratic and complementary resources. In terms of resource-advantage theory, complementary resources may be thought of as lower order resources that are brought to the alliance and idiosyncratic resources as the higher order resources that are developed by the alliance through the process of combining the complementary resources of the partner firms. Idiosyncratic resources are resources that are developed during the life of the alliance, are unique to the alliance, and facilitate the combining of the distinct lower order resources contributed by the partner firms. Idiosyncratic resources may be tangible, such as computers and cables, or intangible, such as developing a methodology or a process together. Similarly, some researchers refer to idiosyncratic investments or assets.

Das and Teng (2002b) studied how alliance conditions change over the different stages of alliance development to understand the development processes of strategic alliances such as an IT outsourcing relationship. They defined three stages in the alliance development process — formation, operation, and outcome stage. In the formation stage partner firms approach each other and negotiate the alliance. Partner firms then carry out the agreement and set up the alliance by committing various types of resources. The alliance is initiated and put into operation. Alliances will be formed only under certain conditions. These conditions include a relatively high level of collective strengths, a low level of interpartner conflicts, and a high level of interdependencies. Not only is the formation stage directly influenced by alliance conditions, the transition from the formation stage to the operation stage is also dictated by the same alliance conditions variables. During the operation stage, partner firms collaborate and implement all agreements of the alliance. The alliance will likely grow rapidly in size during this stage, somewhat akin to the growth stage of organizational life cycles. Other than the growth route, an alliance may also be reformed and/or terminated at this stage. During the outcome stage, alliance performance becomes tangible and can, thus, be evaluated with some certainty. There are four possible outcomes for an alliance at this stage — stabilization, reformation, decline, and termination. A combination of outcomes is also possible, such as a termination after reformation. Alliance reformation and alliance termination do not necessarily signal alliance failure. Reformation and termination may be the best option under certain circumstances, such as the achievement of pre-set alliance objectives. Alliance condition variables continue to play a decisive role in

the outcome stage. The particular alliance outcome will depend on the condition of the alliance.

Das and Teng (2003) discussed partner analysis and alliance performance. An important stream of research in the alliance literature is about partner selection. It emphasizes the desirability of a match between the partners, mainly in terms of their resource profiles. The approach is consistent with the resource-based theory of the firm, which suggests that competitors are defined by their resources profiles. They found a lack of agreement concerning alliance performance. This lack of agreement reflects an underlying conceptual puzzle: what does effective alliance performance mean? There are two distinct loci of alliance performance in the literature: the alliance itself and the partners forming the alliance. On the one hand, when alliances are viewed as separate entities, alliance performance is the success of these separate entities — in terms of, say, profitability or growth rate. On the other hand, because partner firms use alliances to achieve certain strategic objectives, alliance performance ought to be measured in terms of the aggregated results for the partner firms.

Contribution to the understanding of IT outsourcing. Client and vendor companies may pool their resources to achieve mutually compatible goals. Partnership has frequently been noted as a major feature of IT outsourcing. Partnership can reduce the risk of inadequate contractual provision, which may be comforting for clients about to outsource a complex and high-cost activity such as IT. However, in the relationship between vendor and client the latter may be over dependent on the former, and goals are not necessarily shared. A client may be more comfortable if it knows the vendor already. In partner selection, cultural compatibility is vital and shared values and objectives inform all stages of the partnership development process.

Hancox and Hackney (2000) interviewed IT managers to find support for the partnership theory in IT outsourcing. They found that few organizations claim to be in a strategic partnership with their IT suppliers. Partnership was more likely to be claimed in the area of systems development, where vendors needed to have a greater understanding of the organization, than in outsourcing of operations and IT infrastructure support.

2.2.9 Relational exchange theory

Focus, aim, unit of analysis. Relational exchange is an interactive process where commitments are made, outcomes are observed, and further investments made, if outcomes meet or exceed expectations. Based on previous interactions as well as expectations about the future, a mutual orientation develops resulting in a common language and mutual knowledge. The exchange is embedded in a normative structure that determines the functioning

of the system. Patterns of behavior are taken for granted. The actors share common expectations about expected and accepted behavior, and collective interests are incorporated into the preferences and belief structures of the actors (Rokkan & Haugland, 2002).

Norms are important in relational exchange because they provide the governance rules of the game. These rules depend on the game, which from an exchange perspective has been described as either discrete or relational. Discrete exchange norms contain expectations about an individualistic or competitive interaction between exchange partners. The individual parties are expected to remain autonomous and pursue strategies aimed at the attainment of their individual goals. Pure discrete exchange is consistent with the underlying assumptions of neo-classical economic theory. In contrast, relational exchange norms are based on the expectation of mutuality of interest, essentially prescribing stewardship behavior, and are designed to enhance the well being of the relationship as a whole. In the evolutionary model of relational exchange, relational norm development takes place during an extended period of time through many interactions between the partners (Lambe, Spekman, & Hunt, 2000). According to this theory, the key to determining how efficiently contract governance is carried out lies in the relational norms between the transacting parties.

Many classifications of norms have been proposed, but no one is regarded as dominant. Heide and John (1992) have proposed that relational norms are a higher order construct consisting of three dimensions: flexibility, information exchange, and solidarity. Flexibility, defines a bilateral expectation of the willingness to make adaptations as circumstances change. Information exchange defines a bilateral expectation that parties will proactively provide information useful to the partner. Solidarity defines a bilateral expectation that a high value is placed on the relationship. It prescribes behaviors directed specifically towards relationship maintenance.

Norms create expectations of behavior and imply a certain action and are shared by the actors. It is believed that society shares a number of common norms that make it necessary for contracts to contain certain features but not necessary to include statements about others. Yet norms vary a great deal between and within societies as is illustrated by international contracts where a foreigner's requirements as to what should go into a contract will often surprise us, but what we would not consider necessary to include may surprise them. Artz and Brush (2000) examined supplier relationships that were governed by relational contracts, and they found support for the relational exchange theory. By altering the behavioral orientation of the alliance, relational norms lowered exchange costs.

Contribution to the understanding of IT outsourcing. Kern and Blois (2002) considered the role of norms within networks by describing how BP Exploration outsourced its information technology function. This outsourcing venture led to the formation of a consortium of vendors. However, this attempt was found to have failed. They suggested that central to the failure of the consortium was the issue of norms. In the case of BP Exploration, three problems arose. First, the consortium's members, though competitors, were expected to work closely with each other as the senior partner on some sites and as the junior partner on others. Yet neither BP Exploration nor any member of the consortium recognized in advance that the norms that they usually applied in their relationships with their clients would not be applicable to this situation. Consequently, their staff was working with norms that were at best not appropriate to the new situation and at worst made for difficulties. For example, a company's norms do not normally encourage the acceptance of flexibility, information exchange and solidarity in contacts with competitors, all of which are needed if sound relationships are to be developed between organizations. Second, BP Exploration's line managers conducted their relationships with the consortium members as if they were buying a commodity service. Yet a major reason for outsourcing was BP Exploration's desire to obtain a state of the art IT service. Its behavior towards the consortium was therefore based on norms that were inappropriate, relative to its stated objectives. The third problem was that one of the vendors was not familiar with European modes of operations and had a horrendous job trying to adapt to a non-US culture. Many factors led to BP Exploration being a less than successful experiment in outsourcing. However, a major contribution was a failure to recognize the need for establishing norms of behavior that were appropriate to the consortium form of organization (Kern & Blois, 2002).

2.2.10 Stakeholder theory

Focus, aim, unit of analysis. The stakeholder approach to strategic management was introduced by Freeman (1984). According to Freeman a stakeholder is any group or individual who can affect, or is affected by, the achievement of a corporation’s purpose. Stakeholders include employees, customers, suppliers, stockholders, banks, environmentalists, government and other groups who can help or hurt the corporation. For each category of stakeholder groups can be broken down into several useful smaller categories. Freeman’s focus was to show how executives could use the stakeholder approach to manage their organization more effectively. In instrumental stakeholder theory, the role of management is seen as achieving a balance between the interests of all stakeholders. For each major strategic issue we must think through the effects on a number of stakeholders, and therefore, we need processes that take into account the concerns of many groups. It is

argued that maintaining an appropriate balance between the interests of all stakeholder groups is the only way to ensure survival of the firm and the attainment of other performance goals. The normative condition is that managers must provide economic and other returns to stakeholders in order to continue engaging in wealth creating activities by virtue of the critical resources stakeholders provide to the firm.

Stakeholder theory is justified on the basis that firms have responsibilities to stakeholders for moral reasons, and that there is no priority of one set of interests over another. Upholding four principles: 1) honouring agreements, 2) avoiding lying, 3) respecting the autonomy of others, and 4) avoiding harm to others, are a necessary precondition for efficient working. And thus, stakeholder theories of the firm establish economic relationships within a general context of moral management. Contrary to the traditional understanding of the principal-agent relationship used in several IT outsourcing studies, a stakeholder orientation will include at least two new dimensions: 1) a number of stakeholder groups, and 2) the interpretation of the four moral principles that underlie stakeholder theory. Neglecting these dimensions, firms will have less satisfied stakeholders, and will show financial performance that is consistently below industry average (Shankman, 1999).

According to Phillips, Freeman, and Wicks (2003), it is commonly asserted that the stakeholder theory implies that all stakeholders must be treated equally irrespective of the fact that some obviously contribute more than others to the organization. Prescriptions of equality have been inferred from discussions of balancing stakeholder interests and are in direct conflict with the advice of some experts on organizational design and reward systems. However, corporations should attempt to distribute the benefits of their activities as equally as possible among stakeholders in light of their respective contributions, costs, and risks. This interpretation of balance is called meritocracy, where benefits are distributed on the basis of relative contribution to the organization.

Stakeholder theory is a managerial conception of organizational strategy and ethics. The central idea is that an organization's success is dependent on how well it manages the relationships with key groups such as customers, employees, suppliers, communities, financiers, and others that can affect the realization of its purpose. The manager's job is to keep the support of all of these groups, balancing their interests, while making the organization a place where stakeholder interests can be maximized over time. The identification of stakeholder groups is currently among the central debates in the scholarly and popular press (Freeman & Phillips, 2002).

Contribution to the understanding of IT outsourcing. Lacity and Willcocks (2000a) define a stakeholder as a group of people with aligned interests. The

term is widely used and accepted by IT outsourcing practitioners and researchers. However, as indicated by some of the reviewed literature above, a stakeholder is defined and used differently in finance (issue of CEO responsibility to shareholders or stakeholders), law (requires ownership), and gaming (person who holds the bets). According to Lacity and Willcocks (2000a), there are four distinct client IT stakeholder groups and three distinct vendor IT stakeholder groups. The groups identified are client senior business managers, client senior IT managers, client IT staff, client IT users, and vendor senior managers, vendor account managers, vendor IT staff. An additional group is the subcontractors. All stakeholder groups are presumed to have significant differences in expectations and goals regarding IT outsourcing. Thus, it is reasonable to propose that upholding the interest of these different stakeholder groups with the principles of moral management will affect the success of IT outsourcing.

2.2.11 Social exchange theory

Focus, aim, unit of analysis. Social exchange theory was initially developed to examine interpersonal exchanges that are not purely economic. Several sociologists are responsible for the early development of this theory. These theorists view people's social behavior in terms of exchanges of resources. The need for social exchange is created by the scarcity of resources, prompting actors to engage one another to obtain valuable inputs. Social exchange can be defined as voluntary actions of individuals who are motivated by return they are expected to bring and typically, in fact, bring from others. Social exchange can be viewed as an ongoing reciprocal process in which actions are contingent on rewarding reactions from others. There are important differences between social exchanges and economic exchanges. Social exchanges may or may not involve extrinsic benefits with objective economic value. In contrast to economic exchanges, the benefits from social exchanges often are not contracted explicitly, and it is voluntary to provide benefits. As a result, exchange partners are uncertain as to whether they will receive benefits. Thus social exchange theory focuses on the social relations among the actors that shape the exchange of resources and benefits. While its origins are at the individual level, social exchange theory has been extended to organizational and interorganizational levels (Das & Teng, 2002a).

Social exchange theory postulates that exchange interactions involve economic and/or social outcomes. Over time, each party in the exchange relationship compares the social and economic outcomes from these interactions to those that are available from exchange alternatives, which determines their dependence on the exchange relationship. Positive economic and social outcomes over time increase the partners' trust of each other and commitment to maintaining the exchange relationship. Positive exchange interac-

tions over time also produce relational exchange norms that govern the exchange partners' interactions. Implicit in these postulates, the four foundational premises of social exchange theory are: (1) exchange interactions result in economic and/or social outcomes, (2) these outcomes are compared over time to other exchange alternatives to determine dependence on the exchange relationship, (3) positive outcomes over time increase firms' trust of their trading partner(s) and their commitment to the exchange relationship, and (4) positive exchange interactions over time produce relational exchange norms that govern the exchange relationship (Lambe, Wittmann, & Spekman, 2001).

Contribution to the understanding of IT outsourcing. Commitment is a widely used construct in social exchange research. It has been defined as an exchange partner believing that an ongoing relationship with another is so important as to warrant maximum efforts at maintaining it; that is, the committed party believes the relationship is worth working on to ensure that it endures indefinitely. Satisfaction with the exchange relationship is an often-used variable in social exchange research. Satisfaction can be defined in terms of performance satisfaction, which is the level in which a transaction meets the expectations of the partners including product and non-product attributes. Satisfaction can result from evaluating all aspects of a working relationship. Satisfaction/dissatisfaction is a state reflecting a feeling of being rewarded adequately or inadequately for contributions to the relationship. Satisfaction can be the overall approval of an outsourcing arrangement. Satisfaction has been used in research as an operationalization of the success of the exchange relationship. According to social exchange theory, satisfaction plays an integral role in relationships. Firms, who receive benefits that meet or exceed their expectations and are equal to or superior to outcomes available from alternatives, are likely to maintain and expand the relationship. Satisfaction serves as a measure of a firm's view of the outcomes of the relationship. While it may not capture a partner's estimation of available alternatives, it does provide insight into a relationship's overall performance (Lambe et al., 2001).

2.3 Addressing the research questions

The two research questions presented in chapter 1 are addressing: (1) how transplants' role stress affects their work outcome, and (2) potential predictors of transplants' role stress. Below, the organization and management theories presented are applied according to how they address the research questions.

Stakeholder theory recognizes the importance of balancing interests of all stakeholder groups. Upholding the principles of moral management will affect outsourcing success. One important stakeholder group in IT outsourc-

ing is IT workers transferred from client to vendor organization, and who offer services back to their original employer for a service fee. The importance of *transplants* of IT outsourcing is also recognized by several other theories. For example, in transaction cost theory and contractual theory, the transfer of human capital or human assets is recognized as a part of the outsourcing arrangement. As these theories have transaction and contract as their unit of analysis, transplants are not their major concern. Despite this, transaction-specific assets, such as human capital, may shift the balance of power between the transaction parties as they are transferred. Reviewing IT outsourcing based research (see Appendix A) investigation on transplanted IT workers seems to be a white spot.

Agency theory recognizes that principal-agent relationships change as a consequence of outsourcing. Transplants get a new employer, a new principal, but they continue to serve their former employer, now as a contractor. Principals are claimed to reduce agent opportunism using outcome-based contracts. As a consequence the behavioral aspects are often left out, leaving transplants as contractors to fulfill service level agreements. As such, their roles change and occupational *stress* may occur.

Economic theories are addressing performance, such as high economic benefits, low transaction costs, effective contracts, good principal-agent cooperation, and efficient division of labor, but they are not directly addressing individual level *work outcome*. As such, transplants are not a primary concern of economic theories. This research will investigate how the individual transplant is affected by the IT outsourcing arrangement and how this affects individual work outcome.

Partnership and alliance theory and core competencies theory emphasize the importance of developing complementary core competencies. According to resource-based theory, outsourcing gives clients access to vendor resources. Organization of work and delivery of value are outsourcing characteristics which may influence transplants' perception of new roles. Relational norms are also recognized as one important environmental characteristic affecting individuals. Using social exchange theory, transplants will try to obtain positive economic and/or social outcomes.

Looking back at the sourcing universe presented in chapter 2.1, we see that transfer of assets, such as employees, is often an integral part of both IT and business process outsourcing. Business process outsourcing has not been a part of this study, but the issues of investigation may apply for outsourcing other business processes as well. In insourcing, transfer of employees is not an issue. For transformational outsourcing the clue is first of all to bring new capabilities to the organization seeking change. The outcome of the organizational change is not given. The primary driver for global outsourcing is

based on the comparative cost of labor. The researcher suggests that carefully crafted outsourcing strategies must take into account the unique position of transferred IT employees, and this will affect the overall performance of the relationship.

	Cost concerns					**Resource concerns**		**Partnership concerns**			
	Neo-Classical economic theory	*Transactions cost theory*	*Contractual theory*	*Agency theory*	*Theory of firm boundaries*	*Core competencies theory*	*Resource-based theory*	*Partnership and alliance theory*	*Relational exchange theory*	*Stakeholder theory*	*Social exchange theory*
Focus	Organization as a production function	Economic organization	Contract as a legally bound, institutional framework	Delegation of work	Determinants of firm boundaries	Firm-specific skills and know-how	Unique organizational resources of both tangible and intangible nature	Collaborative interfirm business relationships	Relational norms	Manage organizations more effectively	Social behavior
Aim	Profit maximization, obtained from economies of scale and scope	Governance structure; which transactions should be organized how	Facilitating exchange and preventing opportunism	Most efficient contract governing principal-agent relationship	Pursuing hierarchical control or market contracts	Organization of work and delivery of value	Leverage distinctive internal and external resources	Achievement of mutually compatible goals	Effective contract governance	Balancing interests of all stakeholders	Obtain positive economic and/or social outcomes
Unit	Company	Transaction	Contract	Contract	Company	Company	Company	Relationship	Relationship	Firm/ group/ individual	Individual/ organizational
Outsourcing philosophy	Outsource when marketplace can offer production cost savings	Firms take sourcing decisions to minimizes the sum of production and transaction costs	Contractual completeness reduces uncertainty and risk	Outcome based outsourcing contract reduces opportunism	Outsource if there are large markets for IT services available from vendors	Activities which are non-core should be outsourced to best-in-world suppliers	Outsourcing give client access to vendor resources	Pooling of resources to achieve mutually compatible goals	Collaborative actions can act to improve the client-vendor relationship	Upholding the principles of moral management will affect outsourcing success	Satisfaction is the overall approval of an outsourcing arrangement
Critical success factors	Integration and exploitation of IT services from vendor	Minimize settings in which opportunistic behavior is likely	Simultaneous use of contractual and cooperative mechanisms	Choosing a suitable agent, and monitoring the agent's work	Matching economic opportunities to individuals' efficiency	Define needs and manage services from vendor	Integrate and exploit strategic resources	Competence in finding, developing, and managing alliances	Develop and secure common norms	Efficient and effective communication with and between all stakeholders	Enable social and economic outcomes which outperform alternatives

Table 2.1. Comparison of theories.

3. Exploratory case studies

This chapter reports findings from three exploratory case studies. Exploratory case studies have been commonly cited as a part of a hypothesis-generating process (Glaser & Strauss, 1967) where the goal is to develop ideas for further study. This approach was selected in order to understand the inherent complexities and the underlying constructs of managing IT outsourcing relationships, and to debate the values of further investigating individual level behaviour, attitude, and performance.

The chapter is organized as follows. The first section describes the case study process. Then, in the second section, the three international IT outsourcing relationships are presented. In this section, practical issues of managing, such outsourcing relationships, are examined. By this the researcher obtained a rich understanding of the relationships studied. In the third section, different theoretical lenses were used in order to enhance the understanding of particular organizational and management issues of IT outsourcing. And finally, in section four there is a summary of findings and suggestions for further confirmatory research.

3.1 The case study process

According to Yin (2003), the case study is preferred in examining contemporary events and when the focus is on a contemporary phenomenon within some real-life context. The case study's unique strength is its ability to deal with a full variety of evidence, like documents, artifacts, interviews, and observations. For case studies, five components of research design are especially important: a study's questions, its propositions (if any), its unit(s) of analysis, the logic linking the data to the propositions, and the criteria for interpreting the findings (Yin, 2003, p. 21). In designing the case study, all these components have been dealt with, as described below.

In order to understand the inherent complexities and the underlying constructs of managing IT outsourcing relationships and the role of different stakeholders, empirical research was required. This exploratory case study had the following *guiding* research questions: 1) How do client and vendor organizations managing their IT outsourcing relationship? 2) How do different stakeholders influence, or get influenced by, the IT outsourcing relationship? As such, the unit of analysis was both the relationship (question 1) and the individual stakeholders (question 2). As the investigator's goal was to explore managerial and individual issues, rather than analytical generalization, no propositions were developed before the study.

The selection of cases was based on an instrumental approach, which means that the case study was carried out to provide insight into issue or refinement

of theory. "The case is of secondary interest; it plays a supportive role, facilitating our understanding of something else. The choice of case is made because it is expected to advance our understanding of that other interest" (Stake, 1994, p. 237). All three cases were selected for their paradigmatic characteristics in terms of their outsourcing undertaking. In other words, the cases were selected because, the ABB – IBM is a global one; the SAS – CSC contract belongs to one of the largest buy-outs in Europe; the Rolls-Royce – EDS contract is a mature one. All cases are unique, with global client companies from different industries, and all vendor companies are global service providers. In all three international based cases more than a thousand employees were transferred from client to vendor organizations. They provide a broad base of relationship practice, suggesting that a case in each company would be of interest and value to this research study.

Data collection was done through interviews, with questions addressing relationship management issues: enter and exit strategies, activities and phases, contract and contract management, governance structures and relationship management, personnel issues, and knowledge management, with a strong emphasis on what characteristics influenced IT outsourcing relationship. A certain group of questions were addressing individual stakeholder attitude, behavior, and performance. Thus, interviews were focused directly on case study topics. For each client-vendor outsourcing relationship, 2 – 3 interviewees were selected from each of the two parties. A total of 16 interviews were conducted, see Table 3.1 for type of interviewee.

Interviewee type	**Number of interviews**
Client senior managers	2
Client business managers	1
Client retained IT managers (CIO)	3
Client IT staff	3
Vendor senior manager	1
Vendor account managers	3
Vendor IT employees (transplants)	3
Total	16

Table 3.1. Interviewee type and number of interviews.

Client and vendor interview guides are presented in appendices B and C, respectively. The interviews were scheduled for 1 hour, but some lasted for 90 minutes. All interviewees were assured anonymity to promote openness. Interviews were personal meetings or held as telephone conferences. The exploratory case studies were conducted through July – September 2004. All interviews were tape-recorded and transcribed immediately afterwards.

Transcripts from the 16 interviews comprised 65,342 words and 108 pages of text. The analysis of each case was focused essentially on transcripts of the interviews, but to some extent on other materials made available to the researcher (e.g., presentations, internal reports, press releases, annual reports, the Internet). An abbreviation of each case was written and sent to a contact person of each participating company for approval. The individual cases serve only as the evidentiary base for the study and were used in a cross-case analysis. The purpose was not to portray any single one of the relationships. Rather, it was to synthesize the lessons learned from all of them, dispersed throughout separate cross-case issues.

3.2 Three international based IT outsourcing relationships

The case introduction in the first three subsections 0 – 3.2.3 has the purpose of presenting the outsourcing ventures and revealing company specific data from the discussions of the outsourcing relationships. The overview essentially outlines a brief description of the institution, the role and influence of IT, and the degree/extent of the outsourcing. Table 3.2 shows some characteristics of the IT outsourcing relationships studied.

In subsections 3.2.4 – 3.2.11 empirical data collected are put into cross-case issues of managing outsourcing relationships. These issues are enter strategies, phases and activities, contract development and management, transfer of IT employees, governance structures, outsourcing costs, retained skills, and exit strategies. This is done in order to get a rich representation of the cases studied, and to explain the complexity and variety of the arrangements.

Client company	Industry	Origin	Outsourced	Start of deal	Length of deal	Size of deal	No of people trans-ferred	Vendor company
Rolls-Royce	Power for civil aerospace, de-fence aerospace, marine and energy markets	UK	Infrastructure, application support and development	2000 (1996)	144 months	$2.1bn	1220	EDS
ABB	Power and automation technolo-gies	Switzer-land	Data centre, infrastructure, desktop	2003	120 months	$1.1bn	1200	IBM
Scandinavian Airlines	Air travel and airline related businesses	Nordic	Infrastructure management, application development and support	2003	60 months	$1.47bn	1150	CSC

Table 3.2. Characteristics of the IT outsourcing relationships studied.

3.2.1 A mature relationship

Rolls-Royce is a global power systems company providing power for land, sea and air, with leading positions in civil aerospace, defence, marine and energy markets. Rolls-Royce is also one of the most famous names in engineering throughout the world. The history of Rolls-Royce starts back in 1884, when Henry Royce and Charles Royce start to build, manufacture and sell quality cars. Success with the cars led to the formation of the Rolls-Royce Company in March 1906 and to the launch of the six-cylinder Silver Ghost, which, within a year, was hailed as "the best car in the world". At the start of the First World War, Charles Royce designed his first aero engine, used in the air war by the allies. Demand for the Merlin engine, which powered the Spitfire during the Second World War transformed Rolls-Royce from a relatively small company into a major contender in aero propulsion. Rolls-Royce entered the civil aviation market in 1953, and the company has become a major player within this market. In the 1980s and 1990s Rolls-Royce has been undergoing a number of mergers and acquisitions to create the only company in Britain capable of delivering power for use in air, at sea and on land (Rolls-Royce, 2004b).

Today, there are some 54,000 Rolls-Royce gas turbines in service and these generate a demand for high-value service throughout their operational life. Rolls-Royce is a technology leader, employing 35,200 employees and operating in 48 countries. Group turnover in 2003 ended at £ 5,645 million (Rolls-Royce, 2004a).

Until 1996 Rolls-Royce had its own information technology operation. The company was growing rapidly in the 1990s, and both IT costs and the number of IT employees were increasing dramatically. In the IT business, there was a change between large mainframes and green screens to GUI and clustered server environments. The company got to a point where they had to manage both environments. The, then, CIO did a study of the capability of the IT function. He had serious doubts about the in-house team's ability to handle the change, both on a capability and scale prospective. In addition, Rolls-Royce was strapped financially. They considered outsourcing as one way, at least in a short term, to help the company deliver its results. Rolls-Royce also needed a change agent. The company began to look outside for a partner to deal with those aspects.

The first outsourcing deal was done in 1996, and was renewed in 2000 for 12 more years. Rolls-Royce outsourced the basic operation of the complete infrastructure — the management of networks, data centers, servers, and so on. And they outsourced the application support for most of their major applications, and the application development function. What was kept was

development of internal software at the control level, such as control systems for jet engines. All major assets were transferred, like computers, software, and people. More than 1200 people were transferred from Rolls-Royce to Electronic Data Systems Corporation (EDS). As almost 90% of the IT budget goes with the outsourcer, we may regard this as a total outsourcing. Total outsourcing transfers IT assets, leases, staff and management responsibility for delivery of IT services from internal IT function to a third-party vendor, which represents at least 80 percent of the IT budget (Lacity et al., 1996). The intention was to put a long-term agreement in place, and to build a close relationship.

In the early years, after the initial outsourcing, Rolls-Royce kept very little competence in-house. But they realized that was unhelpful, because it created naivety on their side and created a degree of frustration on the outsourcer's side. This was later corrected and now they have senior people with experience in managing outsourcers. The central staff, doing information technology, covers the architecture, the oversight of projects, and the management of service levels. Today, Rolls-Royce has around 30,000 computer users, and a lot of the staff are using ERP systems.

In 1999, when Rolls-Royce acquired Vickers (now Rolls-Royce Commercial Marine) the company got a strong in-house IT group with more than 70 professionals. This group provided operational IT services for more than 3200 people at 50 locations worldwide. A memorandum of understanding was signed in 2000, between Rolls-Royce and EDS, to evaluate outsourcing of this group. The process was stopped, concluding that outsourcing was not profitable for Rolls-Royce. The in-house IT group of Rolls-Royce Commercial Marine was a self-efficient group with very significant geographic boundaries, located in Norway, and serving small business units primarily in Norway, Sweden, and Finland. They had just over 10% of the overall IT budget. They were kept in-house for two reasons. First of all, they were not in the natural environment for an outsourcer. And second, maintaining a complete vertical capability in IT was healthy in a CIO perspective. It was possible to build on that group to bring services back in-house, and they provided Rolls-Royce with direct cost comparison versus the outsourcer.

3.2.2 The largest buy-out in Europe 2003

The SAS Group serves northern Europe with air travel and airline related businesses. SAS' parent companies were founded in Denmark (1918), Sweden (1924), and Norway (1927). Scandinavian Airlines System (SAS) was founded August 1, 1946, to co-ordinate flights from Scandinavia to the USA. They have more than half a century of aviation experience. SAS airline companies are flying to more than 80 major destinations in Scandinavia and

in Europe. In addition, there are also flights to the United States and to Asia (Scandinavian Airlines System, 2004a).

Through partnership in Star Alliance, the SAS Group can offer a worldwide network covering a total of 673 airports in 127 countries. Today, the SAS Group is Europe's 4th largest airline group, carrying more than 31 million passengers in 2003. The SAS Group 2003 revenue was Skr 58,000 million employing more than 33,000 people in five business areas — Scandinavian Airlines, Subsidiary & Affiliated Airlines, Airline Support Businesses, Airline Related Businesses, and Hotels (Scandinavian Airlines System, 2004b).

SAS started a huge cost reduction program called "turn around 2005", due to the state of the airline market after September 11, 2001. The group looked at all kinds of costs, including IT costs. The goal was to reduce IT costs significantly within a few years, partly by reducing costs directly and partly by exchanging old legacy systems with new standardized ones. Scandinavian IT Group (SIG) was sold out of Airline Related Business during the forth quarter of 2003, and the SAS Group entered into an IT outsourcing agreement with Computer Science Corporation (CSC). Under the terms of the contract, CSC provides IT consulting, systems integration, application development and maintenance, and IT infrastructure services for mission-critical SAS business needs, including booking and ticket reservation systems, ticket-free travel technologies, self-service check-in, flight maintenance and cargo control systems. All SAS destination airports were included in the services of the outsourcing deal, as they were previously serviced by SIG.

3.2.3 A global deal

The history of ABB goes back to the late nineteenth century, and is a long and illustrious record of innovation and technological leadership in many industries. Elektriska Aktiebolaget was established in Stockholm in 1883 as manufacturers of electrical lighting and generators. Some years later in 1990 a merger founded Allmänna Svenska Elektriska Aktiebolaget (Asea). In the beginning of 1900, Asea played a major role in the electrification of Swedish industry, railways and homes. They expanded their business internationally and in the 1980s Asea was one of the top ten companies in the world in power technologies. In 1986, the year prior to its merger with Brown, Boveri & Cie, Asea had revenues of Skr 46 billion, and 71,000 employees (ABB Group, 2004a).

Brown, Boveri & Cie (BBC) was established in Baden, Switzerland, in 1891. Shortly afterwards, BBC was the first company to transmit high-voltage AC power. The company has since continued to invent a number of major new

technologies — like electrical machines in motors and generators, combustion gas turbines for generating electricity, locomotive technology, transformers and control systems. In 1986, the year prior to its merger with Asea, BBC had revenues of Skr 58 billion, and 97,000 employees worldwide (ABB Group, 2004a).

In 1988 Asea and BBC merged to form ABB (Asea Brown Boveri Ltd.), one of the largest electrical engineering companies in the world. A large-scale program of expansion resulted in several acquisitions in the following years. In 2002 ABB streamlined its divisional structure to focus on two core areas of business: power technologies and automation technologies. ABB sold its Financial Services division, its Oil, Gas & Petrochemicals division, and its Building Systems business area. A divestment program of non-core business continued in 2003. Today, ABB is a leader in power and automation technologies that enable utility and industry customers to improve performance while lowering environmental impact. The ABB Group of companies operates in around 100 countries and employs around 105,000 people. The parent company is located in Switzerland. ABB Group revenues for 2003 ended at $18.8 billion (ABB Group, 2004b).

By July 28, 2003, ABB and IBM had signed a ten-year agreement to outsource close to 90 percent of ABB's information systems infrastructure operations — including the transfer to IBM of more than 1,200 employees. The agreement was valued at US$ 1.1 billion and built on a well-established relationship between the two companies. The contract was part of ABB's strategy to focus on its core industrial businesses and would help ABB significantly reduce costs over the period. Combined with pilot contracts signed in the fourth quarter of 2001 for approximately US$ 600 million the full value of the relationship approached US$ 1.7 billion over ten years. IBM Global Services took responsibility for the operation and support of information technology infrastructure in 14 countries in Europe and North America — representing some 90 percent of ABB's information technology infrastructure. The deal included taking over the management of servers, operating systems, and corporate networks, personal computers, and help desks. Control systems within power and automation technologies were regarded as a part of ABB's core business, and were kept in-house. The company had several laboratories developing such industrial IT solutions. Industrial IT solutions enabled ABB customers to manage their installations better and to link up in real time with their own suppliers and customers. Standard applications, such as ERP systems, were not a part of the outsourcing deal.

3.2.4 Enter strategies

Rolls-Royce did a capability study previous to the outsourcing. It may be regarded as a strategy process. Although none of the interviewees used the

term “enter strategy” for what was happening at that point in time: the decision to outsource was regarded as a strategic decision. None of the interviewees were involved in the capability study, as this was done many years ago, and before the interviewees entered the companies. The strategic issues told to be underlying the outsourcing decision were costs, capabilities, and the need for a change agent. Rolls-Royce wanted a 10% reduction in IT costs. The criteria that were presented for vendor selection were pretty clear: around maximum service levels, being able to handle large, skilled contracts of that size, and also pretty clear around costs. EDS had generally been competitive on costs, and they demonstrated that they could provide capability for large scale contracts. Rolls-Royce doubted they had necessary in-house capabilities to do the required step change from managing large mainframe systems to GUI based client-server systems. A change, which was believed to require both human capabilities and financial capabilities to succeed. Rolls-Royce was looking for a company they might discuss as the change agent, a company somewhat different to themselves. They were not looking for a traditional outsourcer, but a very service oriented company. A major transformation seemed to be a part of the plan, a transformation of Rolls-Royce from a manufacturing oriented company to a service oriented company. The culture that EDS was bringing was part of what Rolls-Royce was looking for; a service oriented, global, and people oriented company.

SAS outsourced for three main reasons. First, they wanted to benefit from economies of scale offered by an external service provider and to realize corresponding cost reduction. Compared with other airliners, the cost and efficiency of their internal IT group were far too high. Second, they wanted to lift their existing technologies to new platforms and replace their old legacy systems with standard application in order to establish a more cost-effective platform. And third, they wanted to offer the employees in their internal IT group better development opportunities for their professional careers. Information technology was the core competence of CSC, but it was not at the core of the airliner. SIG management group and their Chairman of the Board took the initiative to start the process.

> We were in financial pressure, our bankers pushed the outsourcing forward. (Client IT Manager)

Global IT management at ABB started to develop a strategy document before the outsourcing, which later was signed by senior management. It was never an outsourcing strategy, but a strategy for how to achieve a number of aims. It was at the time when ABB had strong financial difficulties. Because of this, cost reduction was a significant aim to achieve, and was a factor provoking outsourcing. One of the things the CIO did, was to use a lot of

time assuring that the countries in ABB were aligned to the outsourcing project. The starting point was a strategy document, but it ended up as a pure cost case, affected by external environment. During the last few years ABB had been through several organizational changes. Focusing on two core business areas, power and automation technologies, they sold away other business. But, remaining internal functions were huge and inflexible. Simultaneously, the requirements from business unit areas were full transparency regarding IT. ABB's financial difficulties at that time and their restructuring around two core business areas pushed the IT outsourcing.

3.2.5 Phases and activities

Six relationship phases of IT outsourcing are defined as scooping, evaluation, negotiation, transition, middle, and mature phase (Lacity & Willcocks, 2000a). These phases are discussed in this section as they were recognized at the three international based IT outsourcing relationships studied.

Prior to the outsourcing, Rolls-Royce did a capability study of the company's IT function, identifying core competence and activities. The capability study raised doubts about the in-house IT function's ability to handle the challenges of the company. This was the scooping phase, establishing a goal or vision for the outsourcing. Evaluation and negotiation phases were limited in a time perspective. Rolls-Royce went through a very standard procurement process of defining all the pieces that needed to be outsourced, defining what was required, and then inviting bids to the standard request for proposal. All the big external outsourcing vendors were involved in the bidding. The first contract with EDS, the one for the aero business, was negotiated in 1996. The second contract for the industrial business was signed in 1997. The goal of these phases was first to select the best vendor and then to sign the contract. In the transition phase the major goal of the two parties was to establish agreed upon operational performance. After the contract was signed, there was a "honeymoon period," during which the outsourcer gave Rolls-Royce "anything." The outsourcer put a new desktop on, because it was more efficient and because they had got the know-how to standardize. The users got lucky; they got something quick and fashionable, and faster than what the IT department could deliver. All major IT assets and more than a thousand people got transferred to the outsourcer. As service levels were established, the parties moved into the improvement phase, where the overall goal was to achieve value-added services above operational performance. The IT department thought they had got a partner they could manage and control. Problems arose when Rolls-Royce started to add new services and remove old services from the original contract. Rolls-Royce had to pay extra for everything, and the parties had to refer to the contract, and they started quarrelling. Rolls-Royce merged the aero business and the industrial

business, and in 2000 they had to realign the contracts to reflect changes in technology, services, and business. The original contracts were made a "foot" thick. Then in 2000, they tried to make it a trusted one, and they actually went to buy services. It was widely reported in the press that it was a 1.3 billion pound deal over 12 years. When the relationship was extended, the mature phase provided an opportunity for the two parties to learn from past experiences as well as to explore creative options when constructing the new deal.

In the scooping phase, SAS used business, economic and technical criteria to identify potentials for outsourcing. As a part of the company's huge cost reduction program, the group looked at all kinds of costs, including IT costs. SIG was at that point of time already a stand-alone company, wholly owned by its largest customer, SAS. The management of SIG looked at different scenarios for survival; one of them was to sell the company to an external service provider. This way SIG could continue to serve its largest customer, and with possibilities of gaining large-scale opportunities, and access IT capabilities. SIG management meant an outsourcer would be a better place for SIG employees. Thus they made a suggestion for their board of directors to sell the company. Selective outsourcing was also considered, but they concluded it would require too much management attention. The objective of the evaluation phase was to select the best and final offer. The SAS board of directors decided in August 2003, to start the process of selling SIG and to establish a frame agreement for buy-back of services. First step was to develop an information memorandum describing SAS' IT governance structure, including a description of SIG as a company in terms of economic conditions, assets, and management. An investment banker was also chosen, a short time after the decision, who handled the formalities of the bidding process. Several vendors signed the confidentiality statement and they received the information memorandum. A few vendors delivered a non-binding bid. All the Nordic vendors quit, first of all because of the size of the deal. The steering committee decided which four vendors should be invited to give binding-bids. One of the invited vendors quit and one of them was later removed from the list. SAS started negotiation with two vendors. Important evaluation criteria were economy, financial strength and perseverance of partner, sensitivity to SAS' proposed conditions, and handling of SIG personnel. By December 18, 2004, the outsourcing agreement between SAS and CSC was signed. Due to the fact that SIG was a stand-alone company, they were delivering services to SAS on already established agreements, and thus the evaluation and negotiation phases could be done in a relatively short period of time. The outsourcing deal was partly a take-over, and partly a buy-back of services. Technically the transition of shares took place at February 1, 2004. And by this transaction, SAS were transferring IT

assets, leases, staff, and management responsibility for delivery of services from an internal IT function to a third-party vendor. About 1100 employees got CSC as a new employer. Intellectual property rights for business applications were kept in SAS. As SAS had already been treating SIG as an external supplier, the scope, costs, levels and responsibilities of the baseline services were already established, but of course some changes were made during negotiation. Later, there was some disagreement around contractual interpretations, but no serious problems. And thus, the objective of the transition phase, to establish operational performance, was going relatively straightforward. Transforming SIG into CSC's global operating model was, however, a huge program involving a lot of people from the vendor organization. Although operational performance was not affected, the internal focus of the transformation period took focus away from value-added services.

In the scooping phase, ABB identified IT activities for potential outsourcing. Although ABB global senior IT management set forth to create a strategic vision of IT in the company, the IT sourcing decisions ended up as a business decision. As the overall organizational goal was to cut costs, there was also a pressure for significant cost reduction within IT. And a few months later, close to 90% of ABB's information technology infrastructure operations were outsourced to IBM, including more than 1200 employees in 14 different countries. In the evaluation phase a few potential suppliers were invited to bid for the infrastructure operations. There were not many service providers that could deliver services to a large number of locations in many different countries. ABB were aiming for competition, but one service provider after the other dropped out. In ABB's opinion one service provider was not capable of delivering the required services at that time, and they were also not focused sufficiently hard on cost reduction. They were disqualified. Another one declined to bid, because they didn't believe their chances of success were high enough to justify the investment in bid time and quest. A third one was interested in making the investment and attempt to win the business, but they needed to know ABB as an organization. Due to the very difficult financial situation in ABB, it was difficult for senior executives to spend time with the service provider. Consequently they lost the third one. ABB already had a long lasting relationship with IBM. A pilot outsourcing to IBM in Sweden and India twelve months before was at that time going reasonably well. And thus, IBM was selected as the best and final offer. Negotiation was done in two major areas. The first element was the core contract, which was the core service specification. This was negotiated and developed centrally by a global team. The other element was that the ABB countries negotiated their own versions of the contract, underlying the core documents. During the local negotiations, changes to the standard documents were kept at a minimum. This was done to obtain economies of scale. One

basic country contract was negotiated globally, with very small country variations. Global sign-off of the agreement was done July 28, 2003. Country agreements were signed locally. Transfer of responsibilities took place in September 2003. It was a ten-year contract helping ABB significantly reduce costs. In the transition phase, the main focus was to establish agreed upon operational performance, including consolidation, rationalization, and standardization of infrastructure. Another important issue was to establish a post-contract management infrastructure and processes. A relationship alignment project between the ABB team and IBM team was set up to take care of this.

3.2.6 Contract development and management

In the original outsourcing agreement between Rolls-Royce and EDS, assets were transferred, and services bought back through two different contracts, one for the aero and one for the industrial business. In 2000 these two contracts were merged into one contract. During the time that Rolls-Royce had been in the arrangement, services had been taken away and new services were added. The result was that the outsourcing contract had been more complicated. In the beginning, the two contracts were arrangements around capability and scale. What they were doing in 2000 was to organize the new contract around services that could be provided. The new structure was an overall master services contract, and then services were grained and managed in so called towers — e.g., data centers, networks, application support. Having had a period where they spent a lot of time arguing around interpretations of contractual clauses, Rolls-Royce and EDS had reached the point where they hardly used the contract in the day-to-day operations. The two parties understood each other's goals. If there were changes required in the contract, then they instructed the lawyers to make them. Rolls-Royce had an IT procurement team, a dozen people who were part of the central procurement unit, but had a functional accountability to the IT community. These people did follow-up on the commercial part of the contract.

Concurrent to asking for binding bid, SAS sent contractual suggestions to potential vendors, and they asked for remarks on suggested contractual conditions. The previously contractual relationship between SAS and SIG served as a base for the new outsourcing contracts. Reviewing both binding bids and contractual comments was a learning process for both client and vendor, as they learned more about each other and the services to be delivered. All information around systems solutions — e.g., source codes, costs, and service levels — was accessible for bidders in certain "data rooms." SAS were well prepared in the contractual negotiations as they used both internal and external expertise, e.g., lawyers, purchasers, and financial experts. The contract was structured in four parts. First there was an overall Master Service Agreement, which lay out the length of the relationship,

minimum level of services for the five year agreement, and options for extending the agreement. Then there was a Share Purchase Agreement, which regulated the sale of shares, price of shares, balance sheets, bonds, pensions, etc. Subsequently there was a Transition Agreement describing activities tied to the transfer of assets, e.g., transferring of IT employees, facilities, hardware, and software licenses. This agreement lasted for six months, and then all major transition activities were finished. Finally, there was a Frame Agreement, which laid out terms and conditions for buy-back of services. This agreement was a traditional service agreement deal with service description, service levels, prices, conditions, templates, etc. The deal was a five-year contract, starting February 1, 2004, with options for extension. CSC must make an effort to get SAS to provoke the option. On the other hand SAS had the freedom to evaluate the quality of services delivered and to pick a new supplier without being locked for a too long period of time. There had been some contractual interpretation issues, especially concerning price and service clauses. But these issues had been handled successfully of by the relationship steering committee, in which both parties were represented. Each business unit in SAS was responsible for its own use of IT services and its own costs, and thus they had a business relationship with CSC. Contract managers at CIO's staff did contractual follow-up at corporate level.

> Both parties had accepted the agreement, but they also tried to get the maximum out of situations where contractual clauses opened up for interpretations. (Vendor Account Manager)

At ABB, core contract documents were negotiated globally, because the service provider could only leverage economies of scale if there were some similarities in the environment. The global teams also negotiated one basic country contract, which was used in the local negotiations, e.g., between ABB Norway and IBM Norway. Statement of work was negotiated globally. Country adjustments contained local supplements and further details where needed. Responsibility for country agreements was distributed, but supported with expertise from the global team. Each contract had several exhibits and schedules. Exhibits included, e.g., form of country agreement, country agreement, and country adjustment. There were several schedules — e.g., acquired assets, employees, facilities, software, transition, service recipients, charges, governance, security, business continuity, exit management, subcontractors, and service measurements. The two parties were trying to verify as much as possible, and "nothing" should be left to coincidence. It was a very complex contractual set up, with one global agreement and 14 separate country agreements operating under it, and there were some very complex linkages. It was really a global agreement, meaning that the country agree-

ments did not operate independently. If IBM, for example defaulted in one country, consequently ABB had the right to terminate in that country, and then they had the right to terminate in all countries participating in the agreement.

3.2.7 Transfer of IT employees

A thousand people in the aero deal, and an around 200 people in the industrial business deal, were transferred from Rolls-Royce to EDS during 1996 – 1997. The jobs were transferred to the outsourcer, and the terms and the conditions were transferred for a period. This was done in the context of a project, where the services and the management of the services were moved across in about six months. The standard process in accordance with British law was followed. Less than half of those original individuals transferred were still involved in service deliveries to Rolls-Royce. EDS had a normal turnover rate, and they moved people around in projects. There were people no longer interacting with Rolls-Royce, and there were people who had skills that were useful serving Rolls-Royce. Transfer of people in an outsourcing agreement was an issue that EDS as a company had to be very good at. This was stated as the number one risk of an outsourcer. The ability to take over the people, keep some of them on the account, and give the others opportunities to move elsewhere, was emphasized as fundamental for the outsourcer. Another issue stated as critical, was the ability for a client to understand the skills to be retained: ”You won’t necessarily find the management skills to manage outsourcers within a client organization, because (by definition) they have not done that before within their internal IT.” Certainly an IT director, who had previously run an IT department, might not always be the right person to run an outsourcing arrangement. Rolls-Royce realized it was difficult to run an outsourcer, and it was very different in terms of skills.

The top management of the SAS Group handled the sales process of the shares, while the management group of SIG had to handle their employees. As this was a friendly take over, there were no immediate changes for the employees. All conditions of employment were carried on. About 1100 people were transferred from the SAS Group as CSC took over SIG businesses. The employees of SIG were informed about the process, the necessity of the take over, and they got an understanding there was no other way to keep SIG together. During the process, employees did not know the name of the bidders, but of course there were some rumors. Top management of SIG and the labor union were involved, but lower level employees and mid-level managers were not. The employees were loyal to their management and to the process, and they understood the reason why. Regardless of that, there was some frustration and the situation stressed them. The sales process did not

last for more than six months, but the transformation continued when SIG was taken over by CSC. Job insecurity was obviously an issue, because some places there were double sets of managers and functions.

> We joined a collective job application, without knowing to whom we applied and without any opportunity to influence. (Transferred IT Employee)

As a consequence of the outsourcing, more than 1200 employees were transferred from ABB to IBM. Around 510 of these were transferred under the Sweden and India pilots, and the rest were transferred in September 2003. Because of the global deal, each country had to follow its local laws for transfer of people. ABB countries had to handle the transfer separately, involving human resource managers, labor unions, employees, and information, according to local laws. In Norway for example, 35 people had to change employer. It was a process where nobody quit or got fired as a consequence of the outsourcing. IBM had experience taking over people and they had a procedure for how to handle the following transformation. Old organizational structures among transferred people were broken down, and the employees were replaced into IBM according to their competencies. This meant new managers, new colleagues, and to some extent new clients to support. According to a project executive of ABB, the quality of the technical people who were transferred to IBM was generally high; "A number of them had, even in a short period, done extremely well at IBM."

3.2.8 Governance structures

Rolls-Royce had a small corporate staff doing information technology and that covered the architecture, the oversight of projects, and the management of service levels. And they were relatively senior people. Rolls-Royce owned the project management overall, and they also owned the IT architecture. They had an IT procurement team that was part of the procurement unit, but had a functional accountability to the IT community. There was a tight top management relationship between the two parties. The CIO of Rolls-Royce met EDS' board members once a year for a couple of days, where they discussed the progress of the contract and the overall relationship in a formal sense. Rolls-Royce also had a "hot line," where the CIO could pick up the phone and get straight through to the CEO of EDS, if something was disastrous. There were regular monthly meetings between the CIO of Rolls-Royce and those that oversaw the accounts of EDS. One of them was account manager and the other was responsible for all the projects and all the services. In addition to that, there were a number of meetings. There were commercial review boards, the review on expenditure, and there were ser-

vice review boards that managed the quality of the services against the service level and the individual performance of the projects. Where the services were provided directly to Rolls-Royce lines of business, the IT head in the businesses would work out what was needed for the business and would communicate that back to the central IT unit, which in turn brought this back to EDS. Thus, the lines of business had a stake holding in defining the standards. However, managing the services was done centrally. When EDS were attempting to manage all the services and interact with all the business divisions, it actually got quite complicated and expensive in terms of manpower. So, the management of the services on a day-to-day basis took place from Rolls-Royce centrally with experienced service management teams.

Rolls-Royce had more than 70 IT employees in an in-house team in the Commercial Marine business, and this team was a self-efficient group mainly serving their own division. But the in-house team was also involved in some of the central projects, and thus they cooperated with EDS to some extent. Rolls-Royce had a benchmarking process built into the contract where they could take the services to a third party to benchmark against other companies. However, they had found that to be unsatisfactory, because it was very difficult to compare like with like, apples with apples. The in-house IT department kept in the Commercial Marine division gave a value assurance, in the sense that they knew the costs having their own people to do the services, which gave Rolls-Royce an opportunity to measure that against the outsourcer.

In the SAS – CSC case, a steering committee was established for an overall governance of the relationship. The committee had three members from SAS and two members from CSC. From the client side, participants were the CIO, the vice president of the airline business, and the manager of IT purchasing. From the vendor side, participants were the account executive and the operations manager. There were also established some functional groups reporting to the steering committee, and they were working with standardization, security, etc. Each business unit in SAS had a relationship with CSC as the responsibility for IT services and costs were delegated to the consumers of IT services.

At ABB they realized that outsourcing relationships might be extremely dynamic, which was one of the reasons why they tried to develop a contract and a governance approach to these contracts that itself was dynamic. As a client manager at ABB stated: “Within ten years ABB will be a different company than it is today, and so will technology.” A real challenge was to develop a contract and a relationship to satisfy a violent cost reduction environment, but also at the same time to serve a business expansion environment. Despite this, the governance model put in place was rather simple. Basically it was local meetings with global escalating. Each country was

responsible for their operations (service levels) and their financials. Take Norway as an example; there were two meetings each week between ABB and IBM. First, there was the operational meeting, where technical personnel met. And second, there was the commercial meeting, where project executives met. The intention of the deal was that everything was to be solved locally. Each month every country reported its costs to headquarters. And once a month there was the project executive meeting, either by phone or physically, where all the country executives participated.

3.2.9 Outsourcing costs

Due to their financial conditions, Rolls-Royce was looking for a 10% reduction of IT costs. But the strategic issues underlying the outsourcing decision were also internal IT capabilities, and the need for a change agent. Due to fact that the decision was made a long time ago, and none of the interviewees were involved in the decision-making process, it was difficult to state what criteria were the most important. A large company such as Rolls-Royce can (to some extent) generate economies of scale and scope internally by reproducing methods of vendors. And thus, defining outsourcing simply in terms of procurements activities seems not to capture the true strategic discussion of the Rolls-Royce IT outsourcing. What Rolls-Royce had done, on the premises of managing information technology services from the board perspectives, was to look at their total IT costs as a percentage of sales. They were moving with EDS towards being at least as competitive as the best of competitors in terms of low costs as a percentage of sales. The two parties were attempting to drive operational costs as low as they could, to open up for new investments spent at the highest possible level.

In the SAS – CSC case it was obvious that IT costs was an important issue. Benchmarking of SIG showed that costs were far too high. Enquiring the market of IT services, bidders showed that SAS could benefit from economies of scale by outsourcing IT to an external service provider. In neoclassical economic theories, outsourcing may be regarded as the substitution of external purchase for internal activities and an initiation of procurement from outside suppliers (Gilley & Rasheed, 2000). By selling SIG and buying services back, the outsourcing reduced SAS' involvement in successive stages of production, and thus the outsourcing might be viewed as vertical disintegration. SAS had estimated a turnover of around Skr 10 billion in the five-year period of the outsourcing deal. They had gained a 20% cost reduction, partly taken up-front as a share price, and partly negotiated through lower service prices. SAS had estimated its total IT budget to be decreasing year by year for the time period 2004 – 2008. For each year in the deal, SAS had committed a level of IT purchase from CSC. The committed level could be a composite of different services, defined in the Frame Agreement by

service descriptions, levels, and prices, or it could be new projects and services as well. By the end of each year all services bought from all the different lines of business in SAS were counted. If the total level of services did not exceed the committed level, an additional fee was calculated. There were, however, several mechanisms regulating what was inside the deal and what was outside the deal, and how to transfer services between years.

> This long-term deal allows us to significantly take down costs, while benefiting from vendors global expertise. (Client CFO)

There is no doubt ABB had a very strong focus on reducing IT costs. They invited the largest outsourcers in the world to bid for their information technology infrastructure. The scope was defined and the goal was to obtain economies of scale. Neo-classical economic theory suggests that all IT functions, which an external vendor can operate at lower costs than the company, should be outsourced. Selecting IBM as vendor, ABB would obtain better cost-performance of their IT infrastructure. Whatever service IBM provided under the contract, they were committed to provide competitiveness compared to the market. The ABB – IBM contract contained a basic volume for each of the ten years. For each year there was an estimate of the number of users, and with defined decreasing unit prices. By the agreed upon decrease in unit prices, ABB had already pocketed the cost savings.

3.2.10 Retained skills

When the initial outsourcing took place, Rolls-Royce kept very few skills in-house. They realized that was unhelpful, because it created naivety on Rolls-Royce's side and created a degree of frustration on the outsourcer side. Rolls-Royce had to rebuild a team with very experienced IT outsourcing managers. Teams were built around managing the services and the projects, and managing the procurement activities. Rolls-Royce found that the best way of arriving at a strong relationship with the outsourcer was to have people who deeply understood the business; meaning, to be an intelligent buyer you need to understand your own business. Rolls-Royce realized that they needed to keep knowledge about the business processes and how they were built up, which included the applications and their architecture. They had to rebuild that knowledge in-house — overall architecture skills, solution architecture skills, contract management skills, strategic management skills, and skills to manage top-down governance.

> Failure to set up retained IT management is probably one of the key success crushers. We have a lot of problems with it, and the outsourcer does not feel it is on their span of influence, because you can-

> not yet tell the client how you should be managed. It requires a lot of trust to do that. (Vendor Account Manager)

The top management decision of SAS was to sell SIG, and not to touch other IT communities in the SAS Group. In this way the transfer of SIG could be handled clean and fast. Corporate IT, the CIO's staff, was a small group of people. They had gradually built management capacity, contract management skills, and service level management skills. They had the responsibility for the Frame Agreements with SIG for several years, being more professional and market oriented year by year. SAS kept around 300 IT employees in the airline businesses, ground handling, and technical services. As an example, the common function Airline IT was a competence center focusing on airline business applications. They had the necessary resources to manage and follow-up services, analyze new requirements, and to purchase from CSC. The Airline IT organization had more than 100 employees. This kind of common function was not expected to be very numerous in the future. As the vendor organization was expected to be more professional, SAS would continue to professionalize itself as a buyer of business application services.

The ABB countries were locally responsible for their country agreements, and they had the responsibility for operations management, contract management, and for their business applications, which were not outsourced. ABB kept in-house senior sourcing managers following up the commercial and economic sides of the deal, and they also kept operational managers following up service levels. Globally there was a small group of people handling the global deal.

3.2.11 Exit strategies

Rolls-Royce had an exit strategy, because of the length and size of the contract. These plans already existed, the resources were already identified, and the major activities were all in place. In the context of commitment to the board, the CIO was the risk owner. He reported up to an overall risk committee. Directors in the company had the responsibility to identify all major risks in the business, and to have plans in place to both contain them when they occur and to avoid them happening. Exit strategies were important both from a risk perspective and from a performance failure perspective.

In the SAS – CSC deal there were agreed upon termination clauses which, to a certain level, described rules and procedures for termination. In the Transition Agreement there were identified activities, which should refine the operational description of the parties' obligations if termination occurs. SAS were discussing possible exit scenarios, any they had started to work with an exit strategy.

The global deal of ABB – IBM had a schedule called Exit Management, where termination clauses were defined as the two parties' rights and obligations in case of exit. The bottom line of the schedule was the costs of quitting. For each year there were defined costs, sinking as the years go by. If several countries used the termination clause, this would release a global renegotiation. Beyond the economic clauses of termination, there had not yet been developed exit plans.

3.3 Evaluating the IT outsourcing relationships

This section will use the analytical framework presented in chapter 2 for evaluating the case study IT outsourcing relationships. These different theoretical lenses are used to enhance the understanding of the relationships on topics such as: high economic benefits, low transaction costs, effective contracts, good principal-agent cooperation, efficient division of labor, development of skills and capabilities, access to vendor resources, alliance performance, social and economic exchange, and balancing stakeholder interest. Of course the researcher is omnipresent in the description, but the theoretical lenses give room for different positions or opinions.

In this form of writing case studies the focus is on interaction between multiple voices (Van der Blonk, 2003). The empirical case material is not approached as a neutral collection of facts, but as an ongoing outcome of the interaction between the diverse actors and events. The chapter is, in this sense, the result of a complex construction of influences and interpretations, and where the researcher's own voice is not the least important one.

3.3.1 Production costs reduction

According to neo-classical economic theory, firms outsource IT to attain cost advantages from assumed economies of scale and scope possessed by vendors (Ang & Straub, 1998). Neo-classical economic theory regards every business organization as a production function (Williamson, 2000), and where their motivation is driven by profit maximization. This means that companies offer products and services to the market where they have a cost or production advantage. They rely on the marketplace where they have disadvantages. According to neo-classical economic theory, companies will justify their sourcing strategy based on evaluating possibilities for production cost savings. Thus, the question whether to outsource, is a question whether the marketplace can produce products and services at a lower price than internal production. In the context of IT outsourcing, a company will keep its IT function internally if this has production cost advantages, and it will outsource when the marketplace can offer production cost savings.

In all three cases, an important driver of outsourcing was cost reduction. Rolls-Royce was looking for a 10% reduction of costs. In the SAS – CSC case it was obvious that IT costs was an important issue. Bidders showed that SAS could obtain a 20% cost reduction, benefiting from economies of scale by outsourcing IT to an external service provider. There was no doubt ABB had a very strong focus on reducing IT costs. They invited the largest outsourcers in the world to bid for their information technology infrastructure. The scope was defined and the goal was to obtain economies of scale. As stated by ABB's CFO: "This long-term deal allows us to significantly take down costs, while benefiting from IBM's global expertise." *(Source: press release of July 2003).* Client companies reported reduction of costs, better cost-performance, economies of scale and scope, compared to internal IT function. Selecting global outsourcing vendors, the client companies could obtain better cost-performance of their IT functions.

Principles of neo-classical economic theory were recognized in the decision making process of outsourcing. Client companies outsourced their IT function to gain IT cost savings. The IT function, including IT assets such as employees, was nothing but a production function, which an external service provider could handle more effectively than the client company. As such, the only concern of the client company was costs of services, and they were handling responsibility of transferred employees to the vendor company. For the purpose of this study we notice that neo-classical economic theory does not pay very much attention to the human side of IT outsourcing.

3.3.2 Transaction cost reduction

IT outsourcing causes additional costs to occur that are labeled transaction costs. Transaction costs occur in the exchange between client and vendor. According to transaction cost theory, transaction costs are positively associated with (1) the necessity of investments in durable, specific assets, (2) infrequency of transacting, (3) task complexity and uncertainty, (4) difficulty in measuring task performance; and (5) independencies with other transactions. Organizations choose to source via their own hierarchy or via the market based on relative costs, which has two components: production costs and transactions costs. In every IT outsourcing transactions costs are present in terms of effort, time and money incurred in searching, creating, negotiation, monitoring, and enforcing service contracts between client and vendor. Therefore, transactions costs can erode comparative advantages in production costs of vendors.

Rolls-Royce had no doubt discovered the costs of service and contract management. By outsourcing, Rolls-Royce had transferred to EDS, physical IT assets and almost all resources with IT competencies. What they later realize was that they had a problem understanding what the vendor was doing, what

technology and what costs were reasonable. Business needs were of course developing, and these needs had consequences for technology and costs. Rolls-Royce's contract managers were not able to understand and control the development within a complex information technology and business environment. And thus, they had to build strong teams around services and projects, procurement activities, and knowledge about business processes and applications. ABB seemed to be aware of the complexity of their global deal, and they had got management teams with both operational and sourcing expertise locally and globally. Although transaction costs were significant in all three cases, production cost differences seemed to be more influential in the sourcing decision than transaction cost differences.

Case studies recognized human capital as a transaction-specific asset. Vendor investments in human and physical assets may have shifted the balance of power between the transaction participants. Transplants of IT outsourcing may contribute to reduction of uncertainties of the outsourcing arrangement. As transplants already know clients infrastructure and systems and how they support client business processes, transplants are able to deliver the required services although they have a new employer. But transplants may also be exposed to vendor opportunism and bounded rationality. As transplants learn to know demands and obligations from both client and vendor, it is not unlikely they may feel occupational stress.

3.3.3 Contract completeness

When entering an IT outsourcing arrangement, vendor and client sign a contract. An outsourcing contract provides a legally bound, institutional framework in which each party's rights, duties, and responsibilities are codified and the goals, policies, and strategies underlying the arrangement are specified. Every outsourcing contract has the purpose of facilitating exchange and preventing opportunism. A complete outsourcing contract reduces uncertainty and risks, but a contract alone is insufficient to guide outsourcing evolution and performance. Luo (2002) argues that contract and cooperation are not substitutes, but complements in relation to performance. Since outsourcing involves repeated inter-organizational exchanges that become socially embedded over time, cooperation is an important safeguard mechanism mitigating external and internal hazards and overcoming adaptive limits of contracts.

The original Rolls-Royce – EDS contract was made a "foot thick," but still they started quarreling. The ABB – IBM outsourcing relationship was based on a complex contractual set up, with both global and local agreements, and complex linkages between them. Although they had tried to cover "everything," contractual completeness was Utopia. For example in Norway there had been more than 80 contractual changes or supplements within the first

year of the deal. Because of environmental dynamism, contract and contract governance also had to be dynamic. ABB and IBM had recognized the need to manage the relationship professionally, and a relationship alignment project was the enabler for supporting the contractual and commercial relationship between the two parties. SAS and CSC had a professional attitude developing the outsourcing contract. A skilled team from SAS met a special European business development team from CSC. The contract was more complex and comprehensive than any previous deal between SAS and SIG. Despite this, the steering committee with representatives from both parties of the relationship had several times been forced to handle disagreements regarding interpretation of contractual terms.

Transfer of physical and human assets from client to vendor was a part of the outsourcing relationships studied. Typically, the outsourcing contracts were outcome based, specifying service levels of infrastructure and information systems. The contracts were set up to take care of the transactions between the parties (sales and lease back). Human assets were typically IT employees transferred from client to vendor, and which continued to deliver services back to their prior employer. Transplants were an important part of the sale of assets agreement, but they were only an indirect part of the lease back agreement. Transplants became "invisible" as behavioral aspects were left out of the contract. As such, an incomplete contract may bring about ambiguity and raise the likelihood of conflict, which in turn will decrease the outsourcing performance.

3.3.4 Vendor behavioral control

In an outsourcing relationship, the cooperating parties engage in an agency relationship defined as a contract under which one organization (the principal) engages another organization (the agent) to perform some service on its behalf which involves delegating some decision-making authority to the agent. Agency theory describes the relationship between the two parties. According to Eisenhardt (1985), agency theory is concerned with resolving two problems that can occur in agency relationships. The first is the agency problem that arises when the desires or goals of the principal and agent conflict, and it is difficult or expensive for the principal to verify what the agent is actually doing. The second is the problem of risk sharing that arises when the principal and agent have different risk preferences (Gonzales, Gasco, & Liopis, 2005). These problems are well known in IT outsourcing. An example might be that the client organization wants to reduce its costs, while the vendor organization wants to maximize profits.

The initial outsourcing contract between Rolls-Royce and EDS had a lack of transparency, which was a potential for mistrust. When something was going wrong the contract played an important role. The contract was reviewed in

2000, and the parties were putting a new long-term arrangement in place and built a pretty close relationship. A high degree of transparency of difficulties like finance, should remove mistrust. In both cases ABB – IBM and SAS – CSC, the parties agreed upon the service levels and their prices. As outsourcing contracts were outcome based, client companies were not intended to do behavioral control of vendors or their IT employees

Before outsourcing, from a principal-agent perspective, client organization was principal and transplants served as agents in the same organization. After the outsourcing, relationships changed. Transplants were no longer agents of the client organization, but they became agents of a new principal, the vendor organization. The vendor organization contracted its services to client organization and operated as an agent of the client organization. Transplants became contractors to the client organization, and they were only indirectly agents of their former employer. As such, transplants of IT outsourcing must adopt new attitudes towards their previous principal (client organization), their new principal (vendor organization), and towards the outsourcing arrangement (where they serve as contractor).

Ho et al. (2003) examined client managerial attitudes and expectations toward transplants in IT spin-off arrangements. Specifically, they focused on the phenomenon of persistent client managerial expectations by exploring the conditions under which client managerial expectations persist and the effect on client managerial evaluation of transplant performance. They 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.

3.3.5 Demarcation of labor

Firm boundaries — defined as the scope of revenue-sharing arrangements across individuals — reflect trade-offs associated with referral problems, which are problems of matching economic opportunities to individuals' efficiency (Garicano & Hubbard, 2003). A large theoretical literature focuses on the question, "What determines firms' boundaries?" In our case of IT outsourcing, firms' boundaries are determined by the extent to which there are large markets for specialization. If there are large markets for IT services available from vendors, then a client company will tend to outsource more of its internal IT function.

In the case of SAS, one of the arguments for outsourcing was that the internal IT Group had better development opportunities for their professional careers at an outsourcer. During the transformation program, employees were replaced according to their competencies. In the case of ABB, IT em-

ployees were transferred into IBM according to their competencies. Outsourcing information technology infrastructure and the people operating it, ABB and IBM obtained a clear and unambiguous division of labor. The idea was that individuals transferred to IBM would increase their efficiency through specialization, and this would benefit ABB through cost reduction. EDS stated that the ability to take over people, keeping some of them at the account, and giving others the opportunity to move elsewhere (specialize), is the number one risk of an outsourcer.

One of the oldest ideas in economics is that returns to specialization increase with market size. If there are large markets for IT services available from vendors, then a client company will tend to outsource more of its internal IT function. In our case of IT outsourcing, firms' boundaries were determined by the extent to which there were large markets for specialization. As IT workers get transferred to vendors they have an opportunity to become even more specialized, working for an IT service provider.

3.3.6 Core competence management

After outsourcing, the client organization will typically focus on and strengthen its core competencies. Core competencies can be defined as the skills that are the determinant resources for a firm's competitive advantage. Quinn (1999) argues that core competencies are not products or "those things we do relatively well." They are the set of skills and systems that a company does at best-in-the-world levels and through which a company creates uniquely high value for customers. According to the theory of core competencies, developing best-in-the-world capabilities is crucial in designing a core competency strategy. Long-term advantage will depend on identifying the next unique combination no one else is exploiting in the marketplace; however, sustainable competitive advantage is strongest if tied to firm-specific capabilities.

In case studies, production cost reduction was not the only reasons for outsourcing. New business strategies and restructuring of client companies were also important drivers. ABB was restructuring around two core business areas, and SAS admitted that information technology was not at the core of the airliner. Core competencies theory suggests activities which are none-core should be considered for outsourcing with best-in-the-world suppliers. ABB's and SAS' outsourcing vendors, IBM and CSC respectively, are large IT service companies with information technology and systems as their core competence. Client managers interviewed in case studies expected their vendor organizations to influence transplants' work outcome. They expected transplants to become more professional service providers.

According to Levina and Ross (2003), client and vendor should develop complementary core competencies. A vendor's efficiency is based on the economic benefits derived from the ability to develop a complementary set of core competencies. This ability, in turn, is based on the centralization of decision rights, and shared with clients through formal and informal relationship management structures. An outsourcing vendor must develop different competencies, as suggested by Levina and Ross: IT personnel development, methodology development and dissemination, and customer relationship management. As such, the role of transplants may change as they get transferred from client to vendor.

3.3.7 Vendor resource exploitation

With resource-based theory, organizations are viewed as a collection of resources that are heterogeneously distributed within and across industries. The value generation potential from vendor resources can be significant for the client. If the vendor has strategic resources, applications of these resources for the client can provide the client organization with sustained competitive advantage. Strategic resources are characterized by being valuable, rare, non-imitable, non-transferable, non-substitutable, combinable, and exploitable (Barney, 2002) .

The ability to handle technological change was reported as a major issue for outsourcing, as both Rolls-Royce and SAS had a challenge, handling cost reduction and new technologies at the same time. According to resource-based theory, outsourcing is a strategic decision that can be used to fill gaps in the firm's IS resources and capabilities. In the case of Rolls-Royce and SAS, there was a difference between desired capabilities and actual capabilities. Both companies needed external resources to implement the required technological changes.

But the transplants also represented an important resource in the outsourcing arrangements. A unique combination of transplants, infrastructure and systems, were required to secure the delivery of services from vendor back to client company. In the short-term, the vendor company needed the transplants to do infrastructure operation and management, and systems development and support. For the client company, the transplants served as a safeguard for the delivery of services. And thus, transplants work outcome affects the success of the relationship.

Interesting to notice, the transforming of Rolls-Royce from a manufacturing oriented company to a service oriented company, seemed to be a part of the plan. According to Linder (2004), vendor resources can be brought to the organization to facilitate rapid organizational change, which might be important for long-term survival of the client. In this specific case of Rolls-Royce,

the vendor's ability to do change agentry was an important criterion for vendor selection. EDS were engaged for IS/IT outsourcing and for transformational outsourcing.

3.3.8 Alliance exploitation

Partnership, often referred to as an alliance, has frequently been noted as a major feature of IT outsourcing. Alliances are broadly defined as collaborative efforts between two or more firms in which the firms cooperate in an effort to achieve mutually compatible goals that they could not achieve easily alone (Koh et al., 2004).

The outsourcing arrangement studied was based on tightly defined contracts, and where the main goals were not necessarily shared. For example, ABB had a contract that locked in their cost savings. IBM, on their side, had to balance profit with customer satisfaction, and internal business control. The IT outsourcing relationship seemed to be an arm's length cooperative relationship, rather than one of strategic partnership. ABB needs IBM to provide the IT infrastructure service; IBM needs ABB to pay the fee. While it is clear that these goals are not shared, each party has a vested interest in the other's success. This type of cooperative relationships manifests itself when goals are complementary, and when each party needs something from the other party to succeed (Lacity & Willcocks, 2000a).

According to Lambe et al. (2002), competence in finding, developing, and managing alliances is recognized as important to alliance success. This will also apply for an IT outsourcing relationship. Relationship managers are higher order resources, who must develop their understanding of how to facilitate the combining of the distinct lower order complementary resources contributed by the outsourcing parties. Transplants of IT outsourcing had competencies which client organization no longer posited. IT assets were transferred from client to vendor organization, and transplants had unique skills and know-how to operate, maintain, and support information technology and systems service delivery back to the client organization. As a result of the outsourcing arrangement, the client organization no longer had these competencies in-house. Thus, it is reasonable to state that transplants contribute to distinctive client — vendor complementary resources. Transplants' competencies may be considered as vital for service delivery in the outsourcing arrangement, especially in the first phase after contract signing. For the client organization, transplants may contribute to reduction of uncertainty and improve the communication between vendor and client organization. For the vendor organization, transplants may secure the ability to fulfill contract agreements.

3.3.9 Relationship exploitation

According to relational exchange theory, a partnership is dependent on relational norms. Norms are expectations about behavior that are at least partially shared by a group of decision makers. Norms are important in relational exchange because they provide the governance rules of the game. Relational norms are based on the expectation of mutuality of interest, essentially prescribing stewardship behavior, and are designed to enhance the wellbeing of the relationship as a whole (Lambe et al., 2000). Kern and Blois (2002) have studied norm development in a major IT outsourcing relationship. Their findings suggest: 1) where unusual organizational structure is proposed, management must recognize the possibility that norms dominant within the constituent organizations will not necessarily be compatible, 2) where norms are not compatible the action must be taken through changing management schemes in order to develop appropriate norms, and 3) the development and initialization of new norms takes time. Norm development becomes more salient as the relationship matures.

The relationship alignment project of ABB and IBM is one example of development of new norms. The project was seen as a key success factor to create and maintain a good working relationship between the two parties. The objective of the project was (among others) to create a framework to manage the natural tension between both parties, to find an agreement on a vision of how the parties needed to work together, to build a strong working relationship between the teams in the various countries, to build and commit to an appropriate strategic relationship structure and enabling mechanisms, to support a group-wide collaborative approach, to review and refine roles & responsibilities, and to align across all countries.

Businesses recognize the impossibility of a contract meeting every eventuality so that there is a need for adaptability within a contract and the completion of a contract is frequently dependent upon workers being able to take up a lot of the uncertainty. Both the normal economic models of a market transaction and the legal model of a contract tend to obscure the degree to which large numbers of contracts are agreements to deliver an indefinite good or service for an indefinite price. Without such willingness to be adaptable many business relationships would grind rapidly and regularly to a halt. Norms are in a sense the lubricants that keep relationships from being stymied by their contractual terms (Kern & Blois, 2002). In case studies, outsourcing contracts were outcome based, measuring agreed upon levels of specified services for an agreed upon price. Transplants of IT outsourcing were the contractors to deliver the services. They were the employees ultimately faced with uncertainty of indefinite services. Developing and securing relational norms will guide transplants with regard to how to behave if and when exchange issues occur. Prescribed behavior shared by the parties

will reduce transplants' uncertainty of their new role. And thus, relational norm will supplement the outcome-based contractual agreements and benefit the relationship as a whole.

3.3.10 Social exchange exploitation

Social exchange theory assumes self-interested actors who transact with other self-interested actors to accomplish individual goals that they cannot achieve alone. Self-interest and interdependence are central properties of social exchange. Two or more actors, each of whom has something of value to the other, decide whether to exchange and in what amounts. Thus, a critical success factor becomes the enabling of social and economic outcomes that outperform alternatives. This applies both at individual level and inter-organizational level. Outsourcing may have a negative impact on employees' sense of job security and loyalty. Barthélemy (2003b) defined overlooking personnel issues as a deadly sin of outsourcing. Meaning, there is more to outsourcing than transferring people and renegotiating their pay and benefits. Transplants of IT outsourcing not only change employer, but as a result their social network and outcome may also change.

3.3.11 Stakeholder management

The following stakeholder theory recommendations for successful IT outsourcing relationships are meant to create efficient and effective communication with and between stakeholders to secure continued support from all stakeholders, to balance their interests and to make the IT outsourcing arrangement such that all stakeholders achieve their goals. During the case studies several stakeholder groups were identified — client senior management, client business management, client retained IT management, client IT users, transferred IT employees (transplants), vendor senior management, vendor account management, and vendor IT employees — each group with its own expectations and goals.

- *Client senior management* was driven by the overall financial goals of their companies, and typically their main interest was to gain economic benefits from the outsourcing. As contracts were signed, senior managers lost their interest in the outsourcing relationship.
- *Client business management* was constantly seeking more efficient IT services. They expected better service quality at lower prices, and a professional client-vendor relationship. Business managers also expected the vendor to be innovative, coming up with new solutions. After all, vendor was a world-class outsourcing company.
- *Client retained IT management* initially expected the same service levels and the same accessibility to their service provider as prior to

outsourcing. Their experience was however a more formal and commercial relationship. Running an IT outsourcer was very different from running an internal IT department, different in terms of skills and emphasis. Senior project executives, sourcing managers, and operations managers were first of all responsible for systems and infrastructure service delivery, and to secure commercial and contractual agreements.

- *Client IT users* typically expected better IT services. But very soon they realized that a professional service provider required a more formalistic interaction. Taking away a lot of legacy and non-standard IT from the users, the outsourcer had to be careful not to make a bad name for itself.
- *IT employees transferred from client to vendor (transplants*) represented a huge group in all three cases. First they were doing business as usual, but after some time they got redeployed into competencies and they got new colleagues. The transition of employees from the internal IT department to the global business of the outsourcer was an important issue, as some employees liked it and others did not. Some looked forward to work as an IT professional within an organization where IT was core competence.
- *Vendor senior management* was driven by growth and profit expectations. Thus, the initial analysis up-front (due-diligence) was fundamental. Their investments in such deals were huge, and their number one priority was on safeguarding their investments.
- *Vendor account management* had to balance profit, customer satisfaction, and business control procedures.
- *Vendor IT employees* were those people doing the job (sometimes called factory or delivery unit). Their mission was to deliver agreed upon service levels, neither more, nor less. To some extent they were involved up-front to see how easy the transferred IT department could be built into their own factory.
- *Third party suppliers* had more or less no influence in the process. Some of them regarded the outsourcing as a threat because it reduced their turnover; others saw it as an opportunity as they got more sales. Regardless of that, they had to spend time transferring leases and licences from one company to the other.

Some other stakeholder groups were also identified, such as vendor transition groups, labor unions, and even client customers. In one organization, a vendor transition group was established having a standardize process for

transition, and they were HR oriented types of people. Labor unions were representatives for the IT employees, but they also represented a power base in themselves, which they would like to maintain. Client customers were also mentioned as a stakeholder group. Although they could not influence the process, some of the consequences might hit them.

These stakeholder groups are different from those identified by Lacity and Willcocks (2000a) at one important point: interviewees recognize and emphasized the important group of transplants. In all three cases the transplant group counted more than 1000 people. Transplants were not recognized in the study of Lacity and Willcocks (2000a). Another interesting observation was that the interviewees seemed to be aware of other stakeholders' expectations and goals. Transplants were a necessary precondition for the success of the deal. And thus, their contribution must be seen in the light of costs and risks. This requires efficient and effective communication with and between stakeholders. Neglecting the moral principles that underlie stakeholder theory, vendor companies will have less satisfied transplants, and transplants will show performance that is consistently below industry average. Vendor (and client) organizations have responsibilities to transplants for moral reasons. Upholding moral principles is a necessary precondition for transplants' efficient working.

3.4 Summary and recommendations for confirmatory research

This chapter presented and discussed three paradigmatic case studies that broadly span the most common outsourcing arrangements in today's industry. They were conducted to investigated the outsourcing relationship, its development, and configuration, and investigated how individuals affect or get affected by the relationship. The rich qualitative data illustrated the complexities inherent to relationship management, revealing in particular the difficulties different stakeholders encountered.

3.4.1 Summary of findings

The three international based outsourcing cases studied in this research followed two guiding research questions, an interview protocol was designed and handed out before the interviews, and the analysis of each case focused essentially on transcripts of interviews. Regarding scientific generalization, the aim of the case studies was twofold: 1) to identify characteristics influencing and creating successful IT outsourcing relationships, and 2) to identify individual level attitude, behavior, and performance. The purpose of the qualitative phase of research was to obtain a richer description and understanding not only of how to manage successful IT outsourcing relationships, but also more specifically about individual level (transplant's) role stress, the

organizational context in which it occurs, and the consequences of role stress.

Two major themes emerged from the qualitative study. First, stakeholders interviewed emphasized the following issues as important in managing successful IT outsourcing relationships: clear enter strategies; relationship building activities important after contract signing; specialist resources needed for contract development and management; ability to handle transfer of IT employees is critical; establishment of new governance structures; the economy of outsourcing is not only production cost reduction; client skills have to be rebuilt to handle the outsourcer, establishment of exit strategies serve as a safeguard making the client able to handle difficult situations.

And second, stakeholders emphasized the unique position of the transplants. Occupational stress was recognized among transplants. That is, transplants perceived different expectations and demands from stakeholders they dealt with. The outsourcing arrangement stressors identified were such as client managerial persistent expectations, relational norms, and complementary core competencies. These stressors will be discussed in more detail in next chapters. Transplants interviewed reported different attitudes, behavior and task performance, and also different perception of occupational stress.

3.4.2 Judging the quality of the case studies

By the use of the conceptual model (as developed in chapter 2, Table 2.1) as a heuristic tool, a number of insightful pointers were elucidated, allowing the researcher to focus on particular elements of managing the relationship. These further demonstrate that the framework provides a good basis upon which to explore the outsourcing relationship. The analysis also identified the existence of a need to further investigate transplants' role stress. Based on Yin (2003, p. 34), the following tests should be conducted to judge the quality of the study:

- Construct validity: establishing correct operational measures for the concepts being studied. As the case studies were of exploratory nature, no operational measures were established. Despite this, the concepts were studied in three independent outsourcing relationships. For each single case study, a draft report was written and reviewed by key informants at each side of the relationship. From a methodological viewpoint, the corrections made through this process enhanced the accuracy of the case study, hence increasing the construct validity of the study. The cross case analysis presented in this chapter was based on single case study reports.
- Internal validity: establishing a causal relationship, whereby certain conditions are shown to lead to other conditions, as distinguished

from spurious relationships. During the exploratory case studies, the researcher was not concerned with making causal claims. Based on interviews and (to some extent) documentary evidence collected as part of the case study, the researcher "infers" that a transplant's perceived role stress resulted from factors in the outsourcing arrangement. And in turn, the researcher "infers" that a transplant's role stress resulted in lower task performance. But are the inferences correct? This is what is to be analyzed further in the next phase of research.

- External validity: establishing the domain to which the study's findings can be generalized. Using three independent case studies, the researcher has shown that the results are applicable to another neighborhood. Although no statistical generalization can be made, the researcher has tried to show analytical generalization. For example, a theory of transplants' role stress caused by the outsourcing arrangement was tested by replicating the findings in a second and a third case. The same results occurred, which indicated support for the theory.
- Reliability: demonstrating that the operations of a study, such as the data collection procedures, can be repeated with the same results. The researcher has documented the procedures followed such that other researchers can repeat the work. The case study protocol is documented in Appendix B and C. Thus, it is possible for others to repeat the researcher's procedures.

These four tests are considered relevant for judging the quality of a research design. For the exploratory part of this research, not all of them were fulfilled. Therefore, confirmatory research was needed to further investigate transplants' role stress and task performance in IT outsourcing relationships. In the next chapter hypotheses and research models are developed, followed by a methodological description of the survey.

4. Theory development and hypotheses

While exploring the transfer of IT workers from client to vendor organizations as an important issue of the outsourcing arrangement in previous chapter, this chapter will elaborate on individual level effects of outsourcing. As a consequence of outsourcing, this chapter proposes that transplants are likely to be exposed to occupational stress. Occupational stress will bring about ambiguity and raise the likelihood of conflict, which in turn will decrease the outsourcing performance. Hypotheses of role stress among transplants in IT outsourcing arrangements are elaborated.

In the first section, definitions and research from role theory are applied to the phenomenon of interest. In the second and third section, hypotheses of the influence of role stressors and environmental characteristics are proposed, respectively. Finally in this chapter, the last section synthesizes the research model.

4.1 Transplants' role stress

From the discipline of psychology researchers have found that the cost of unmanaged stress is nothing less than an increased risk of morbidity and mortality (Siegrist, 1998), and occupational stress represents a real threat to quality of life for employees (Danna & Griffin, 1999). Moreover, stress in the workplace represents a potential loss of talent for organizations as top performers disengage from work where occupational stress, its causes, symptoms and sequelae are prevalent (Cartwright, 2000). Interesting to notice, there has been very little outsourcing research at an individual level. Exploratory case studies, described in previous chapter, were indicating the existence of role stress among transplants of IT outsourcing.

Selye (1964) used the term "stress" to describe a set of physical and psychological responses to adverse conditions or influences. The term "stressor" was used to describe the external force or influencing act on the individual and "stress" to denote the resulting reaction. The influence of different role stressors on work outcomes is supported conceptually by the role episode model of Kahn and colleagues (1964), who suggest that (1) boundary spanners interact with different role senders in many episodes to obtain information, direction, and assistance; (2) role sender demands and expectations take the form of perceived stressors when an employee believes that there is conflict (e.g., among demands) and ambiguity (e.g., about expectations); (3) perceived stressors are influenced by a person's psychological, dispositional, and sociological characteristics; and (4) persistent stressors are likely to overwhelm the person's resources and thereby have a dysfunctional impact

on his or her behavioral and psychological job outcomes, e.g., task performance.

In this research, transplants of IT outsourcing are boundary spanners, interacting with different role senders, e.g., client managers, client IT users, vendor managers, and co-workers. As these role senders have very different positions in the outsourcing arrangement they are likely to have very different demands and expectations, which may stress the transplanted IT employees. Transplants might perceive role conflict as a consequence of different demands or role ambiguity as a consequence of different expectations. Transplants' perceived role stress is proposed to have dysfunctional impact on their task performance.

The potential negative effect of role stress has been recognized for some time. Research conducted by Rizzo, House, and Lirtzmann (1970), among others, suggests role ambiguity, and role conflict as linear negative antecedents to organizational outcomes. Role theory states that, when the behavior expected of an individual is inconsistent — one kind of role conflict — he/she will experience stress, become dissatisfied, and perform less effectively than if the expectations imposed on him/her did not conflict. Role conflict can therefore be seen as resulting from violation of the two classical principles and causing decreased individual satisfaction and decreased organizational effectiveness (Rizzo et al., 1970). Likewise, role theory states that role ambiguity — lack of the necessary information available to a given organizational position — will result in coping behavior by the role incumbent, which may take the form of attempts to solve the problem to avoid the sources of stress, or to use defense mechanisms which distort the reality of the situation. Thus, according to role theory, ambiguity should increase the probability that a person will be dissatisfied with his role, will experience anxiety, will distort his role, and will thus perform less effectively (Rizzo et al., 1970).

In this research, role stress is used as a proxy for transplant perceived pressure in his/her new role at the vendor organization. The two concepts of role conflict and role ambiguity emerged as separate dimensions in previous research. These two facets of role stress are used as antecedents to the transplant's task performance. For the purpose of consistency, this research will use "stressors" to denote the external force or situation acting on the individual, and "stress" will denote the deformation or changes produced in the individual as a result of those forces. This research will contribute to contemporary role research by examining the influence of individual level role stress on the basis of task performance in IT outsourcing arrangements.

4.2 Influence of role stress on task performance

Empirical research in the discipline of marketing has examined the effects of role stressors on a salesperson's job outcomes. Conventionally, the linear influence of role stressors on performance has been examined (e.g., Yammarino & Dubinsky, 1990; Teas, 1983; Michaels, Day, & Joachimsthaler, 1987), finding support for a dysfunctional view that role stressors have significant dysfunctional (negative) effects on job performance. Lately, potential nonlinearities have also been investigated, both curvilinear (e.g., Singh, 1998; Nygaard & Dahlstrom, 2002) and interactional effects (e.g., Singh, 1998). However, these researchers haven't yet come to a clear conclusion, neither has this type of research been conducted in the field of IS management.

As encountered in case studies, transplants of IT outsourcing are affected by a variety of environmental stimuli from different sources, and with different timing and desirability. The transplant's perception of environmental stressors influences his/her experience of role stress, which in turn leads to behavioral, physical and/or psychological outcomes. Transplants (and others) interviewed in case studies were indicating occupational stress. They were talking about a situation of changing employer, a change which they hadn't even been able to influence. Some of them had worked for their previous employer for years. They had their career there, colleagues, and even friends there, and they knew for sure business process and how information technology and systems supported the business process. At their new employer they had got new managers, new colleagues, and new business rules. In addition, the outsourcing relationship raised several issues regarding costs, resources, and partnership which strongly influenced their new role. Some transplants interviewed were not very happy being transferred, while others saw the outsourcing arrangements as an opportunity. As such, transplants may perceive these stressors individually, affecting the level of role stress experienced by the individual. The perception of stressors is the interface of environmental stimuli and the individual's way of understanding (Fevre, Matheny, & Kolt, 2003). Some employees may perceive stressors as good stress and some may perceive them as bad stress. Applying these general evidences, this research suggests that a transplant's perceived role stress has a negative, linear, and dysfunctional relationship with his/her task performance.

> *Hypothesis 1a: Transplant's perceived role conflict is negatively related to task performance.*
>
> *Hypothesis 1b: Transplant's perceived role ambiguity is negatively related to task performance.*

4.3 Outsourcing characteristics as antecedents to role stress

In this section three outsourcing characteristics — complementary core competencies, client managerial persistent expectation, and relational norms — are proposed as environmental stressors influencing a transplant's perception of role stress. These three stressors are discussed below in hypothesis 2, 3, and 4, respectively.

4.3.1 Complementary core competencies

Researchers have used a variety of different terms to talk about a firm's resources, including competencies (Prahalad & Hamel, 1990), skills (Grant, 1991), capabilities (Van der Heijden, 2001), and assets (Ross, Beth, & Goodhue, 1996). In this research we define complementary core competencies as the degree to which firms are able to eliminate deficiencies in each other's portfolio of resources by supplying distinct capabilities, knowledge, and other entities (Lambe et al., 2002). By this, client and vendor enhance each other's ability to achieve business goals. According to Quinn and Hilmer (1994), companies can substantially leverage their resources by developing a few well-selected core competencies of significance to customers, focusing investment and management attention on them, and strategically outsource many other activities.

Levina and Ross (2003) have studied one long-term successful applications management outsourcing arrangement. They suggest that the vendor's efficiency is based on the economic benefits derived from the ability to develop a complementary set of core competencies. Their study indicates that an IT application management vendor can deliver value to its clients by developing a set of experienced based core competencies that (1) address client needs and markets conditions, (2) exhibit complementarities that result in efficient service delivery, and (3) depend on the vendor's control over, and centralization of, decision rights on a large number of projects from multiple clients. This ability, to develop a complementary set of core competencies, is shared with clients through formal and informal relationship management structures.

As a consequence of outsourcing, transplants got transferred to the vendor company, a company which define IS/IT competencies as their core competencies. This new organization of work and delivery of value, with complementary core competencies, is proposed to have a positive effect on organizational work performance. Vendor organizations can pay attention to what they are best at, i.e. the sets of skills and capabilities that create high value services for client organizations.

But complementary core competencies may affect individual level work outcome as well. As transplants previously worked for the client company,

they know which are the client's core competencies and skills, and which are not. They also know the core competencies of their new employer, the vendor organization. As transplants perceive the two parties of the relationship as being able to eliminate deficiencies in each other's portfolio of resources, this may contribute to a reduction of a transplant's perceived role stress. Expectations among different stakeholder are harmonized according to the new organization of work, and thus reducing a transplant's role conflict. The given organization of competencies is clear and understood among the stakeholders, thus reducing a transplants role ambiguity. And thus it is proposed,

> *Hypothesis 2a: Complementary core competencies are negatively related to transplant's role conflict.*
>
> *Hypothesis 2b: Complementary core competencies are negatively related to transplant's role ambiguity.*

Demarcation of labor, in line with client and vendor companies' core competencies, will reduce transplants' perception of role stress, and in turn increase their task performance. But there may be an alternative explanation. IT employees are replaced according to their competencies. As they got transferred from client to vendor, transplants got the opportunity to specialize, and thus improve their efficiency. Thus a direct relationship is proposed:

> *Hypothesis 2c: Complementary core competencies are positively related to transplant's task performance.*

4.3.2 Client managerial persistent expectations

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 & Kellam, 1992). 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.

According to Ho, Ang and Straub (2003), client managers found it both difficult and awkward to manage former subordinates as external contractors. In their research Ho et al. (2003) found a positive relationship between client managers' persistence of expectations and their perceived performance of IT outsourcers. The researchers offer two alternative explanations for the positive relationship. First, client managers' perceptions are influenced by prior expectations; people construct their perceptions to be aligned with their prior expectations. The second alternative explanation lies in the research on be-

havioral confirmation. It was found that people's expectations have an effect on their own behavior, which in turn elicits expectation congruent behavior in others.

From their prior experience in supervising the transplants (as subordinates), client managers have developed clear expectations about what the transplants 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. Hence, if prior expectations persist into the IT outsourcing relationship, client managers would tend to think of these transplants as if they still were subordinates, imposing on them role expectations that are not appropriate under the new contractual relationship. Likely, vendor managers are also imposing on them role expectations. And thus client managerial persistent demands and expectations may take the form of perceived stressors, when a transplant believes there is role conflict and ambiguity.

> *Hypothesis 3a: Client managerial persistent expectations are positively related to transplant's role conflict.*
>
> *Hypothesis 3b: Client managerial persistent expectations are positively related to transplant's role ambiguity.*

Client managerial persistent expectations will increase transplants' perception of role stress, and in turn decrease their task performance. An alternative explanation lies in the line of behavioral confirmation. Client managers' expectations have an effect on their own behavior, which in turn elicits expectation congruent behavior in transplants; meaning, transplants who experience persistent client manager expectation will deliver according to client manager expectations. Thus, a direct effect is proposed:

> *Hypothesis 3c: Client managerial persistent expectations are positively related to transplant's task performance.*

4.3.3 Relational norms

The potential beneficial effect of relational norms has been recognized for some time. Research conducted by Heide and John (1992); Artz & Brush (2000), among others, suggests that as relational norms become more prevalent, we will observe the following three behaviors: co-operation will replace competition as the norm, opportunistic behavior will decline, and relationship adaptability will increase. It has been proposed that relational norms are a higher order construct consisting of three dimensions (Heide & John, 1992). First is flexibility, which defines a bilateral expectation of the willingness to make adaptations as circumstances change. Second is information

exchange, which defines a bilateral expectation that parties will proactively provide information useful to the partner. Third is solidarity, which defines a bilateral expectation that a high value is placed on the relationship, and prescribes behaviors directed specifically towards relationship maintenance.

As transplants previously were a part of a client organization, and now are a part of a vendor organization, they get affected by two different corporate cultures and different types of work behavior. Due to history, both parties might serve as role senders, imposing on transplants different demands and expectations. Creating and maintaining relational norms for the outsourcing relationship might reduce the probability of inconsistent expectations. Relational norms prescribe stewardship behavior among parties. Although relational norms are designed to enhance the wellbeing of the relationship as a whole, such norms may as well serve as a role sender reducing transplants' perceived role ambiguity and conflict. Thus it is proposed:

> *Hypothesis 4a: Relational norms are negatively related to transplant's role conflict.*
>
> *Hypothesis 4b: Relational norms are negatively related to transplant's role ambiguity.*

The existence of relational norms will decrease a transplant's perception of role stress, and in turn increase his/her task performance. Another alternative explanation exists. Transplants of IT outsourcing experience several changes, e.g., organizational, personal relationships, and work practice. From a transplant's perspective, flexibility represents insurance that change of work practice will be subject to good-faith. Information exchange represents a safeguard to the transplant in the sense that both client and vendor managers can be expected to provide him/her with all necessary information to do a good job. As solidarity prescribes behavior directed specifically toward relationship maintenance, it represents a safeguard to the transplants because it deters both client and vendor from using decision control in a way that would be detrimental. As norms serve as a general protective device against deviant behavior, a particular property is their prescription of behaviors promoting the goals of the individual parties. Client managers, vendor managers, and transplants' behavior are prescribed. Hence, we propose that the presence of normative structures will increase transplants' work outcome.

> *Hypothesis 4c: Relational norms are positively related to transplant's task performance.*

4.4 Synthesizing the research model

The research model examined in the next phase of research is depicted in Figure 4.1. In this model, IT outsourcing environmental characteristics are specified as exogenous variables, and role stress and task performance are specified as endogenous variables. The hypothesized relationships among the variables in Figure 4.1 are indicated by plus and minus signs. The predictor variables are defined as follows below.

Task performance refers to the degree to which a transplant can fulfill responsibilities and meet quality standards.

Role conflict refers to the degree of incongruity or incompatibility of expectations associated with a transplant's role.

Role ambiguity refers to the lack of clarity of a transplant's behavioral requirements.

Complementary core competencies refers to the degree to which the transplant's competence can enhance the client organization's ability to achieve business goals.

Client managerial persistent expectations is the degree to which client managers continued to expect the transplants to respond as if they were still subordinates.

Relational norms are expectations about behavior shared by decision makers.

Lacity and Willcocks (2000a) identified six outsourcing phases — scooping, evaluation, negotiation, transition, middle, and mature phase. These phases were also recognized in case-studies. Stakeholder relationships vary during activities within phases, depending on goal alignment. In this research, data was collected in the transition phase of a relationship. This is the phase where IT employees get transferred from client to customer organizations, and where they experience disequilibria in their employment. On large contracts, transition activities may last from 18 months to more than 2 years (Lacity & Willcocks, 2000a).

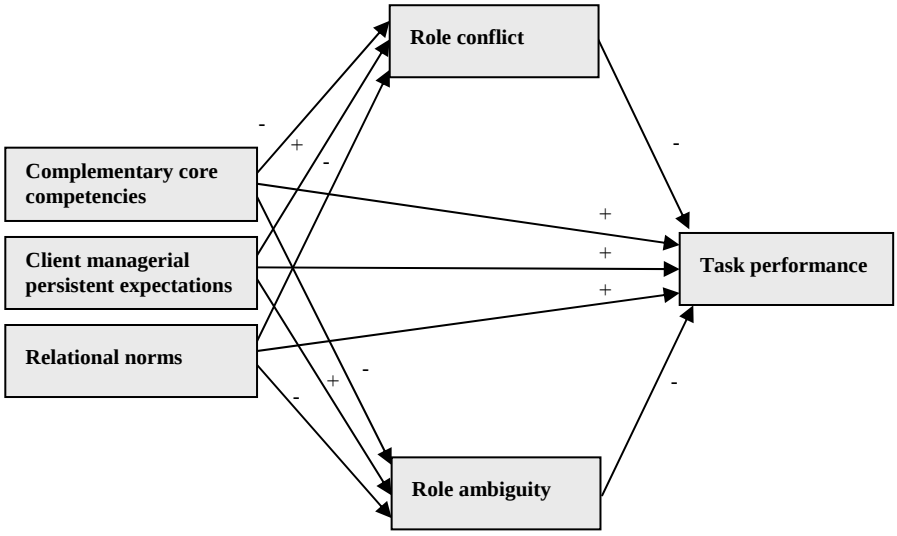

Figure 4.1. Proposed research model.

5. Confirmatory research methodology

As part of this study, the research model presented in the previous chapter was empirically tested through the use of a survey. This chapter discusses methodological issues related to the development and use of the survey instrument. The first section is a description of the unit of analysis. The second section describes the data collection process. This is followed by a discussion of the instrumentation, including a description of pretest and pilot, and the development of the measures used in hypothesis testing.

5.1 Unit of analysis

Case studies have to a large extent discussed outsourcing relational issues, but they have also explored the need for research at individual transplant level. The research model, presented in the previous chapter, emphasizes the interface of environmental stimuli and individual perception of those stimuli. Thus, in this part of the research the level of theory is the independent individual, the *transplant* that gets transferred from the client company to the vendor company. With respect to perceived role stress, individual members of a transplant group are independent of that group's influence. Thus, the value of a construct for an individual member of the group is independent of the value of the same construct for other members of the same group. Variation in the constructs is conceptualized simply as between-individual variation (Klein, Dansereau, & Hall, 1994).

As the unit of analysis is at transplant individual level, the researcher needed access to an outsourcer. And thus, the researcher contacted one global outsourcer located in Norway, asking for permission to conduct a survey among transplants of IT outsourcing. Permission was given, and the survey was prepared for transplants in the company.

5.2 Sample and data collection

For the most part, prior research has analyzed outsourcing at the organizational or relationship level. The current study was designed to provide insight into how individuals were affected by and affect the outsourcing by gathering data about their work performance. Consequently, the target population for this study was those IT employees transferred from a client to a vendor organization, and who continue to delivering services back to the client organization. Focusing on the transplants of IT outsourcing as the unit of analysis suggests an approach in which individuals are requested to answer a questionnaire. The research was supported by the management of the

vendor company and the company's Works Council. The council had equal participation from the labor union and management.

A web-based tool, QuestBack version 7.2, was used for design, data collection and reporting of survey data. A list of email addresses for potential respondents was received from the human resource department of the vendor company. This list included all employees transferred from a particular client company to the vendor. These email addresses were copied into QuestBack, which took care of the distribution. Each potential respondent received an email with a short explanation of the purpose of the research, a statement of support from top management of the company and the Works Council, a statement of confidentiality and anonymity, and researcher contact information. At the end of the email there was a link to the web-based questionnaire. In the first email distribution of the questionnaire, three of the respondents were removed because they did not work for the vendor company any more.

Data was collected for the most part during the summer of 2005, and with a reminder a little later in the autumn. The names of participating employees were ensured not to be disclosed. QuestBack took care of the respondents' anonymity. Respondents were asked to take contact if they had questions about any item on the questionnaire or about the study in general. Three respondents contacted the researcher by phone, to make sure about the appropriateness of the study. Twelve responses were rejected because of incomplete questionnaires.

There are some concluding comments to the data collection. First, prior to the survey distribution it was stressed by the contact person of the vendor company and by the Works Council that participation in this study was voluntary. Second, participants should be anonymous and the company name should not be disclosed. During data collection, the email invitation confirmed anonymity and confidentiality.

5.3 Development of survey instrument

A questionnaire was developed and used to collect the survey data. Items in the questionnaire measured concepts drawn from management theory and the information systems literature. Each construct was measured using multiple items. The items, with the exception of some demographic data such as gender and educational background, were measured on 7-point Likert scales. The definition and operationalization of each measure is described in greater detail in section 5.4.

To ensure that the instrument was valid for use, a draft instrument was qualitatively and quantitatively pre-tested as suggested by Straub (1989). Instrument validation was done through three operations — pretest, technical validation, and pilot test. Then a full-scale survey was conducted.

5.3.1 Pretest

In the pretest, the draft questionnaire was subject to a qualitative testing of validities. Personal interviews were conducted with a number of participants in order to locate and correct weaknesses in the questionnaire instrument. Interviewees included: an academic expert in methodology, an academic expert in IT outsourcing, an academic expert in language and business culture, two practitioner experts in IT outsourcing, and two transplants affected by IT outsourcing. In addition a technical expert in QuestBack was consulted. The selection of interviewees was designed to get maximum feedback from various experts. The total number of interviewees in the pretest was eight.

Interviews were both formal face-to-face, on-site meetings with practitioners, and more informal (and repeated) discussions with academic and technical experts. The duration of each practitioner interview was approximately 45 minutes to an hour. At the beginning of each interview, respondents were informed they were participating in a pre-test, and, in addition to responding to the questions, respondents were also asked to comment verbally on the conceptual clarity and word usage in the questionnaire. On the average, respondents took about 15 – 20 minutes to complete the questionnaire. The remaining time was used to discuss each respondent's reaction to the questionnaire. Overall, respondents had little trouble understanding the questionnaire.

One respondent explicitly commented that the questionnaire was too long, but others, when asked to comment on the questionnaire's length, did not express fatigue or lack of interest. One respondent suggested that a change from English to Norwegian language would ease respondents' completion of the questionnaire. "At least the researcher should avoid the use of difficult academic terms," the respondent suggested. The respondent pinpointed the use of some advanced business English terms, and he had to use a dictionary a couple of times to make sure he had understood the questions. Since the vendor company is a global outsourcer, they had English as their formal business language. Discussing this problem with the chief human resource officer of the vendor company, he told me the employees were used to answering internal questionnaires in English. And thus the researcher concluded to continue with the English version of the questionnaire. One respondent also reported a need for better positioning of questions. Another respondent underlined the difference between business cultures in the two outsourcing parties. The client company had a value-based management and the vendor culture was based on top-down management, he said.

As the intention was to collect data through a web-based tool, several of the respondents suggested putting some effort into writing an introduction email.

Included in the introduction email was: a short presentation of the research project, a statement of support from the outsourcer's top management and the Works Council, and an assurance of confidentiality and anonymity. The last point was important since the level of analysis was at an individual level.

The pretest also led to the development of two screening questions at the beginning of the questionnaire to make sure respondents were delivering service back to their prior employer. This was done to make secure respondents were in the transplant target group. This screening was also explained to the respondents in the short introduction to the survey. Finally, an academic expert in language and business culture reviewed the questionnaire. The language expert, fluent both in Norwegian and English, checked the questionnaire for consistency, flow, imprecise word use, and obvious mistakes.

The intention of the pretest was to ensure clarity and readability of the questionnaire and to ascertain that the theory-based items tapped issues of concern to the respondents (content validity and reliability). Clarification of constructs and the means of the operationalization were also undertaken (construct validity). Content validity was addressed by encouraging participants to single out pointless questions and suggest new areas of inquiry.

5.3.2 Technical validation and pilot test

To further validate the instrument, a pilot survey was carried out. The pilot test disconfirmed measurement problems in the instrument. Besides their use in validation, pilot tests are also desirable because they provide a testing ground for final administration of the instrument. A small department, geographically separated from others, was selected as the site for the pilot study. The questionnaire was sent to thirteen employees, with a data collection period of one week. Eight employees responded, which gave a response rate of 61.5% for the pilot study.

In the introduction the respondents were told they were participating in a pilot test of the questionnaire. In addition to responding to the questions, they were asked to comment verbally on the conceptual clarity and word usage in the questionnaire. A separate textbox for this purpose was available at the end of the questionnaire and they were also invited to make a telephone call. Three respondents made a phone call to the researcher and five respondents filled out the text box at the end of the questionnaire to give their comments. Respondents agreed upon the relevance of the research. In unison, they suggested using Norwegian in the final questionnaire. They were used to speaking technical English. As they did encounter some difficult business or management terms, they had to use a dictionary to make

sure they understood all of the questions. Thus the average time to fill out the questionnaire was around 20 minutes.

The purpose of technical instrument validation is to validate construct validity and reliability. If measures vary little across methods of measuring those variables, they can be said to be independent of the methods used to gather the data and to demonstrate high construct validity. This research has adapted existing measures from the literature to ensure strong construct validity. Reliability is a statement about the stability of individual measures across replications from the same source of information (multi items scale). If enough respondents are inconsistent in their answers to these items, the items will contain abnormally high measurement error and hence, unreliable measures. Appendix D shows that Cronbach alphas in this study were not very different from alphas in other studies.

5.3.3 Revisions to construct definitions and measurements

Two pointless questions were removed from the questionnaire. These items were pinpointed from several respondents in the pretest and the pilot study. Items were removed from scales with high alpha. In addition, three item scales with low alpha were extended with one item each. Complementary core competence scale was extended with one new item from Van der Hejden (2001). Flexibility scale was extended with one item from Rokkan & Haugland (2002), and the solidarity scale was extended with one new item from the same authors. A careful introduction was given to each set of questions for positioning purposes. This was suggested by academic experts, but also as an answer to the respondents' difficulties with reading some of the questions.

The questionnaire was translated to Norwegian, based on unison suggestions from respondents in the pilot study and from one academic expert. The most frequent method of accomplishing the adaptation, and verifying the equivalence of new scale with the original language version, is the procedure of translation, back-translation, and verification (Brislin, 1970). Back-translation is typically used to verify semantic equivalence of a translated measure to the original scale. The initial translation from English to Norwegian was done by the researcher. A draft version of the questionnaire, with both English items and translated Norwegian items, was emailed to two academic experts fluent in Norwegian and English. Some corrections were suggested by the reviewers, and these were implemented into the final version of questionnaire.

Although validity of the adapted scale depends fundamentally on semantic equivalence, back translation always involves subjective evaluations. A study by Mallinckrodt and Wang (2004) developed a "dual-language split-

half" quantitative method of verification to supplement back-translation judgments. Correlations between the "dual-language split-halves" were not statistically different from correlations between all-English sets of the same items. There were also no differences in retest reliabilities. And thus, this research used the following procedure in translating and verifying semantic equivalences of the adapted measures. First, the researcher prepared a bilingual first draft translation. Second, two bilingual academic experts verified the equivalence of translation and original version item-by-item. They were knowledgeable about the constructs and they were working independently. They also verified equivalence of the translated scale instructions. If items or portions of instructions were initially declared not equivalent, this was discussed until all items were declared equivalent. The quantitative verification phase was dropped since prior research found no such problems.

5.4 Measures

Whenever possible, existing measures were adopted for this study. However, given the exploratory nature of the study, and the fact that a large number of variables have not previously been used in outsourcing context, it was necessary to pretest and pilot test the variables. This was done by finalizing a working definition for those constructs, based on relevant literature and comments from practitioner experts and academic experts. Individual measurement items were then developed for each construct. Once a preliminary version of the items was complete, it was reviewed and subject to a pilot test as described previously. With the exception of a few demographic items, all variables were measured on a seven-point Likert scale anchored at one end by "strongly disagree" and the other end by "strongly agree." Six constructs were operationalized for the study. A summary of the constructs can be found in Table 5.1 below, and the items used to operationalize each of the constructs can be found in Appendix D.

Complementary core competencies is the degree to which the transplant's competence can enhance a client organization's ability to achieve business goals. Vendor managers' expectations are to eliminate deficiencies in the parties' portfolio of resources by using a transplant's distinct capabilities and knowledge. Hence, transplants are seen as a resource that can enhance client's ability to achieve its business goals. From the vendor's perspective, client core competence includes the experience and product knowledge the transplant has in the vendor's product category as well as the administrative, supervisory, and strategic ability of the client's executives. Complementary resource was operationalized with three items from Lambe, Spekman and Hunt (2002) and one item from Van der Heijden (2001). The questionnaire items read: (item CCC1) I contribute different capabilities to [client company], (item CCC2) I have complementary strengths that are useful to [client

company], (item CCC3) I have separate abilities that, when combined with [client company]'s capabilities, enable them to achieve goals beyond their individual reach, (item CCC4) I have the capability to envisioning the [client company]'s business processes which technology makes possible. Four items used to measure this variable is presented in Appendix D.

Construct	Measure assesses	Key references	Items*
Complementary core competencies	Degree to which the transplant's competence can enhance client organization's ability to achieve business goals	Lambe et al. (2002), Van der Heijden (2001)	4 (3)
Client managerial persistent expectations	Degree to which client managers' continued expectations of the transplants to respond as if they were still subordinates	Ho et al. (2003)	6 (7)
Relational norms	The party's expectations of making adjustments in the ongoing relationship in accordance with changing circumstances.	Heide & John (1992), Rokkan & Haugland (2002)	10 (10)
Role conflict	Degree of incongruity or incompatibility of expectations associated with transplant's role	Nygaard & Dahlstrom (2002)	5 (6)
Role ambiguity	Lack of clarity of transplant's behavioral requirements.	Nygaard & Dahlstrom (2002)	7 (7)
Task performance	Degree to which transplant can fulfill responsibilities and meet quality standards.	Kuvaas (2006)	6 (6)

* Final item numbers (initial item numbers)

Table 5.1. Definitions of constructs.

Client managerial persistent expectations is the degree to which client managers continued to expect the transplants to respond as if they were still subordinates. 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 & Kellam, 1992). 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 (Ho et al., 2003). In total, six items measured the construct. Questionnaire items read: because I was previously a part of client organization before outsourcing, managers in the client organization now

expect me to: (item PME1) be more willing to work extra hours, (item PME2) perform my job more reliably, (item PME3) volunteer to do more tasks over and above the service level agreement, (item PME4) invest more in improving current skills to serve the better, (item PME5) be more willing to put in a full day's work for a full day's pay, (item PME6) suggest more initiatives on technology issues to them. Six statements used to measure this variable is presented in Appendix D.

Relational norms are defined as a higher order construct consisting of the dimension flexibility (FLE), information exchange (INF), and solidarity (SOL). Flexibility describes the party's expectations of making adjustments in the ongoing relationship in accordance with changing circumstances. Information exchange expresses the expectation that particular pieces of information that might help the other party will be provided. Solidarity refers to expected degrees of efforts of the parties toward preserving the relation. Each dimension is measured as a multi-item scale with a Likert-type format.

Three items of flexibility were adapted from Heide & John (1992) and one new item was picked from Rokkan and Haugland (2002) due to low alpha on the original scale. The items of flexibility read: (item FLE1) flexibility in response to request for changes is a characteristic of this relationship, (item FLE2) the parties expect to be able to make adjustments in the ongoing relationship to cope with changing circumstances (item FLE3), (item FLE4) the terms of an ongoing transaction are not renegotiable under any circumstances.

Four items of information exchange were adapted from Heide and John (1992). Questionnaire items read: (item INF1) in this relationship, it is expected that any information that might help the other party will be provided to them, (item INF2) Exchange of information in this relationship takes place frequently and informally, and not only in accordance with a specified agreement, (item INF3) it is expected that parties will provide appropriate information if it can help the other party, (item INF4) it is expected that we keep each other informed about events or changes that may affect the other party. Three items of solidarity were adapted from Heide & John (1992) and one new item was picked from Rokkan and Haugland (2002) due to low alpha on the original scale.

The questionnaire items of solidarity read: (item SOL1) problems that arise in the course of this relationship are treated by the parties as joint rather than individual responsibilities, (item SOL2) the parties are committed to improvements that may benefit the relationship as a whole, and not only by the individual parties, (item SOL3) the parties in this relationship do not mind owing each other favors, (item SOL4) an important feature of this relationship is that neither party would do something damaging to the other party.

The underlying structure of the relational norm construct was approached in a molecular way. Each of the three norm types represented a separate dimension, which reflected an existing overall factor structure. It was hypothesized that an overall latent structure existed, indicated by its first order types. Thus, relational norm was represented only through one combination of norm types. Similarly, different transplants can only have the same perception through the same combination of beliefs. If the molecular perspective is valid, a comparison of the loadings would be an indicator of the relative importance of each indicator in reflecting the overall perception (Chin & Gopal, 1995). Twelve items were used to measure this variable, see Appendix D.

The role stress scales were based on the seven point measures developed by Rizzo, House, and Lirtzmann (1970). The conflict and ambiguity measures consisted of six and seven items, respectively. *Role conflict* refers to the degree of incongruity or incompatibility of expectations associated with a transplant's role. Questionnaire items role conflict read: (item CON1) I receive assignments without the manpower necessary to complete the task, (item CON2) I have to circumvent rules or policies to complete assignments, (item CON3) I receive incomplete requests from two or more people, (item CON4) I am often given assignments without adequate resources and materials to execute them, (item CON5) I work on unnecessary tasks for [client company], (item CON6) I have to work under vague directives or orders. Role conflict consisted of six items, as detailed in Appendix D.

Role ambiguity refers to the lack of clarity of a transplant's behavioral requirements. Questionnaire items role ambiguity read: (item AMB1) I feel certain about how much authority I have, (item AMB2) I know what my responsibilities are, (item AMB3) I have just the right amount of work to do, (item AMB4) I know that I have divided up my time properly, (item AMB5) I know exactly what is expected of me, (item AMB6) Expectation of what has to be done is clear, (item AMB7) I perform work that conforms with my values. Role ambiguity consisted of seven items, respectively, as detailed in Appendix D.

Task performance, the major dependent variable, refers to the degree to which a transplant can fulfill responsibilities and meet quality standards. Work performance was operationalized into six components by Kuvaas (2006) Three items to fulfill responsibilities were based on (Brockner, Tyler, & Cooper-Schneider, 1992), and three items to meet quality standards were based on (May, Korczynski, & Frenkel, 2002). Questionnaire items read: (item TAP1) I try to work as hard as possible, (item TAP2) the quality of my work is top-notch, (item TAP3) I intentionally expend a great deal of effort in carrying out my job, (item TAP4) I often put in extra effort in carrying out my job, (item TAP5) I almost always perform better than an acceptable

level, (item TAP6) I often perform better than expected from me. The six items are presented in Appendix D.

5.5 Instrument validation

The purpose of this chapter was to discuss methodological issues related to data collection and measurement item construction. A survey-based approach was prepared to gather data from transplants in one vendor organization. In general, items were based on insights gained from literature and definitions of the construct from previous research. The items were first reviewed in a pretest and then the resulting instrument was subjected to a pilot test. According to Straub (1989), a researcher should pretest and/or pilot test instruments, attempting to assess as many validities as possible in the instrument development process.

Content validity; The researcher has done a pre-test of the instrument among academic experts, practitioner experts, and transplants affected by outsourcing. Experience from the pre-test was that the label attached to the measures seems to be appropriate. Items seem to measure what they claim to.

Construct validity; All constructs used in this research seem to have theoretical agreement on its content. The more a construct is used by researchers in more settings with outcome consistent with theory, the more its construct validity. Only a few corrections to the constructs were applied in this research, leaving most items unchanged. The researcher was testing the instrument using both a paper version and an electronic version of the questionnaire. Stability across methodologies was not tested statistically, but no abnormalities were observed or reported. There is no reason to believe that the data reflects artefacts of instrument, but rather it is reasonable to believe the data is a reflection of true scores.

Reliability; High correlations between alternative measures (large Cronbach alphas) are usually a sign that the measures are reliable. In this research the investigator adapted existing measures from the literature to ensure strong construct validity. Cronbach alphas are reported in Appendix D and discussed in previous section.

During the process of pretest and pilot testing, the survey instrument has been improved. Full scale implementation of the survey instrument was conducted immediately after the pretest and pilot study were finished. Details concerning the survey results and analysis are given in the next chapters.

6. Data analysis and results

The purpose of analysis is to reduce data to an intelligible and interpretable form so that the relations of research problems can be studied and tested (Kerlinger, 1986, p. 125). This chapter will document the process employed in scrutinizing and organizing the data, compare the results with expected outcomes, and draw conclusions based on those results.

First in this chapter there is a discussion of Structural Equation Modeling in general, and a specific form known as Partial Least Square. The second section contains descriptive characteristics of the respondents. Following a recommended two-stage approach to assess the research model (Hair, Anderson, Tatham, & Black, 1995), a confirmatory factor analysis was first conducted to assess the measurement model. Consequently, the structural relationships were examined. The study's major findings are summarized in the final section.

6.1 Structural equation modeling

Structural Equation Modeling (SEM) has been used in almost every conceivable field of study, including psychology, sociology, and management (Hair et al., 1995). In the IS field, the use of SEM has increased dramatically in recent years (e.g., Goles, 2001; Ho et al., 2003; Bock, Zmud, & Kim, 2005). The reason for its attractiveness is twofold: 1) it provides a straightforward method of dealing with multiple relationships simultaneously while providing statistical efficiency, and 2) its ability to assess the relationships comprehensively, has provided a transition from exploratory to confirmatory analysis.

SEM is a second-generation data analysis technique that not only assesses the structural model — the assumed causation among a set of dependent and independent constructs — but, in the same analysis, also evaluates the measurement model — loading of observed items (measurements) on their expected latent variables (constructs). The combined analysis of the measurement and the structural model enables measurement errors of the observed variables to be analyzed as an integral part of the model, and the factor analysis to be combined in one operation with hypothesis testing (Gefen, Straub, & Boudreau, 2000). SEM evaluates the reliability and validity of the measurement items while simultaneously evaluating the research model within which the constructs are embedded.

Of particular interest in this study is SEM's ability to model latent variables (sometimes referred to as factors). Latent variables are unobservable variables, or variables that cannot be directly measured. These latent variables

are measured indirectly via the use of measurement items (also known as observed variables or manifest variables) that either reflect or form the latent variable. An example of a latent variable in this study is "role ambiguity." Role ambiguity is a concept that cannot be directly measured. However, it can be indirectly measured by linking it to a set of items that can be directly measured. In this case seven Likert-scale items were used as indicators, or manifest variables that represent the underlying concept, termed role conflict. Thus, for the purpose of analysis, the latent variable role ambiguity was characterized in terms of the seven measurement items used to represent it.

A general SEM model can be broken down into two components; the measurement model, and the structural model. The measurement model, sometimes called the outer model, is concerned with the relationship between latent variables and the specific set of items associated with each of them. The structural model, sometimes called the inner model, is concerned with the relationship between the various latent variables. The structural model represents the theory posited by the researcher. The measurement model provides a means to evaluate the validity of the measurement items and their relationships with their associated latent variables.

Several different techniques fall under the SEM umbrella. The best known are covariance-based approaches reflected by software such as LISREL, AMOS, and EQS (Goles, 2001). Covariance-based SEM techniques generally utilize a maximum-likelihood function and endeavor to minimize the difference between the covariances of the sample data and those implied by the estimated parameters of the theoretical model. Underlying covariance-based SEM techniques are the twin assumptions that the data follows a normal distribution, and that the observations are independent of each other (Chin & Gopal, 1995). Covariance-based SEM is also subject to certain constraints relative to sample size. Minimal sample sizes range from 200 to 800, depending on the power analysis of the specific model (Chin & Newsted, 1999).

An alternative to covariance-based SEM techniques is the partial least squares approach, exemplified by PLS-Graph (hereafter referred to as PLS). This technique is a variance-based approach that is oriented towards the predictive aspects (variance explanation) of the model, as opposed to covariance-based techniques that are oriented towards corroborating the overall model fit. PLS also estimates parameters separately for each block of indicators associated with a particular latent variable, as opposed to the covariance-based approach of simultaneously estimating all parameters. Thus in PLS any bias in the estimates of one parameter is less likely to affect the estimates of other parameters. Further, due to its use of an ordinary least squares algorithm, PLS is relatively immune to instances where the sample data is not normally distributed, and is not subject to the restrictions on sam-

ple size as is covariance-based SEM. Minimally acceptable samples sizes for PLS range from 30 to 100, depending on the model (Chin & Newsted, 1999; Gefen et al., 2000).

These two versions of SEM techniques, covariance-based and partial least square, differ in the orientation of their analysis, and in the nature of their underlying assumptions. Consequently, each type is more appropriately used in certain situations. Covariance-based techniques are more suited when the underlying theory is strong and the overall objective is theory testing. In contrast, PLS' forte is its ability to help the researcher understand and predict the relationships of the individual latent variables among themselves. That is, when the objective is oriented more towards theory building than theory testing (Chin & Newsted, 1999; Gefen et al., 2000).

This study has several characteristics that must be taken into consideration when determining which analysis tool is appropriate. It is the first study to corporate different environmental stressors, role stress, and work performance of transplants in IT outsourcing arrangements. It also breaks new ground in the decomposition of outsourcing environmental stressors. Consequently, it is more of an exploratory study than a confirmatory one. Furthermore, the model contains second-order factors.

In short, the theoretical model is complex and untested. In addition, the sample size of transplants available falls below the minimum recommendation of 200 cases for covariance-based SEM methodologies. Taking all into account, it is obvious that PLS is a more appropriate tool in this instance for data analysis than covariance-based SEM techniques. Consequently, PLS-Graph version 3.0 was selected to analyze the data and test the model.

6.2 Sample characteristics

The survey collected information regarding the respondent's gender, educational background and study field, years employed by the client company, and current position in the vendor company. This section summarizes the demographic information of the respondents, see Table 6.1.

All employees transferred from client to vendor in a particular outsourcing case — a total of 159 transplants — were asked to participate in the survey. A total of 103 respondents answered the questionnaire, and this makes the overall response rate 64.7%. In an initial screening of the data collected, 11 of the respondents were removed from the data set because these respondents no longer delivered services back to their previous employer. They served other clients or they were in an internal staff function without client responsibilities. The remaining 92 respondents were serving their previous employer, either partly or as the only customer. This screening and preparation was necessary to fulfill obligations given by the previous definition of

transplant. Transplants are employees who formally leave their organization and are transplanted into the vendor company, who employs them and offers their services back to the original employer for a service fee.

Measure	Items	Frequencies	Percent
Gender	Male	73	79.3 %
	Female	19	20.7 %
Educational background	High school	21	22.8 %
	Bachelor's (3 years)	39	42.4 %
	Master's (5 years)	12	13.0 %
	PhD	-	-
	Other	20	21.7 %
Study field	Technology/information sciences	68	73.9 %
	Economics/management	5	5.4 %
	Other	19	20.7 %
Years employed by client company	0 – 3	4	4.4 %
	4 – 6	28	30.4 %
	7 – 9	18	19.5 %
	10 or more	42	45.6 %
Time since transferred from client to vendor	Group A (17 months)	69	75.0 %
	Group B (7 months)	23	25.0 %
Current position at vendor company	Senior management	2	2.2 %
	Account/service management	6	6.5 %
	Service provider	77	83.7 %
	Staff function	7	7.6 %

Table 6.1. Sample characteristics of respondents.

Respondents in the survey were transferred at two different points in time — 75% of them were transferred around 17 months prior to the survey (Group A) and 25% of them were transferred to the vendor company around 7 months prior to the survey (Group B). The ratio of answers between groups is approximately the same as the ratio between overall sizes of groups. Initially, the size of Group A was around three times the size of Group B.

Taken as a whole, 79.3% of the respondents were male and 20.7% were female. Regarding their highest educational background, 22.8% had completed high school, 42.4% had a Bachelor's degree or equivalent, 13.0% had a Master's degree, and 21.7% had other educational background (mostly one or two years of higher education). Not surprisingly, 73.9% of the respondents had their main field of study within technology and information sciences. A small group of 5.4% had studied economics and management. Other fields of study included such things as natural sciences, social sciences, and the humanities.

Respondents' current positions in the vendor company were within management (8.7%), service provider (83.7%), and staff function (7.6%). A little bit more than half of the service providers were delivering systems services, and a little less than half were delivering technology services.

Interesting to note was the length of the respondent's previous employment at the client company. They had on average worked 8.3 years at the client company before outsourcing, and 43.7% of the respondents had worked for 10 or more years at the company. Only 20.4% of the respondents had been employed by the client company for less than 6 years prior to the outsourcing.

Taken as a whole, this indicates that the majority of the respondents are knowledgeable and involved transplants who are well qualified to comment on individually perceived expectations, role stress, and task performance, caused by the outsourcing arrangement.

6.3 Evaluating the measurement model

Factor analysis was used to uncover the latent structure of the set of variables. Attribute space was reduced from a larger number of variables to a smaller number of factors. As this research uses constructs on the basis of pre-established theory, a confirmatory factor analysis was done to determine if the number of factors and the loadings of measured variables confirmed what was expected from prior research. Indicator variables were selected on the basis of priory theory and factor analysis was used to see if they loaded as predicted on the expected number of factors. The researcher's a priori assumption was that each factor was associated with a specified subset of indicator variables. A minimum requirement of confirmatory factor analysis is that one hypothesized beforehand the number of factors in the model, but usually expectations also exists about which variables will load on which factors (Kim & Mueller, 1978, p. 55). With this, the researcher was able to determine if the measures created to represent a latent variable really belonged together.

The confirmatory factor analysis was approached using PLS-Graph version 3.0. While PLS is typically used to model causal relationship among latent variables (factors), it is equally possible to use PLS to explore confirmatory factor analysis measurement models. The measurement model was analyzed in three stages. First, the individual item reliabilities were examined. Second, the model's convergent validity was reviewed. And finally, discriminant validity was assessed. This process provided assurance that the constructs were adequately and reliably measured prior to analyzing the structural model.

Individual item reliability was examined by looking at the loadings, or correlations, of each indicator on its respective construct. For reflective indicators, a generally recognized rule of thumb is that items with a loading of 0.707 or above demonstrate acceptable reliability (Barclay, Higgins, & Thompson, 1995; Chin, 1998). This threshold implies that there is more variance shared between the measures and their constructs than there is error variance. Appendix E shows the loadings of the items on their respective constructs, along with weight, standard error, and t-value. The initial analysis indicated that elimination of some items would enhance the fit indices. Standardized residuals indicated significant cross-loadings for three items. Two items of the relational norm construct and one item on the role conflict construct were deleted. The rest of the items were left intact to retain semblance of similarity with scales used in past studies. Pursuit of optimal fit can limit the conceptual domain (Nygaard & Dahlstrom, 2002). All factor loadings in the trimmed model have t-values that exceed 2.0. Removal of the three items offered stronger representation of the data measured as composite reliability and average variance extracted (see Tables 6.2 and 6.3).

The next step in analyzing the measurement model was to evaluate *convergent validity.* This indicates the indicators for a given construct should be at least moderately correlated among themselves. Poor convergent validity among the indicators for a factor may mean the model needs to have more factors. Cronbach's alpha is commonly used to establish convergent validity. Convergent validity was evaluated by examining the composite reliability and average variance extracted from the measures. Reliability is a measure of the internal consistency of the construct indicators, depicting the degree to which they indicate the common latent (unobserved) construct. More reliable measures provide the researcher with greater confidence that the individual indicators are all consistent in their measurements. A commonly used threshold value for acceptable reliability is 0.70 (Hair et al., 1995), although this is not an absolute standard, and values below have been deemed acceptable if the research is exploratory in nature.

Measures	Items	Cronbach's alpha	Composite reliability	Average variance extracted
Core competencies	4	0.735	0.840	0.574
Persistent expectations	6	0.878	0.907	0.621
Relational norms	10	0.885	0.909	0.514
Role conflict	5	0.795	0.853	0.539
Role ambiguity	7	0.842	0.883	0.525
Task performance	6	0.898	0.923	0.669

Table 6.2. Results from confirmatory factor analysis.

Variable	Mean	S.D.	1	2	3	4	5	6
1) Core competencies	5.364	1.035	0.757					
2) Persistent expectations	4.033	1.446	0.360	0.788				
3) Relational norms	4.393	1.022	0.213	0.031	0.716			
4) Role conflict	4.135	1.262	-0.028	0.302	-0.233	0.734		
5) Role ambiguity	3.624	1.141	-0.330	-0.057	-0.526	0.320	0.724	
6) Task performance	5.263	0.966	0.408	0.177	0.400	0.057	-0.623	0.817

Note: The shared numbers in the diagonal row are squared roots of the average variance extracted, which is the square root of the variance shared between the constructs and their measure. Off diagonals are the correlations between constructs. The diagonal should be larger than any other corresponding row or column entry in order to support discriminant validity.

Table 6.3. Means, standard deviations, correlation, and AVE of variables.

Table 6.2 shows the composite reliability scores for each of the constructs are well above 0.70, ranging from 0.840 to 0.923, demonstrating an acceptable level of internal consistency of the construct indicators. Another measure of reliability is the variance extracted measure. This measure reflects the overall amount of variance in the indicators accounted for by the latent construct. Higher variance extracted values occur when the indicators are truly representative of the latent construct. Recommendations typically suggest that the variance extracted value for a construct should exceed 0.50 (Fornell & Larcker, 1981). Table 6.2 shows that the average variance extracted by our measures range from 0.514 to 0.669, which are above the acceptability value. In addition, Appendix E exhibits the weights and loadings of the measures in the research model. Bootstrap resampling procedure was used to assess the significance of PLS parameter estimates. The results of 500 resamples indicate that all measures are significant on their path loadings at the level of 0.01.

Dicriminant validity indicates the extent to which a particular construct differs from other constructs. In PLS analysis, one criterion for adequate discriminant validity is that a construct should share more variance with its measure than it shares with other constructs in the model (Barclay et al., 1995). One method of assessing discriminant validity is to examine the average variance extracted (AVE) for the construct. This measure, developed by Fornell and Larcker (1981), is the average variance shared between a given construct and its indicators. The AVE of a given construct should be greater than the variance between that construct and other constructs. That is, the AVE should exceed the square of the correlation between any two constructs (or the square root of AVE should be greater than the correlation). This implies that more variance is shared between a particular construct and its indicators than between that construct and another construct. In addition, the AVE value should be greater than 0.50, indicating that more than 50% of the item's variance is captured by the construct (Chin, 1998).

Table 6.3 presents the AVE values, in bold type on the diagonal. The values shown for AVE are the square root of the AVE; the other values are the correlations between constructs. An examination of Table 6.3 shows that the AVE values meet the criteria. Values are greater than 0.50 for each construct, and they are greater than the correlations between their respective construct and all other constructs. The AVE values on the diagonal are greater than the off-diagonal values in the corresponding rows and columns; each construct shares larger variance with its own measures than with other measures.

A second criterion for discriminate validity is that no item should load more highly on another construct than it does on the construct it intends to meas-

ure. Thus, the researcher also considered both loadings and cross-loadings to establish disciminant validity; these are shown in Appendix F. Factor analysis was accomplished through SPSS version 13.0, a general-purpose statistical package which supports factor analysis. This traditional method allowed the researcher to examine factor loadings of indicator variables to determine if they loaded on latent variables as predicted by the researcher's model. This provided a detailed insight into the measurement model, and as such the traditional method is a useful analytic supplement to the analysis of alternative measurement factor models using a structural equation modeling package (such as PLS). Items in Appendix F are grouped by constructs, with the loadings of their respective constructs in bold type. Going down the columns in Appendix F, it is apparent that the loadings for the items in each group on their respective constructs are higher than any other items in that column. This suggests that the items associated with a particular construct are more highly correlated with that construct than are any other items, and hence are more internally consistent. Factor loadings represent the correlation between the individual indicator and its factor. The researcher employed the concept of statistical power to specify the factor loading for a sample size of 92 respondents. According to Hair et al. (1995), a factor loading of 0.65 is required for significance at 0.05 level, which gives a power of 80 percent.

Before testing for a significant relationship in the structural model, one must demonstrate that the measurement model has a satisfactory level of validity and reliability (Fornell & Larcker, 1981). These results from the confirmatory factor analysis indicate that the constructs are reliably measured and are adequate for hypothesis testing.

6.4 Evaluating the structural model

With an adequate measurement model and an acceptable level of multicollinearity, the proposed hypotheses were tested with PLS. The results of the analysis are depicted in Figure 6.1 and estimates of environmental stressors, role stress and task performance are shown in Table 6.4. Results are presented in the following sequence: task performance construct, role conflict construct, and role ambiguity construct.

The influence of role stress on task performance is the focus of hypotheses H1a and H1b. We hypothesized in H1a that role conflict would be negatively related to task performance. Contrary to this hypothesis, results indicate a significant, positive relationship between these two variables ($ß = 0.284$, $t = 3.3127$, $p < 0.001$). Findings provide support for H1b, relating role ambiguity negatively to task performance ($ß = -0.588$, $t = 6.4881$, $p < 0.001$). That is, a transplant's role stress measured as role conflict and role ambiguity, is influencing work outcome measured as task performance. The pair wise correlation between role ambiguity and role conflict is 0.320, and indicates

no shared variance between the role ambiguity and role conflict variables. These interesting results are discussed later in the next chapter.

Hypotheses H2c, H3c, and H4c examine complementary core competence, client managerial persistent expectations, and relational norms, respectively, as antecedents of task performance, but none of these relationships were found to be significant; meaning, no direct effect was found.

Hypotheses H2a, H3a, and H4a examine antecedents of role conflict. H2a suggests a negative relationship between complementary core competence and role conflict, H3a suggests a positive relationship between client managerial persistent expectations and role conflict, and H4a suggests a negative relationship between relational norms and role conflict. Neither the core competence parameter in H2a ($ß$ = -0.106, t = 0.9601), nor the relational norm parameter in H4a ($ß$ = -0.221, t = 1.7768), were found to be significantly related to role conflict. H3a suggests a positive relationship between client managerial persistent expectations and role conflict. Results indicate a significant, positive relationship between these two variables ($ß$ = 0.347, t = 2.8578, $p < 0.01$).

Hypotheses H2b, H3b, and H4b examine antecedents of role ambiguity. The persistent expectations parameter in H3b ($ß$ = 0.046, t = 0.3454) was not found to be significantly related to role ambiguity. H2b suggests a negative relationship between complementary core competence and role ambiguity, and H4b suggests a negative relationship between relational norms and role ambiguity. Results indicate a negative relationship between the core competence parameter and role ambiguity in H2b ($ß$ = -0.246, t = 2.3162, $p < 0.05$), and also a negative relationship between the relational norms parameter and role ambiguity in H4b ($ß$ = -0.475, t = 4.9561, $p < 0.001$).

Explained variance for role conflict was 15.9% and for role ambiguity explained variance was 32.9%. A much greater explained variance was associated with task performance, 50.8%. 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, levels under 10% are commonly reported. Nevertheless, this research acknowledges that the 15.9% explained variance found was not high. However, it is close to the range of results found in other IS theory-based empirical studies. For example, the studies published in the top-ranked IS journals explain variance in the 20 – 30% range (see Ho et al., 2003; Bock et al., 2005 for a sample of such studies). When the context of this study is taken into consideration — its exploratory nature, and the fact that it is one of the few studies to empirically examine how outsourcing affects individuals, the results are encouraging and interesting.

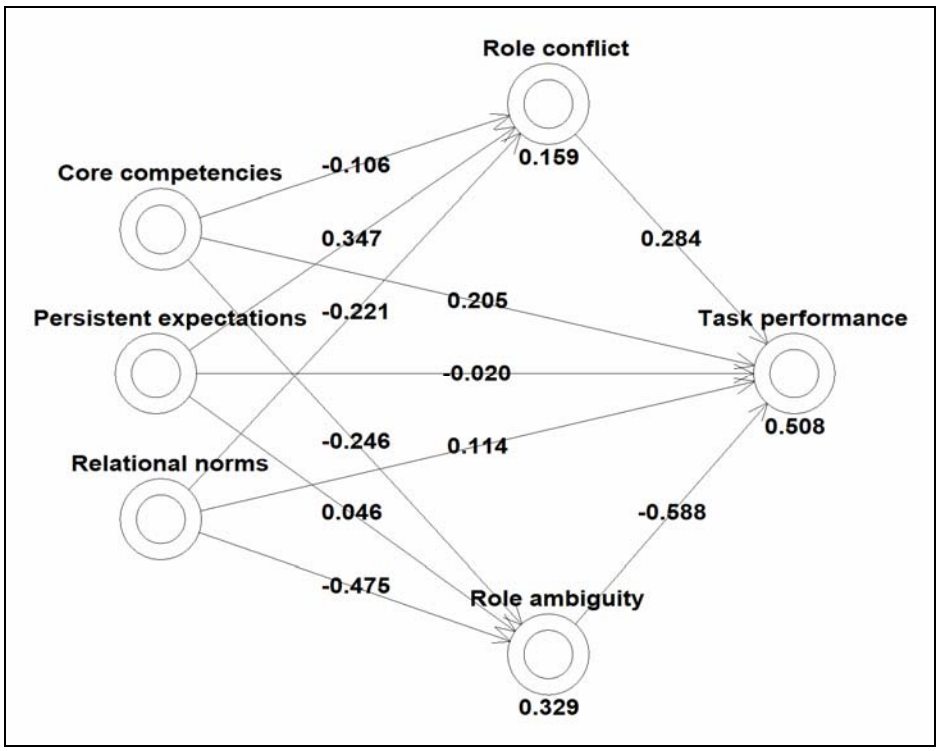

Figure 6.1. Results of PLS analysis.

Dependent variable	**Predictor variable**	**Hypothe-sized sign**	**Path coeffi-cients**	***t***	**Significance level**	***R²***
Role conflict	Core competencies	-	-0.106	0.9601	-	0.159
	Persistent expectations	+	0.347	2.8578	$p < 0.01$	
	Relational norms	-	-0.221	1.7768	-	
Role ambiguity	Core competencies	-	-0.246	2.3162	$p < 0.05$	0.329
	Persistent expectations	+	0.046	0.3454	-	
	Relational norms	-	-0.475	4.9561	$p < 0.001$	
Task perform-ance	Core competencies	+	0.205	1.4462	-	0.508
	Persistent expectations	+	-0.020	0.1784	-	
	Relational norms	+	0.114	1.0557	-	
	Role conflict	-	0.284	3.3127	$p < 0.001$	
	Role ambiguity	-	-0.588	6.4881	$p < 0.001$	

If the absolute value of the test statistic is greater than the upper critical value, then we reject the null hypothesis.

Table 6.4. Role stress and task performance estimates.

6.5 Evaluating the overall model

SEM is based on causal relationships, in which change in one variable results in change in another variable. In this research, role theory was used to explain role stress and work outcome of transplanted IT employees. The guiding theoretical perspectives explaining relationships between environmental stressors and transplants' perception of role stress were core competence theory, relational norm theory, and cognitive psychology/social exchange theory. As such, the causal relationship suggested was based on a theoretical rational.

The proposed relationships were portrayed in a path model with theoretically based constructs, and arrows between them indicating the causal relationships between exogenous and endogenous variables of the model. The theoretical basis for the research model was developed in chapters 4 and 5. The model was specified formally as a series of equations that defined: (1) the structural equations linking constructs, (2) the measurement model specifying which variables measure which constructs, and (3) a set of matrices indicating any hypothesized correlations among constructs. In this chapter, a two-phased approach was used to assess the research model. First, a confirmatory factor analysis of the reflective measures was done. And second, structural equation modelling was used to assess the proposed relationships.

Initially, SEM was formulated for testing a series of causal relationship with the covariance matrix type. In this study the primary purpose was to examine only patterns of relationship, not with total explanation as needed in theory testing, and thus the correlation matrix was acceptable. PLS Graph v3.0, a correlation matrix based technique, was selected as appropriate for testing the proposed model. According to Green (1991), sample size can be determined if three values are specified: alpha, the probability of committing a Type I error (i.e., incorrectly rejecting the null hypothesis); power, one minus the probability of making a Type II error (i.e., not rejecting a false null hypothesis); and effect size, the degree to which the criterion variable is related to the predictor variables in the population. To conduct power analysis for this research, choices of values for alpha, power, and effect size were made. Alpha was set at 0.05, the traditional level of significance. Power was set at 0.80, a value proposed by Cohen (cited in Green, 1991) as appropriate for a wide range of behavioral research. Effect size was thought to range between small (0.2) and moderate (0.5). A typical study in the behavioral sciences would have a medium effect size (Cohen, cited in Green, 1991).

Due to the partial nature of the estimation procedure in PLS, where only a portion of the model is involved at any one time, only that part requires the

largest multiple regression needed to be found. Looking at the model specification, the largest of two possibilities was: (1) the block with the largest number of formative indicators or (2) the dependent latent variable with the largest number of independent latent variables influencing it (Chin & Newsted, 1999). In this research all latent variables have been modeled as reflective. The dependent latent variable with the largest number of independent latent variables influencing it was task performance, with five paths going into it. Thus, the largest regression at any one time consists of five independent variables. Assessing a medium effect size as defined by Green (1991), a minimum sample size of 91 was needed to obtain a power of 0.80. With a large effect size, the sample requirements drops to 42. PLS analysis, wherein a sample size of 92, had no problem detecting structural paths up to 0.588 and loadings of 0.60 and 0.80. In other words, sample size was appropriate for PLS analysis.

The PLS Graph v3.0 program had no problem identifying the proposed model. Using PLS Graph, the ability of the model to account for the sample covariances is not available. Instead, closer attention was paid to the predictiveness of the model. Following recommendations from Chin and Newsted (1999), the R^2 for dependent latent variables, the Stone-Geisser test for predictive relevance, and Fornell and Larcker's avagrage variance extracted measure was used to assess predictiveness, whereas bootstrap resampling procedures were used to examine the stability of estimates. Explained variance of latent variables was ranging from 15.9% to 50.8% which was satisfactory. According to Chin (1998), most of the loadings should be at least 0.60 and ideally at 0.70 or above, indicating that each measure is accounting for 50 percent or more of the variance of the underlying latent variable. Standardized paths should be at least 0.20 and ideally above 0.30 in order to be considered meaningful. Item loadings are presented in Appendix E, showing that most loadings were above 0.70. All path coefficients are shown in Figure 6.1, and Table 6.4 shows the significance of five paths. The structural paths and loadings seem to be of substantial strength. The AVE measures exceeded the square of the correlation between any two constructs, which provided evidence for construct validity.

6.6 Summary

A two-phased approach was used to assess the research model. First, a confirmatory factor analysis of the reflective measures was done. And second, partial least square was used to assess the proposed relationships. The measurement model defines the construct (latent variables) that the model will use, and assigns observed variables to each. The structural model defines the causal relationship among these latent variables. The arrows between the latent variables represent the structural connections. The measurement model

uses factor analysis to assess the degree that the observed variables load on their latent constructs. The structural model estimates the assumed causal relationship among the exogenous and endogenous latent constructs. The results of the analysis, summarized in Table 6.5, will be discussed further in the next chapter.

Hypotheses	**Results**
H1a: Transplant's perceived role conflict is negatively related to task performance	*Not supported (significant in opposite direction)*
H1b: Transplant's perceived role ambiguity is negatively related to task performance	*Supported*
H2a: Complementary core competencies are negatively related to transplant's role conflict	Not supported
H2b: Complementary core competencies are positively related to transplant's role ambiguity	*Supported*
H2c: Complementary core competencies are positively related to transplant's task performance	Not supported
H3a: Client managerial persistent expectations are negatively related to transplant's role conflict	*Supported*
H3b: Client managerial persistent expectations are negatively related to transplant's role ambiguity	Not supported
H3c: Client managerial persistent expectations are positively related to transplant's task performance	Not supported
H4a: Relational norms are negatively related to transplant's role conflict	Not supported
H4b: Relational norms are negatively related to transplant's role ambiguity	*Supported*
H4c: Relational norms are positively related to transplant's task performance	Not supported

Table 6.5. Results from hypotheses testing.

7. Discussion of results

The purpose of the confirmatory research was to develop and test a comprehensive model for examining individual level role stress and work performance of transplants in IT outsourcing; the environmental stressors in an IT outsourcing arrangement, transplants' perception of role stress, and the effects of role stress on task performance. Drawing on prior research from the fields of information management, marketing, organization and management, theories were employed as the theoretical foundation for the model. Empirical data was first collected through three exploratory internationally based research case studies, and then a survey was distributed to transplants of one IT outsourcing arrangement. The results partly supported the proposed model.

In the first section of this chapter, the major findings of this study will be summarized and discussed. This is followed by a discussion of potential limitations of the study and suggestions for future research in section two. And finally, the third section present potential implications for researchers and practitioners, and an overall conclusion of the study is given.

7.1 Discussion of major findings

Findings from exploratory case studies indicated that transplants perceived role stress as they got moved from client to vendor organizations. Consequently, the goal of the confirmatory survey has been to examine role stress and task performance among transplants in an IT outsourcing arrangement. Including all or most of the sources of role stress and job characteristics in a single study poses significant challenges to the trade-offs between completeness and parsimony (the quality of being careful with resources). For this initial study of role stress in IT outsourcing arrangements, the researcher addressed this trade-off by focusing on outsourcing characteristics that have received attention in the literature (to maintain comparability) and which have been reasonably well-grounded in theory (to maintain conceptual soundness).

Therefore, this study focuses on two dimensions of role stress (role conflict and role ambiguity) and three outsourcing arrangement stressors (persistent expectations, complementary core competencies, relational norms), and examines their influence on work outcomes (measured as task performance). The results support the negative influence of role ambiguity on task performance, and the positive influence of role conflict on task performance. The survey also identifies outsourcing arrangement stressors that serve as antecedents of role stress. In addition, potential time constraints, i.e. the time

differences of transfer among the two groups of transplants, were analyzed, but found to be not significant.

7.1.1 Effects of role stress on task performance

Role stress are generally conceptualized using two interrelated constructs: role conflict and role ambiguity (Rizzo et al., 1970; Nygaard & Dahlstrom, 2002). *Role conflict* occurs when a transplant believes that the expectations and demands of two or more members of his or her role set are incompatible (e.g., role expectations from a vendor manager and a client manager). Strength of ties between a transplant and client is not unlikely because of previous employment. *Role ambiguity* relates to the perceived lack of information a transplant needs to perform his or her role adequately and his or her uncertainty about expectations of different role set members. The business relationship between client and vendor organization is negotiated over some time during the outsourcing project, but transplants experience an overnight change in their role as they are transferred from client to vendor organization. On large contracts it is not unlikely that transition activities may last from 18 months to more than 2 years (Lacity & Willcocks, 2000a). In this survey data was collected in the transition phase of a selected outsourcing arrangement. Two groups, A and B, of respondents had been transferred from client to vendor 17 months and 7 months prior to the survey.

Conventionally, the linear influence of role stressors on task performance has been examined, suggesting that role stress has significant dysfunctional (negative) effects on task performance. This confirmatory research was looking for supporting evidence from the field of IT outsourcing. The influences of role stress on task performance were hypothesized to be negative for both role conflict and role ambiguity. As expected, the path from role ambiguity to task performance was negative, meaning higher levels of role ambiguity decreased task performance. Contrary to what was hypothesized, the path from role conflict to task performance was positive; meaning, a higher level of role conflict was associated with higher levels of task performance.

Previous studies in other fields have examined relationships between role stress and effectiveness, yet the results do not unequivocally support the hypotheses of a negative relationship (Nygaard & Dahlstrom, 2002). Researchers have proposed alternative perspectives to the linear effect of role stress on job performance; the relationship appears to be (1) a variant of the Yerkes-Dodson Law, or (2) a three-phase model known as General Adaptation Syndrome, and (3) influenced by a moderator effect. Below, these three alternative models are discussed.

Yerkes-Dodson Law has been used in describing an inverted U-shaped curve relating role stress to task performance (Michaels et al., 1987; Singh, 1998).

Thus, one might speculate that increased arousal improves performance only up to a certain point, after which further increase in arousal is linked with decrements in performance levels. The positive relationship between role conflict and task performance, found in the survey, may be explained by Yerkes-Dodson Law, because heightened role conflict improved task performance. This explanation will apply up to a certain point, at which continued increase in role conflict will reduce the task performance level. Applying Yerkes-Dodson Law as a theoretical reason to explain the relationship found in this research, the conflict variable can be modified via the square term. For example, in a simple regression model, a curvilinear model with one turning point can be modeled with the equation $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_1^2$ where β_0 is the intercept, X_1 is the linear effect of role conflict, and X_1^2 is the curvilinear effect of role conflict. For interpretation purposes, the positive quadratic term indicates a U-shaped upward curve, while a negative coefficient indicates an inverted U-shaped downward relationship. An inverted U-shaped relationship is supported if (1) the coefficient for a linear term is positive (e.g., β_1), (2) the coefficient for a quadratic term is negative (e.g., β_2), and (3) both coefficients are significant (Singh, 1998). The signs are reversed for a U-shaped relationship.

Selye (1959) offers a contrasting perspective in his presentation of the General Adaptation Syndrome (G-A-S) as a three-phase model of reactions to stressors. The alarm phase is characterized by increasingly lower levels of performance. For example in an IT outsourcing arrangement, where transplants immediately after transfer to a vendor organization increase their perception of environmental stressors, which lower their task performance. During the reactance phase, performance factors increase and resistance to stress increases. Selye (1974) uses the term “eustress” to describe positive consequences of stress and “distress” to describe negative consequences of stress. Eustress is accompanied by coping behaviors that enable people to overcome stress and accomplish tasks that are considered worthwhile. Beyond some threshold, however, the exhaustion phase is observed, in which reactions are similar to those in the initial phase. The periodicity outlined in G-A-S augments the hypotheses examined in prior research. The linear effects offered in many studies are embedded in the initial and final phases of the function (negative relationship in the alarm phase and the exhaustion phase). The function also incorporates logic from Yerke’s and Dodson’s (1908) research on habit formation to account for nonlinear influences of stress. This relationship is incorporated into G-A-S function by a positive relationship in the reactance phase. Applying the General Adaptation Syndrome on the relationship, the conflict variable can be modified via the sine function. A curvilinear model with two turning points can be modeled with the equation $Y = \beta_0 + \beta_1 X_1 + \beta_2 \text{sine}(X_1)$ where β_0 is the intercept, X_1 is the linear effect of role

conflict, and sine(X_1) is the curvilinear effect of role conflict. An inverted sine-shaped relationship is supported if (1) the coefficient for a linear term is positive (e.g., β_1), (2) the coefficient for a sine term is negative (e.g., β_2), and (3) both coefficients are significant.

The non-linear relationships discussed above require the creation of an additional variable to represent the changing slope of the relationship over the range of the independent variable. This focuses on the relationship between one single independent variable (role conflict) and the dependent variable task performance. Singh (1998) has investigated the interaction effects of other independent variables and role stressors on job performance. He found that task variety buffers the effect of role conflict on job performance. In his research, salespeople faced fewer dysfunctional consequences of role conflict when task variety was high. This is termed moderator effect, which occurs when a third independent variable causes the relationship between a dependent and an independent variable to change depending on the value of the moderator variable. The moderator effect is represented in multiple regressions by a term quite similar to the polynomials described earlier to represent nonlinear effects. The moderator term is a compound variable formed by multiplying X_1 by the moderator X_2, which is entered into the regression equation. The moderated relationship was represented as $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_1X_2$ where β_0 is the intercept, X_1 is the linear effect of role conflict, X_2 is the linear effect of client managerial persistent expectations, and X_1X_2 is the moderator effect of client managerial persistent expectations on role conflict.

To determine whether the alternative models were significant, the analyst first estimated the original (unmoderated) equation and then estimated the moderated relationships. If the change in R^2 was statistically significant, then a significant effect of the alternative model was present. Appendix G shows regression with task performance, role conflict, and the additional non-linear and interaction variables.

First, The General Adaptation Syndrome was represented by $Y = \beta_0 + \beta_1X_1 + \beta_2\text{sine}(X_1)$ in Model 2. Both coefficients of independent variables were significant, but their sign was not as expected to represent the alarm phase, reactance phase, and exhaustion phase. The proposed Model 2 suggested increased performance in the alarm phase, decreased in the reactance phase, and again increased performance in the exhaustion phase. And thus we found no support for the General Adaptation Syndrome.

Second, an inverted U-shaped relationship was represented as $Y = \beta_0 + \beta_1X_1 + \beta_2X_1^2$ in Model 3. Both coefficients of dependent variables were significant, but their sign was the opposite of what could be expected applying

Yerkes-Dodson Law. The proposed Model 3 suggested an upward U-shaped curve, and thus we found no support for Model 3.

Third, the interaction effect was represented as $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_1X_2$ in Model 3. The specific interactional influences appear significant, including the interactive positive influence of role conflict and client managerial persistent expectation ($\beta_3 = 0.129$, $p < 0.01$). In addition, role conflict ($\beta_1 = -0.526$, $p < 0.01$) had the proposed dysfunctional effect. In other words, client managerial persistent expectation appeared to buffer the effects of role conflict on task performance.

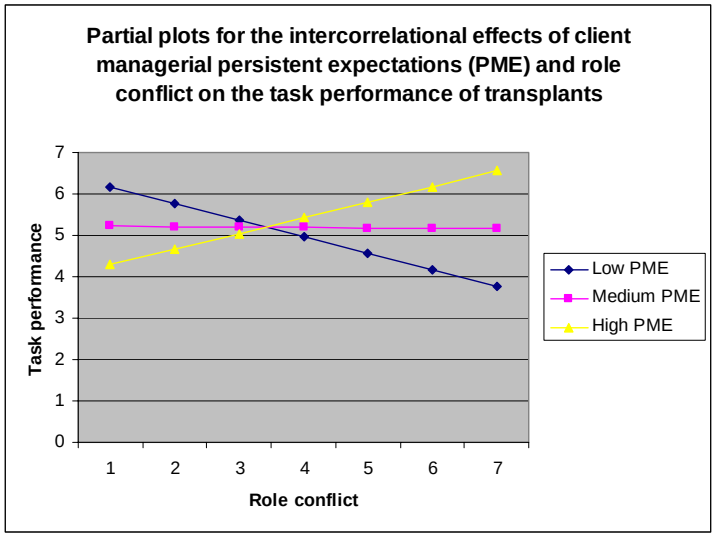

Figure 7.1. Interaction effect of role conflict and client managerial persistent expectations on task performance.

As indicated in Figure 7.1, role conflict has a negative effect on task performance when client managerial expectations are at a "low" level. Role conflict has a positive relationship with task performance when client managerial persistent expectations are at a "high" level. As such, transplants face fewer dysfunctional consequences of role conflict when client managerial persistent explanation is high. Prior research has not reported such effects. An explanation of these results was sought, and thus, follow-up interviews with three randomly selected transplants were conducted. Findings from these interviews are reported later in section 7.1.4. Other buffering effects

were sought both in survey data and case-studies, but no such effects were found.

7.1.2 Effects of outsourcing arrangement stressors

As expected all three outsourcing arrangement stressors affected transplants' perception of role stress. Client managerial persistent expectations had a significant positive affect on role conflict; meaning, higher levels of expectations gave higher levels of conflict. As client managerial expectations persist, transplanted IT workers perceive role conflict. The phenomenon of client managerial persistent expectations was identified by Ho et al. (2003). They also found that persistence of expectations had a distinctive positive influence on client managerial perception of contractor performance. This is interesting, because transplants' perceived higher levels of persistent client managerial expectations also perceived higher levels of role conflict, which in turn was positively related to their self-reported task performance. This indicates the presence of an outsourcing arrangement stressor. The proposed positive relationship between client managerial persistent expectation and role ambiguity was found not significant.

Relational norms were found to have a significant negative effect on role ambiguity, meaning that more clearly defined roles and procedures (higher levels of relational norms) reduced the perception of uncertainty about a transplant's role. Kern and Blois (2002) studied the establishing of norms of behavior in a single IT outsourcing relationship. They concluded that the need for establishing relational norms was not recognized by the parties involved, and that the failure of the consortium was due to the issue of "norms." In this research, perception of relational norms had a significant negative impact on role ambiguity. Meaning, the better defined roles of behavior, the less the transplant's perceived confusion about his or her role. In turn, higher levels of role ambiguity had a negative effect on task performance. This indicates that relational norm is an outsourcing arrangement stressor. The proposed negative relationship between relational norms and role conflict was found not significant.

According to Quinn (1999), developing best-in-the-world capabilities is crucial in designing a core competence strategy. Unless a company is best-in-the-world at an activity, it is someone else's core competency. Transplants' perception of complementarities in core competencies had a significant negative effect on perception of role ambiguity. Clearly defined firm borders and work responsibilities reduces a transplant's perception of role ambiguity. In turn, and not surprisingly this had a positive effect on task performance. Complementary core competencies are recognized as an outsourcing arrangement stressor. The proposed negative relationship between

complementary core competencies and role conflict was found not significant.

Hypotheses proposed alternative positive relationships between the three outsourcing arrangement stressors — complementary core competencies, client managerial persistent expectations, and relational norms — and a transplant's individual task performance. However, no such direct effects were found significant. A possible explanation of these results is that the relationship measures of outsourcing arrangement stressors and task performance concealed important complexities of the variable. For example, relational norms can be judged both positive and negative. Perhaps, for the workers transplanted, there are established new procedures and routines for communicating with the client. Some transplants may view this as positive, others as negative, depending on individual disposition or preferences. Complementary core competencies might also be judged both positive and negative among transplanted IT workers. Positive among some transplants, e.g., demarcation of work, specialization and job design. Negative among other transplants, e.g., they are not allowed anymore to work with client business process (which was really the reason for attending the client company). And likewise, persistence of expectations may be judged differently depending on the strength of ties with the previous client manager. In sum there was found no significant direct effect of outsourcing arrangements stressors on task performance.

As stated by Fevre, Matheny, and Kolt (2003) stress is the response to stressors in the environment. The stressors identified in this research describe three different external forces, or outsourcing arrangement characteristics, influencing transplants' individual level of role stress. In this part of the research, focus has been on how transplants interpret environmental stimuli and how these interpretations lead to experiences of role conflict and role ambiguity.

7.1.3 Potential time constraints

As this research was using cross-sectional data, where two groups of transplants got transferred at different points in time, it was interesting to know whether differences between sample averages was significant. A two-sample test was found appropriate. The *t*-test assesses the statistical significance of the differences between two independent sample means. The two different transfer times represented a treatment with two levels. A treatment is a categorical independent variable observed that can be represented in various levels. In this research, the treatment was transfer time — Group A was transferred 10 months prior to Group B. To determine whether the two different transfer times were viewed differently (meaning that the treatment had an effect), *t* statistics was calculated. The *t* statistics is the ratio of the differ-

ence between the sample means to its standard error. If a statistically significant difference is found, the researcher can then examine the actual mean values to determine which group is higher on the dependent variable.

As predicted, those transplants represented in Group B (transferred 7 months prior to the survey) had higher level role ambiguity (M = 4.00, SD = 1.16) than those represented in Group A (M = 3.49, SD = 1.11). See Appendix H for pair wise comparison of means between all constructs of Group A and Group B. Levene's test for equality of variances, which is a test for homogeneity of variance, was not significant ($p > 0.05$). The variances can be assumed to be homogeneous and the equal variances' line of values for the *t*-test can be used. Although the average mean indicates a difference between the groups, it was not significant beyond the 0.05 level: $t(90) = -1.847$; $p = 0.068$. For all other constructs the differences in means was less than reported for role ambiguity, e.g., role conflict of Group B had a slightly higher level (M = 4.21, SD = 1.06) than Group A (M = 4.10, SD = 1.32), and again differences in means was not significant beyond the 0.05 level: $t(90) = -0.361$; $p = 0.719$. Thus, it was reasonable to assume equal variances.

According to Lacity and Willcocks (2000a), it is not unlikely that transition activities for large outsourcing contracts may last from 18 months to more than 2 years. This includes relationship activities such as establishing post-contract management structures and processes, but also implementing consolidation, rationalization, and standardization. Suppliers' bids are often based on cost-reduction tactics, such as consolidating data centers, standardizing software and hardware platforms, centralizing IT staffs, and so on. Implementing these projected savings might be unpopular among the transplants. The supplier needs the savings to earn profit on the account, and they have got the power to overcome transplants' resistance. In all three case-studies, reported in chapter 3, huge transition projects were set up. Old organizational structures were broken down, employees were replaced according to competencies; some of them got new managers and new colleagues, and some got new clients to support. Geographical relocation was also mentioned as a stressor. Prior to the confirmatory survey the outsourcer had just finished a huge transformation, integrating IT workers from client and vendor organizations. As transplants from Group A and Group B seemed to be a part of the same process, this may explain the findings (no differences in means and variance between the two groups).

The researcher also controlled for other constraints, such as gender, educational background, study field, years employed by the client company, current position at the vendor company. No significant differences between the two groups were found.

7.1.4 Transplants' interpretation of role stress

Three months after the survey, the researcher conducted follow-up interviews with three randomly selected transplants. In face-to-face meetings, the transplants were asked open questions about stressors in their outsourcing environment, their individual role stress and work performance. The meetings lasted for around one hour, and were tape-recorded. Transcripts were written immediately after interviews.

As all three transplants had previously participated in the survey, only a very short introduction was given by the researcher. The first question was about their individual perception of role stress. All transplants recognized role stress as an issue relevant for their own outsourcing arrangement. One transplant stated: "The terms and conditions of employment were handled with care, but our new role was not clearly defined." This referred to lack of clarity of transplants' behavioral requirement. Another transplant stated there were incompatible expectations from client and vendor managers. Client managers had both a professional attitude towards agreed upon service levels, he said, but also expectations towards delivery of extra services, such as on-site helping behavior or other activities which were not specified in the contract. Vendor managers had expectations towards delivery of cost-effective services. This was a stressful situation as one transplant reported: "We worked hard to satisfy both groups of stakeholders." The contractual side of the outsourcing arrangement was not the problematic one. Instead, the human side (e.g., personal relationships) of the arrangement stressed the transplants. As such, both role conflict and role ambiguity were recognized.

When asking transplants questions about how the stressful situation affected their work outcome, some interesting statements were given. "I don't think the quality of service has been reduced, but job satisfaction has been," one transplant stated. Asking the transplant "why," the researcher was told this was because of work pride. Transplants worked as hard as possible, trying to satisfy both previous (client) mangers and new (vendor) managers. Another transplant indicated a tight relationship between a client manager and a transplant as a reason for a transplant's high performance level. You see: "First, we perform according to agreed upon service levels, and then we do the extra services as we always have done." In the first couple of months this was ok, but as time went by this became more and more stressful." A third transplant stated: "You can live with the stress for a few months, but not for a very long time." The researcher was told that a number of transplants had quit because of the stressful situation, a larger number than vendor management had expected. The transplants interviewed were indicating that high levels of role stress were caused by high expectations from both client and vendor managers. For a period of time these expectations will cause high task performance. This explanation may explain the interaction effect of role

conflict and client managerial persistent expectation on task performance found in section 7.1.1. As time went by, things were going better, one transplant stated. But another transplant stated his organizational commitment was negatively affected by the stressful situation.

All three interviewees pin-pointed they had been a "full time employee." Meaning, their new institutional environment was very different from what they were used to. At the outsourcer transplants found clearly defined routines, procedures, and a rigid bureaucracy which they were not used to. They were told what to do and what not to do. Their influence was reduced. As one transplant stated, "Being employed by an outsourcer was both an advantage and a disadvantage. Your role is clearly defined, but it kills your creativity." There was no doubt that written material such as roles, responsibilities, terms and conditions, had affected their role perception.

Perception of stress was also affected by competence, one transplant stated. Many technicians and systems developers had made a career at the outsourcer. These transplants discovered their IT competence was at the core of the outsourcer, but not at the client where they came from. Consequently, their competence was regarded as useful at the outsourcer. These transplants had got the opportunity to learn more and to work on other accounts. Another one stated: "What gives me security and safety is my competence." At the outsourcer the transplants had the opportunity to develop, make a career, at a professional IT service provider.

Asking the transplants a final question about other potential factors influencing role stress, interesting reflections came up. "Some of us have an interesting job to do, and we are trying to control the situation by focusing 100% on the job," one transplant stated. Examples were transplants given a managerial appointment immediately after transfer, and transplants who continued working in projects. These individuals were not stressed by the outsourcing arrangment, the transplant claimed. Another transplant interviewed told the researcher he had a positive attitude towards the outsourcing. Shortly after the transfer to the vendor organization the transplant became a "problem manager" in a transformation project. The traditional problem solution structure had broken down, and the transplant had to work very hard with problem solving activities. By this the transplant was able to handle the stressful situation. This indicates that personality or individual dispositions my affect the perception of role stress.

These follow-up interviews were conducted to get a richer picture of the findings from the survey. Transplants confirmed recognition of individual level role stress. Through the interviews the researcher was able to deepen his understanding of some of the environmental stressors. Interviewees also proposed an explanation for the buffering interaction effect of role conflict

and client managerial persistent expectation. Transplants were also indicating other effects of role stress, such as dissatisfaction, decreasing organizational commitment, and intention to leave the organization.

7.2 Limitations and further research

Findings must be interpreted in the light of the study's limitations. First, cross-sectional data were used, and consequently the time sequence of the transfer could not be determined without any further analysis. Two groups were independently transferred, approximately ten months apart. The results of pair wise comparison of the two samples showed no significant differences, so we assumed equality of variances and equality of means. This should be analyzed further, e.g., it could be interesting to see if differences could be found when asking transplants closer to the transfer and even right before the transfer. Second, the respondent's task performance was measured as self-perception and these perceptions may not have corresponded exactly with the objective facts. The issue of self-rated versus supervisor evaluations of transplants' task performance are discussed separately in the following section. Third, because a limited sample of transplanted IT workers was used, caution is necessary in making generalization without additional empirical testing of the models. Fourth, the respondents provided all the measures of the explanatory and dependent variables and these measures were obtained at the same time by similar scaling procedures. Method variance therefore may have inflated the strength of some of the relationships.

7.2.1 Self-rated vs. supervisor evaluations of transplant's task performance

Researchers seem to agree that common method variance is a potential problem in behavioral research. Although random errors are problematic, systematic measurement errors are particularly serious because they provide an alternative explanation for the observed relationships between measures of different constructs that is independent of the one hypothesized (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). According to Podsakoff et al., one of the most widely used techniques that has been used to address the issue of common method variance is what has come to be called Harman's one-factor test. The basic assumption of this technique is that if a substantial amount of common method variance is present, either a) a single factor will emerge from the factor analysis or b) one general factor will account for the majority of the covariance among the measures. The principal component analysis conducted in this research generated six factors with eigenvalues of one or more, and an explained variance of the factors ranging from 24.470% (factor 1) to 4.006% (factor 6). The diagnostic technique indicates that no single factor accounts for all of the covariance among the items. Despite this, the

single-factor test is not evidence that the measures are free of common method variance.

In this research, transplants' task performance could potentially have been rated by supervisors, peers, and even by client managers or users. Scullen, Mount, and Goff (2000) demonstrated substantial bias in a variety of subjective evaluations, whether they are completed by managers, by self, by peers, or by subordinates. They found that 62 percent of the variance across managerial evaluations was due to rater bias effects, whereas only 27 percent of the variance was due to actual job performance. Levy and Sharma (1993) demonstrated that self-reports are significantly correlated with objective information, whereas managerial evaluations are not. The academic literature referred above finds no support for a low correlation between self-report and objective measures of performance; nor does it support a high correlation between managerial evaluations and objective measures of performance. There is no reason to presume differences in applying these findings to transplants of IT outsourcing. As transplants continue delivering ongoing services back to their previous employer, it is likely that they know their responsibilities and how to meet quality standards of these services. Transplants also know their responsibilities according to demands from their new employer. As indicated by respondents in follow-up interviews, transplants try to satisfy expectations and demands from both client and vendor managers. Nonetheless, these two groups of managers do not necessarily know the effort and quality of each individual transplant's work. Thus, there is no reason to believe that self-reported measures of transplant's task performance are less accurate than supervisor or client evaluations.

Research conducted by Sharma, Rich, and Levy (2004), suggests that salespeople's self-rated performance tends to be upward biased, but also that the amount of bias does not seem to vary across performance levels. They calculated managerial and self-ratings for three performance tiers — low, medium, and high performers. Managerial ratings of low performers were found to be significantly lower than high performers. However, there were no differences in managerial evaluations of the low and medium groups, and the medium and high groups. The results from self-ratings show significant differences between each of the three groups.

It is not unlikely that the transplants in the present study may have overestimated their performance levels, but such overestimations may not have affected the results. Furthermore, whereas performance rating by supervisors helps rule out the validity threats of the self-report and mono-methods, present research suggests that performance ratings conducted by supervisors may be even more biased than transplants' self-reported measures. Consequently, it is far from obvious that the extra effort involved in gathering data by supervisors could have produced better performance data.

7.2.2 Interpreting and modifying the research model

Drawing from the general literature on stress, Fevre et al. (2003) have developed a series of three tenets. First, stress is the response to stressors in the environment. By definition, stress is either good or bad or a combination of the two. Second, in addition to the amount of stress they cause, stressors can be identified by a series of characteristics: the timing of the stressor, the source of the stressor, the perceived control of the stressor, and the perceived desirability of the stressor. Third, whether stressors result in good stress and bad stress depends on the individual's interpretation.

In this research, three outsourcing arrangement stressors were found to influence transplants' perception of role stress. Two dimensions of role stress were role conflict and role ambiguity. Findings showed that outsourcing arrangement stressors affected the two dimensions of role stress, which in turn affected work outcome. The amount of stress and the sign of the relationship varied. Although the research model addressed environmental stimuli and individual perception of those stimuli, the impact of individual characteristics on transplants' interpretation of stressors was not addressed. The dimensions were neither defined as "good stress" nor as "bad stress."

Given the limitations above, the researcher encourages others to examine findings through more rigorous research designs and across different companies. We also recognize the value, in future studies, of extending the research models to (1) include the transplant's perception of one's locus of control, efficacy, and affective disposition; (2) identify even more outsourcing arrangement stressors; (3) examine more thoroughly transplants' response to role stress. In Figure 7.2, a revised research model is presented, which incorporates the three tenets of occupational stress drawn from Fevre et al. (2003).

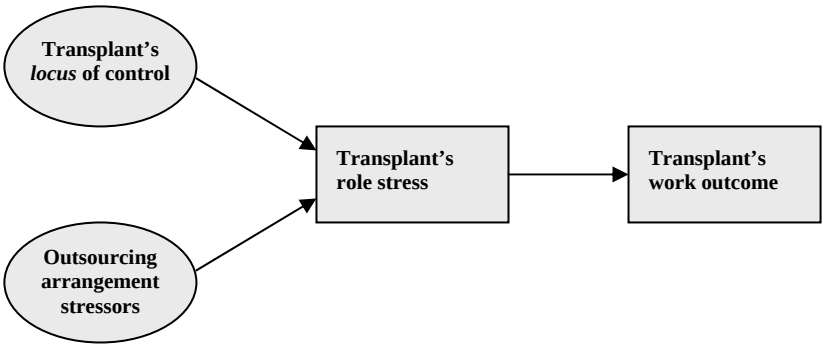

Figure 7.2. Revised research model.

7.3 Implications and conclusions

This research has been conducted in three phases. In the first phase, a thorough review of IT outsourcing based research was conducted. The findings from this part was that primary focus of IT outsourcing literature and research has been on organizational and relationship issues. Several organization and management theories were presented in chapter 2 as a means of understanding underlying factors of IT outsourcing. Stakeholder theory recognizes the importance of balancing the interests of all stakeholder groups. Agency theory recognizes that principal-agent relationships changes as a consequence of outsourcing and this will affect both organizational and personal relationships. In business, performance is always a matter of concern. Economic theories are addressing performance issues such as high economic benefits, low transaction costs, and effective contracts, but they are not directly addressing individual level performance. To understand the complexities of managing successful IT outsourcing relationships, and more specifically explore individual level attitudes, behavior, and performance in outsourcing arrangements, empirical research was needed.

In the second phase, three exploratory case studies were conducted. In-depth interviews were conducted of a variety of stakeholders, e.g., managers from both sides of the relationship and transplants. Important issues of managing successful IT outsourcing relationships were found, as reported in chapter 3. The ability to handle transfer of employees was found critical to the relationships studied. Transplants experienced radical changes in their careers as they got moved from client to vendor organizations. Finishing phase two, the researcher had confirmed that transplants were a significant stakeholder group affected by the outsourcing arrangement. Interviews also indicated occupational stress among transplants, which brought the research to its next phase.

Thus, the confirmatory survey conducted in the third phase, and reported in chapters 4 – 6, was based on findings from both previous phases. 103 IT employees transferred from client to vendor in a particular IT outsourcing arrangment participated in the survey. Role stress was identified as prevalent among transplants, and found to affect task performance. Three outsourcing arrangement stressors influenced their perception of role stress. Theoretical and managerial implications of this study are reported below.

7.3.1 Theoretical implications

During the past decade, the majority of research has looked into why companies outsource. More recently researchers have looked into the IT outsourcing relationship itself, investigating how different contractual structures and non-contractual aspects of the relationship influence outsourcing suc-

cess. More recent literature has looked at the vendor's ability to deliver value to their client companies. This research draws on prior work to identify predictors of transplants' work outcome. This research of role stress of transplanted IT workers in outsourcing arrangements has incorporated two underlying goals. The first goal was to examine influences of role stress on facets of effectiveness (measured as task performance). The second objective of this research was to identify IT outsourcing arrangement stressors that influence the transplanted IT worker.

IT outsourcing research has previously paid very little attention to individuals affected by outsourcing. This research found role stress as prevalent among transplants of IT outsourcing. In turn, perceived role stress was found to influence transplants' work outcome measured as task performance. Task performance was found to be positively influenced by role conflict and negatively affected by role ambiguity. Role stress has previously not been researched in the field of IS management. Two dimensions of role stress, conflict and ambiguity were hypothesized to have a negative relationship with task performance. As expected, the path from role ambiguity to task performance was negative, meaning higher levels of role ambiguity decreased task performance. Contrary to what was hypothesized, the path from role conflict to task performance was positive, meaning a higher level of role conflict was associated with higher levels of task performance. Alternative explanations were sought, using regression with task performance, role conflict, non-linear and interaction predictors. Alternative perspectives were examined, such as a variant of the Yerkes-Dodson Law, a three-phase model known as the General Adaptation Syndrome, and a moderator influence. The non-linear models of Yerkes-Dodson and General Adaptation Syndrome were found not significant. But, the interaction effect of role conflict and client managerial persistent expectations on task performance was found significant. Role conflict has a positive relationship with task performance when client managerial persistent expectations are at a "high" level. As such, transplants face fewer dysfunctional consequences of role conflict when client managerial persistent expectation is high. Prior research has not reported such effects.

Lee and Kim (1999) investigated outsourcing partnership based on a social, rather than an economic perspective, and they found factors such as participation, communication, information sharing, top management support, age of relationship, and mutual dependencies, as factors influencing the partnership quality. This research indicates that individual level role stress is influencing individual level task performance. In turn, it might influence the partnership quality and the success of the outsourcing arrangement.

Three outsourcing environmental characteristics were found as stressors affecting the level of perceived role stress among transplants. The literature

review of IT outsourcing theories suggested three outsourcing characteristics to be studied as potential stressors. Complementary core competencies were found to have a significant negative impact on role ambiguity. A clear distinction of competencies, and division of labor, makes it easier for the transplant to understand his or her new role, and thus role ambiguity was lowered. Likewise, the existence of outsourcing arrangement relational norms had a significant negative impact on role ambiguity. Clear definition of procedures and responsibilities of the relationship made it easier for the transplant to understand his role, and thus role ambiguity was lowered. As proposed, persistence of client managerial expectations was found to have a positive impact on role conflict. The higher perceived expectations the higher was perception of role conflict.

Fevre, Matheny, and Kolt (2003) recommended a research concentration on the individual interpretation of environmental stressors, and further, a research on characteristics of environmental stressors associated with the experience of stress as eustress or distress. This research has studied an individual interpretation of outsourcing arrangement stressors, and also the unexplored moderator effect of role stress on task performance.

7.3.2 Managerial implications

Although the context, pattern of results, and method limit the extent to which generalizations can be drawn from this research, some tentative recommendations should be acknowledged. When transplants experience stress, they interpret environmental stimuli individually based on their own experience and preferences. Transplants are in this research recognized as an important stakeholder group that is affected by, and affects the IT outsourcing arrangement.

Firstly, when employees can be supported to make positive interpretations of the outsourcing arrangement, support should be given. This may necessitate investments in coaching and personnel development. Second, when demand and resources can be modified to reduce stressors identified by employees as distress, then management should seek to address these stressors.

The following are remedies for managers in dealing with issues of role stress and work outcomes among transplants of IT outsourcing:

- Develop detailed procedural guidelines for handling different outsourcing relationship situations. Relational norms will increase transplants' role clarity, reduce role ambiguity, and this will in turn enhance his/her task performance.
- Reduce client managerial persistent expectations. Although less likely to affect task performance directly, this option is likely to af-

fect transplants' role conflict. In the long term, role conflict will affect work outcome.

- Increase the complementary core competencies of client and vendor organizations. Complementary core competences are likely to reduce transplants role ambiguity, and they will have greater latitude in task performance.

Based on a role stress analysis in IT outsourcing arrangements, this research suggests that each of the preceding options is plausible because (1) reduction in role ambiguity invariably increases task performance, (2) reduction of client managerial persistent expectations helps reduce role conflict and increase work outcomes, and (3) an enhanced understanding of outsourcing parties' complementary core competencies is likely to decrease the level of role ambiguity, and in turn increase task performance.

Finally, management must not seek to manage stress to an optimal level much less induce stress in their employees, as part of any endeavor to increase performance. Common management practice assumes that a reasonable amount of pressure, anxiety, or fear in the environment leads to higher performance among employees than if stress is not present (Fevre et al., 2003). The study has neither been on what is "good stress" or "bad stress", neither has it been on how managers attempt to maintain stress at optimal levels. There is no convincing evidence, neither in the rigorous literature on stress nor in this research.

7.3.3 Conclusions

The objective of this study has been to add to the collective understanding of managing successful IT outsourcing relationships, specifically by focusing on transplants' role stress and task performance. Accordingly, this study (1) brought to the surface three potentially salient outsourcing arrangement stressors (complementary core competence, client managerial persistent expectation, and relational norms); (2) applied these outsourcing arrangement stressors as antecedents to the attitudinal and subjective individual perception of role stress; and (3) investigated the individual transplant's experience of role stress as leading to higher or lower task performance. The researcher believes that each of these points represents a significant contribution to our collective understanding of transplants' situation in IT outsourcing arrangements.

The findings of this research are applicable to most IT outsourcing relationships where transfer of human (and physical) assets is a part of the outsourcing arrangement. Findings may also be relevant for other types of outsourcing where transfer of human assets is present.

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Appendix A – Review of IT outsourcing based research

Title/ authors	***Research method***	***Scope of the research***	***Key conclusions/ findings***
"Determinants of information technology outsourcing: a cross-sectional analysis" (Loh & Venkatraman, 1992a)	Survey of 57 US firms	Degree of IT outsourcing explained by cost structures and economic performance	The degree of IT outsourcing is positively related to both business and IT cost structures, and negatively related to IT performance.
"Diffusion of information technology outsourcing: influence sources and the Kodak effect" (Loh & Venkatraman, 1992b)	Survey of 60 IT outsourcing contracts	Influence sources in the diffusion of IT outsourcing	Adoption of IT outsourcing is motivated more by internal influence than by external influence amongst the user organizations.
"The etiology of information systems outsourcing" (Ang, 1993)	Survey of 226 US banks	Development of a theoretical model of IS outsourcing synthesizing economic, managerial-behavioral, and institutional factors	The study found that external production cost advantages in the service provider markets motivates outsourcing of IS in both large and small banks. Large banks were affected by internal institutional influences of unbundling support services, while small banks were affected by the level of transaction cost present in outsourcing arrangements, as well as the external institutional influences.
"The information systems outsourcing bandwagon" (Lacity & Hirschheim, 1993)	Case studies of 14 companies that faced outsourcing decisions	Outcome and scope of outsourcing decisions	Practical advice for negotiating contracts and suggests that IT outsourcing does not always lead to cost reductions.
"Strategic outsourcing" (Quinn & Hilmer, 1994)	Conceptual, supported by several business examples	Ways to determine core competencies and which activities are better performed externally.	Companies can substantially leverage their resources by: 1) developing a few well-selected core competencies of significance to customers, 2) focusing investment and management attention on them, and 3) strategically outsource many other activities.

Title/ authors	*Research method*	*Scope of the research*	*Key conclusions/ findings*
"How to manage an IT outsourcing alliance" (McFarlan & Nolan, 1995)	Case research	When to outsource and how to structure and manage the relationship	What determines success or failure is managing the relationship less as a contract and more as a strategic alliance.
"Financial and strategic motivations behind IS outsourcing" (McLellan et al., 1995)	Seven case studies in the banking industry	Why and how managers outsource IS functions considered 'core' to the success of the business	Firms were undertaking outsourcing to change organizational boundaries, to restructure, to mitigate technological risks and uncertainty, to access emerging technology, to manage IS department, and to business and IT strategy.
"Decision to outsource information systems functions: testing a strategy-theoretic discrepancy model" (Teng, Cheon, & Grover, 1995)	Sample of 188 companies	Decision to outsource information systems	Decision to outsource is based on gap between actual and desired level of IS resource performance; manifested in the form of gaps in information quality and IS support quality.
"IT outsourcing relationships: an exploratory study of inter-organizational control mechanisms" (Davis, 1996)	Exploratory case studies into two IT outsourcing relationships — Xerox/EDS, Kodak/IBM	Governance control mechanisms when firms were interested in developing a partnership model	Three governance control mechanisms — price, authority, and trust — appear when companies are forming partnership with their IT vendors.
"The risks of outsourcing IT" (Earl, 1996)	Unspecified methodology, based on discussions with senior executives and IT managers	Limits to IT outsourcing	Identifies 11 risks in outsourcing: weak management, inexperienced staff, business uncertainty, outdated technology skills, endemic uncertainty, hidden costs, lack of organizational learning, loss of innovation capacity, dangers of an eternal triangle, technological indivisibility, and fuzzy focus.
"The effect of service quality and partnership on the outsourcing of information systems functions" (Grover, Cheon, & Teng, 1996)	Survey of 188 IS executives	Relationship between IT outsourcing and its success.	Outsourcing success is found to be highly related to the degree of outsourcing of two IT functions, systems operations and telecommunications.
"The value of selective sourcing" (Lacity et al., 1996)	Conceptual	Sourcing scope, financial outcome	A framework to clarify sourcing options and aid managers in deciding which IT functions to contract out and which to retain in-house.

Title/ authors	*Research method*	*Scope of the research*	*Key conclusions/ findings*
"Strategic response to institutional influences on information systems outsourcing" (Ang & Cummings, 1997)	Survey of 226 US banks	Critical contingencies arising from competition that moderate institutional influences on information systems outsourcing	The propensity of banks to conform to or resist institutional pressures (on IS outsourcing) depends on the nature of institutional pressures, perceived gain in production economics, financial capacity to resist influences, and transaction cost considerations.
"Transformation of the IT function at British Petroleum" (Cross, Earl, & Sampler, 1997)	Longitudinal single case study, unspecified methodology	Transformation of the IT organization	A model of the transformed IT organization comprising seven components of transformation organized around purpose, process and people.
"Research report: diffusion of information systems outsourcing: a reevaluation of influence sources" (Hu, Saunders, & Gebelt, 1997)	Survey of 175 firms	Sources of influence in the adaptation of IS outsourcing	The combined effects of external media, vendor pressure, and internal communications at the personal level among managers, significantly influence the decision to adopt IS outsourcing.
"Achieving success in information systems outsourcing" (Saunders, Gebelt, & Hu, 1997)	Interviews of 34 managers who signed or administered their firms outsourcing contracts	Determinants of successful outsourcing	Primary reasons for outsourcing were technological considerations, cost savings, strategic considerations. Tight contracts were written for over three-fourth of companies reporting success.
"Production and transaction economies and IS outsourcing: a study of the US banking industry" (Ang & Straub, 1998)	Survey of 243 US banks	Influence of production costs, transaction costs, and financial slack on outsourcing decisions	Banks were strongly influenced by production cost advantages in their decision to outsource. Transaction economies were much less of a determinant while financial slack was not significant explanatory.
"Game theory and IS outsourcing contracts" (Elitzur & Wensley, 1998)	Conceptual, using game theory	Identify critical issues negotiating outsourcing contracts	Six critical issues are identified as: transfer of assets, risk sharing, technology upgrade, duration of contract, relationship management, and calculation of fee.

Title/ authors	*Research method*	*Scope of the research*	*Key conclusions/ findings*
"Towards a theoretically-based contingency model of information systems outsourcing" (Grover, Teng, & Cheon, 1998)	Conceptual	Using resource-based theory and resource-dependence theory from the field of strategic management, and transaction cost theory and agency theory from economics, they suggests implications for outsourcing research and practices	The phenomenon of IT outsourcing should be studied in an integrative manner.
"An empirical investigation of information technology sourcing practices: lessons from experience" (Lacity & Willcocks, 1998)	61 US & UK IT sourcing decisions	Management of computing and IS, measuring IS success, contract, strategic alliances, outsourcing of IS	First, selective outsourcing decisions had higher success rates than total outsourcing or total in-sourcing decisions. Second, senior executives and IT manager who made decisions together had higher success rates than either stakeholder group acting alone. Third, organizations that invited both internal and external bids had higher success rates than organizations that merely compared external bids with current IT costs. Forth, short-term contracts achieved higher success rates than long-term contracts. Fifth, detailed fee-for-service contracts had higher success rates than other types of fee-for-service contracts.
"Relationships in IT outsourcing: an exploratory research study of a conceptual framework" (Kern, 1999)	Survey of top 400 UK organizations, in-depth interviews in five case study organizations	Conceptual framework of IT outsourcing relationship	A multi-paradigmatic framework providing a comprehensive understanding of outsourcing relationships in terms of intent, contract, structure, interactions, behavior, and efficiency-outcome.
"Effect of partnership quality on is outsourcing success: conceptual framework and empirical validation" (Lee & Kim, 1999)	Survey of 74 outsourcing relationships	Investigating outsourcing partnership based on a social, rather than an economic, perspective.	Result indicates that partnership quality may serve as a key predictor of outsourcing success. Partnership quality was found to be positively influenced by factors such as participation, communication, information sharing, and top management support, and negatively affected by age of relationship and mutual dependency.

Title/ authors	*Research method*	*Scope of the research*	*Key conclusions/ findings*
"Strategic outsourcing: leveraging knowledge capabilities" (Quinn, 1999)	Conceptual, using concept of core competencies and business examples	Designing core competence strategy	Outsourcing for short-term cost-cutting does not yield nearly as much as outsourcing for longer-term knowledge-based system or strategic benefits. Developing best-in-the-world capabilities is crucial in designing a core competency strategy. Unless the company is best-in-the-world at an activity, it is someone else's core competency.
"IT outsourcing in insurance services: risk, creative contracting and business advantage" (Willcocks & Lacity, 1999)	Single case study	Risks in IT outsourcing	The case illustrates 10 major risk areas in IT outsourcing arrangements. Through awareness of risks and careful handling, the company studied was found to be achieving business advantage from a total outsourcing strategy.
"Modelling the price, performance, and contract characteristics of IT outsourcing" (Domberger, Fernandez, & Fiebig, 2000)	Analysis of 48 contracts for IT support and maintenance	Modelling the price, performance and contract characteristics that are relevant to IT outsourcing.	The study suggests that first-term contracts were more expensive than repeat contracts, possibly due to the higher risk and uncertainty often associated with newly awarded contracts.
"Making more by doing less: an analysis of outsourcing and its effects on firm performance" (Gilley & Rasheed, 2000)	Survey of 94 top executives in manufacturing firms	The study attempted to determine the performance implications of outsourcing strategies.	Although no direct effect of outsourcing on performance was detected, outsourcing interacted with firm strategy and environmental dynamism to predict performance.
"IT outsourcing: frameworks for conceptualizing practice and perception" (Hancox & Hackney, 2000)	Semi structured interviews with IT mangers from 13 public sector organizations and 7 local authorities in UK	Assess usefulness of four conceptual frameworks — core competencies, transaction cost economics, agency theory, and partnership — in an exploratory study of practice and perception of outsourcing	The study suggests that core competencies may not be a major issue in respect of ITO. Elements of TCE could be found. In terms of agency, the participants demonstrated some neutrality where they indicated that there was little perceived client conflict in contracting relations. Recognition of partnership was more usually found in public sector organizations, as local authorities had more additional constraints.

Title/ authors	*Research method*	*Scope of the research*	*Key conclusions/ findings*
"The myths and realities of information technology insourcing" (Hirschheim & Lacity, 2000)	14 case studies	Generate insights into best sourcing practices by comparing successes and failures	Four archetypes of insourcing: 1) senior executives enable internal IT managers to cut costs, 2) IT managers terminate failing outsourcing contracts, 3) IT managers defend insourcing, and 4) senior executives confirm the value of IT.
"Contract, control and 'presentiation' in IT outsourcing: research in thirteen UK organizations" (Kern & Willcocks, 2000)	Findings from 13 UK-based organizations	The role of the outsourcing contract and its purpose for ensuring control over the client's outsourcing destiny	The contract has a legal function; the contract attempts to presentiate service levels; the contract assures client control over the outsourcing venture.
"Developing a framework for analyzing IS sourcing" (King & Malhotra, 2000)	Conceptual	Developing a framework for the consideration of internal markets as an alternative to IS outsourcing.	Identifies short term operational impacts (efficiencies, cost savings, service levels) mid term tactical impacts (performance, control, risk sharing), and long term strategic impacts (core competencies, learning competencies) that should be addressed both in research and practitioners' decision to outsource.
"Relationships in IT outsourcing: a stakeholder perspective" (Lacity & Willcocks, 2000a)	Conceptual	Customer-supplier relationships	An IT outsourcing relationship framework, that focuses on three key elements: 1) relationship stakeholders, 2) relationship types, and 3) six relationship phases and their related activities.
"Survey of IT outsourcing experience in US and UK organizations" (Lacity & Willcocks, 2000b)	Survey of 101 UK & US CIOs	Current market practices and experience	IT outsourcing continue to grow and evolve. Benefits of selective sourcing are: cost reduction, re-focus of in-house staff, improved IT flexibility, better quality services, access to scarce IT resources. Downside of selective sourcing includes: increased transaction costs, potential lack of integration, cooperation, and coordination among multiple sources.
"Outsourcing innovation: the new engine of growth" (Quinn, 2000)	Conceptual, using concept of core competencies and business examples	How do you stay ahead, when everyone around is innovating?	Higher innovation return can accrue from outsourcing. Innovation calls for the complex knowledge that only a broad network of specialists can offer — resource limits, specialist talents, multiple risks, attracting talent, speed.

Title/ authors	*Research method*	*Scope of the research*	*Key conclusions/ findings*
"Place, space and knowledge work: a study of outsourced computer system administrators" (Schultze & Boland, 2000)	Ethnographic fieldwork	Work practice of a group of outsourced computer systems administrators — the struggle to negotiate the place-space duality	The contractor's writing served to create an informational body that removed them from the confines of a particular place and technology. Allowing their "real" bodies to move on to newer technologies, responsibilities and organizations. The idealized place they yearned for was one that gave them security and safety through mobility and independence.
"On the performance of technology-sourcing partnership: the interaction between partner interdependence and technology attributes" (Steensma & Corley, 2000)	Survey of 95 sourcing arrangements	Technology attributes, organizational interdependence, sourcing performance	Using a knowledge-based perspective, a contingency model suggests that the imitability, uniqueness, and uncertainty with a technology interact with partner interdependence to influence sourcing outcomes (performance).
"Work outcomes and job design for contract versus permanent information systems professionals on software development teams" (Ang & Slaugther, 2001)	Empirical	Contract vs. permanent IS professionals	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. In-depth interviews suggest that these results can be attributed to how organizations assign jobs to the two groups of professionals.
"Outsourcing information systems: drawing lessons from a banking case study" (Baldwin, Irani, & Love, 2001)	Single banking case study	Decision to insource or outsource IT/IS	Identifies motives for outsourcing decision to be strategic and organizational, political, technical, and economic.
"The hidden costs of IT outsourcing" (Barthélemy, 2001)	Survey of 50 companies	Identifying costs that managers can't pinpoint	Hidden costs are identified as: vendor search and contracting, transitioning to the vendor, managing the effort, transitioning after outsourcing (switching or reintegrating).

Title/ authors	*Research method*	*Scope of the research*	*Key conclusions/ findings*
"Exploring the supply-side of IT outsourcing: evaluating the emerging role of application service providers" (Currie & Seltsikas, 2001)	Initial survey of 250 SMEs and case study among 28 ASPs	Exploring the supply-side of IT outsourcing; a comparison of traditional outsourcing and application outsourcing	ITO is moving into a industry centric wave. A shift from traditional one-to-one outsourcing relationship to a one-to-many relationship where an ASP provides an outsourcing solution to several clients remotely over the Internet or a VPN.
"The impact of the client-vendor relationship on information systems outsourcing success" (Goles, 2001)	Survey	Ascertain the components of an effective relationship, and explore the link between that relationship and outsourcing success or failure	A set of constructs that comprise a successful relationship was identified and tested. The study demonstrated that customers and vendors have different expectations for each party's responsibilities and behaviors. It also showed that each party measures success differently.
"Global information technology outsourcing" (Lacity & Willcocks, 2001)	Case studies	How to gain business advantage	Organizations must develop a comprehensive outsourcing strategy in order to achieve more than modest improvement of service and cost reduction. IT functions must develop a set of core capabilities that must be insourced.
"The impact of knowledge sharing, organizational capability and partnership quality on IS outsourcing success" (Lee, 2001)	Survey of 223 IS managers in Korea	Relationship between knowledge sharing and outsourcing success	Knowledge sharing is one of the major predictors for outsourcing success. Organizational capacity to learn or acquire the needed knowledge from other organizations is a key source of successful knowledge sharing. Partnership quality is a significant intervening factor between knowledge sharing and outsourcing success.
"Culture, power and politics in ICT outsourcing in higher education institutions" (Allen, Kern, & Mattison, 2002)	Three British higher education institution (HEI) case studies	The impact of culture, organizational power and politics in outsourcing	Outsourcing represented a potential threat to academic culture. It was the outcome of intra-HEI power struggles, and it was also caused by departments increasing their fight to retain control over ICT. The ITO arrangements were highly politicised processes. Outsourcing service providers was used as change agents.

Title/ authors	*Research method*	*Scope of the research*	*Key conclusions/ findings*
"Information technology outsourcing in Australia" (Beamount & Costa, 2002)	Six exploratory interviews, survey of 277 informants	Identify reasons for outsourcing, and factors that contribute to success	Three most important factors for outsourcing were identified as: access to skills, improved service quality, and managers' ability to focus on core business activities. Factors most associated with success were cultural match and nature of contractual arrangement.
"Norm development in outsourcing relationship" (Kern & Blois, 2002)	Single case study, BP Exploration	The role of norms within networks	The need for establishing norms of behavior that was appropriate for the outsourcing consortium arrangement was not recognized by the parties involved. The failure of the consortium was the issue of "norms".
"Exploring relationships in information technology outsourcing: the interaction approach" (Kern & Willcocks, 2002)	Exploratory research into 12 organizations	Håkansson's (1982) interaction model applied on IT outsourcing relationships. Key elements are the interaction process, the parties involved, the environment, and the atmosphere.	The research identified certain factors in IT outsourcing relationships not captured satisfactory by the interaction approach, namely the centrality of the contract, the importance of formal processes, and the hidden cost of relationship management.
"The winners curse in IT outsourcing: strategies for avoiding relational trauma" (Kern, Willcocks, & van Heck, 2002)	Conceptual, re-analyzing longitudinal case research database of 85 IT outsourcing arrangements	Identifying the right supplier and contract bid	The Winners' Curse occurs when the winner of an auction or bidding event systematically bids above the actual value of the objects or service and thereby systematically losses. The experience places considerable pressure on an outsourcing venture and relationship to the point where re-negotiation or early termination becomes the only option.
"Do make or buy decisions matter? The influence of organizational governance on technological performance" (Leiblein et al., 2002)	Sample of 714 production decisions	Relationship between outsourcing decisions (governance choice) and technological performance	Neither outsourcing nor internalization per se results in superior performance. Rather, a firm's technological performance is contingent upon the alignment between firms' governance decisions and the degree of contractual hazards.

Title/ authors	***Research method***	***Scope of the research***	***Key conclusions/ findings***
"Making the HR outsourcing decision" (Adler, 2003)	Extensive literature review and a single case study	What and when to outsource HR services	Six factors can help companies determine which HR process to outsource and which to retain: dependency risks, spillover risks, trust, relative proficiency, strategic capabilities, and commitment versus flexibility.
"The information technology outsourcing risk: a transaction cost and agency theory-based perspective" (Bahli & Rivard, 2003)	Conceptual, using prior research as well as transaction cost and agency theory	Conceptualization of IT outsourcing risk	A framework for conceptualization and measurement of risk applied to IT outsourcing — scenarios, likelihood or risk factors occurring, risk mitigation mechanisms, and the consequences.
"The hard and soft sides of IT outsourcing management" (Barthélemy, 2003a)	In-depth study of 50 IT outsourcing cases	The impact of hard (contract) and soft (trust) sides of IT outsourcing outcomes	Simple IT outsourcing may be managed with hard side only and complex IT outsourcing with soft side only. Simultaneously used, trust can take over from contract when the limits of the contract have been reached. IT outsourcing efforts managed through 'neither hard nor soft side' are doomed to fail.
"The seven deadly sins of outsourcing" (Barthélemy, 2003b)	Conceptual, based on in-depth analysis of 91 outsourcing efforts	Lessons learned from failed outsourcing	Reasons why outsourcing fail: 1) outsourcing activities that should not be outsourced, 2) selecting the wrong vendor, 3) writing a poor contract, 4) overlooking personnel issues, 5) losing control over the outsourced activity, 6) overlooking the hidden costs of outsourcing, 7) failing to plan an exit strategy.
"Portfolios of Control in Outsourced Software Development Projects" (Choudhury & Sabherwal, 2003)	Five case studies	Control in outsourced information system development projects	Portfolios of control are dominated by outcome controls, especially at the start of the project. Behavior controls are often added later in the project, as are controls aimed to encourage and enable vendor self control. Clan controls are used when the client and the vendor share goals.

Title/ authors	*Research method*	*Scope of the research*	*Key conclusions/ findings*
”When subordinates become IT contractors: persistent managerial expectations in IT outsourcing” (Ho et al., 2003)	Mixed-method: 147 survivors of a single government IT organization	Persistence of managerial expectations in an IT outsourcing context where the traditional relationship between supervisor and subordinates changes to one of client-manager and contractor (client-vendor perspective)	Findings show that role overload, the presence of strong ties between manager and contractor, and the lack of prior outsourcing experience increased the persistence of managerial expectations. In turn persistence of expectations had a distinctive positive influence on managerial perceptions of contractor performance.
“Management control systems and trust in outsourcing relationships” (Langfield-Smith & Smith, 2003)	Single case study	Examine how control mechanisms and trust are used to achieve control of outsourced IT operations	Characteristics of the transaction, environment and parties, can be used in the design of control systems and trust in outsourcing relationships
“From the vendor’s perspective: exploring the value proposition in information technology outsourcing” (Levina & Ross, 2003)	28 interviews from a single long-term client-vendor case study	Vendors’ ability to deliver economic and management benefits to their clients	Vendor's efficiency is based on the economic benefits derived from the ability to develop a complementary set of core competencies. This ability, in turn, is based on the centralization of decision rights, and shared with clients through formal and informal relationship management structures.
“What will it take China to become a competitive force in offshore outsourcing? An analysis of the role of transaction costs in supplier selection” (Qu & Brocklehurst, 2003)	Conceptual, outlining a framework for analyzing transaction costs	Uses the framework for pinpointing where China is unable to compete in the supply of IT outsourcing	Transaction costs are almost as significant as production costs when it comes to offshore outsourcing. The paper concludes with a review of the policy implications for the Chinese Government.
“A transaction cost model for IT outsourcing” (Aubert, Rivard, & Patry, 2004)	Survey of 335 firms	Relying on TCE, the paper proposes and tests an explanatory model of IT outsourcing behavior.	Uncertainty is the major deterrent to outsourcing; firms seem to outsource more readily activities having low uncertainty. While the level of technical skills is the most important reason to outsource.

Title/ authors	***Research method***	***Scope of the research***	***Key conclusions/ findings***
"An empirical investigation of IT outsourcing versus quasi-outsourcing in France and Germany" (Barthélemy & Geyer, 2004)	Survey; 160 senior IT executives in Germany and France	Determinants of the out-sourcing versus quasi-outsourcing decisions.	Quasi-outsourcing was introduced as firms setting up their own IT subsidiary. Findings shows that the decision to quasi-outsource is strongly influenced by IT activity asset-specificity, size of IT department, internal organization of IT, and institutional environment (e.g., *Mitbestimmung* in Germany).
"IT outsourcing success: a psychological contract perspective" (Koh et al., 2004)	Sequential qualitative-quantitative approach of IT outsourcing project managers in Singapore (15 interviews and sample of 370 project mangers)	Critical customer-supplier obligations in IT outsourcing relationships and the impact of fulfilling these obligations on outsourcing success	Results showed the existence of a psychological contract between customers and suppliers. Outsourcing success showed a significant positive relationship with five supplier and four customer obligations. Supplier obligations were: clear authority structures, taking charge, effective human capital management, effective knowledge management, effective knowledge transfer, and building effective inter-organizational teams. Customer obligations were: clear specifications, prompt payment, close project monitoring, and project ownership.
"Trust-building mechanisms utilized in outsourced IS development projects: a case study" (Lander, Purvis, McCray, & Leigh, 2004)	Single in-depth case study	Describe trust-building mechanisms used between different stakeholders over the course of a ERP implementation project.	The results indicate that the various stakeholders did not encounter previously identified stages of building trust. Significant differences were found in the use of trust-building mechanisms among top-level managers, project team members, users, and outsourcers.
"IT outsourcing strategies: universalistic, contingency, and configurational explanations of success" (Lee, Miranda, & Kim, 2004)	311 firms in South Korea	Exploring the effects of IT outsourcing strategies on outsourcing success	Findings indicate superiority of configurational approach over universalistic and contingency perspectives explaining outsourcing success.
"Transformational outsourcing" (Linder, 2004)	20 case studies	Outsourcing as a means of achieving radical organizational change	Four varieties of transformational outsourcing are rapid startup, pathway to growth, change catalyst, and radical renewal.

Title/ authors	*Research method*	*Scope of the research*	*Key conclusions/ findings*
"Preparing for utility computing: The role of IT architecture and relationship management" (Ross & Westerman, 2004)	Outsourcing experiences of eleven firms	Explore the potential impact of utility computing on firm's outsourcing practices	Utility computing will shift firm's objectives for outsourcing from a cost emphasis to an emphasis on strategic agility. Vendor relationship management and architecture design capabilities will continue to play key roles, as firms seek the benefits from utility computing.
"Taking the measure of outsourcing providers" (Feeny et al., 2005)	Multiple research bases; longitudinal studies of IT, business process, application, and off-shore outsourcing arrangements.	Develop a framework for helping client companies evaluate BPO suppliers	BPO suppliers possess delivery, transformation, and relationship competencies. Twelve supplier capabilities were identified. To ensure performance, client must identify which competencies to asses, evaluate supplier strengths, and remain involved in the business processes.
"Financial performance, CEO compensation, and large-scale information technology outsourcing decisions" (Hall & Liedtka, 2005)	Public available data for 51 firms outsourcing all or a large portion of their IT function during 1993 – 2001	The extent to which financial factors and managerial (CEO) self-interest influence the decision to outsource	CEOs make irreversible large-scale IT outsourcing decisions due to factors that include firm financial desperation, firm cash needs, and the desire to maximize personal compensation.
"The impact of IS sourcing type on service quality and maintenance efforts" (Park & Kim, 2005)	Survey; 107 responses from 28 organizations	Effects of IS sourcing on service quality and maintenance	Outsourced systems seemed to entail a higher level of service quality than insourced systems. The sourcing type did not influence the maintenance efforts. System type and age influenced the service quality and maintainers effort.
"IS outsourcing management competence dimensions: instrument development and relationship exploration" (Shi, Kunnathur, & Ragu-Nathan, 2005)	Large scale survey; 205 IS executives	Theoretical development and empirical testing of IS outsourcing management competence	Three second-order IS outsourcing management competence factors — informed buying, contract management, and relationship management — capture necessary organizational capabilities to plan and execute various IS outsourcing activities for both economic and intellectual benefits.

Note: The review included the following major IS journals from year 2000, to the most current volume available by November, 2005; *European Journal of Information Systems, Information & Management, Information Systems Research, Journal of Information Technology, Journal of Management Information Systems, MIS Quarterly*, and *MIT Sloan Management Review*. Promising articles were followed back to their origin, whether based in articles, books, or dissertations.

Appendix B – Case study client interview protocol

e.g., SAS manager

1. Could we begin by talking about your involvement in the outsourcing venture?
2. What is your understanding of why your company actually outsourced? What arrangements was SAS locking for? What functions were outsourced, and what functions were kept in-house?
3. How did your company go about selecting CSC? Why CSC?
4. How is the contract structured? What are the costs? How long is the contract? What role does the contract have in the relationship?
5. How many people were transferred? And how did you handle this transfer? What kind of resources and knowledge did your company kept in-house?
6. What are the most important stakeholders involved in the outsourcing? And what are the main activities and goals of each group?
7. What kind of performance, outcomes and benefits do each stakeholder group expect from the outsourcing arrangement? And what personal, technological or situational factors influence their expectations? Role overload, strength of ties, trust in outsourcer, outsourcing experience?
8. How do you manage or interact with other stakeholders? And how does your organization pay attention to key stakeholder relationships? How do stakeholders influence the outsourcing venture?
9. How did you handle the transition period? How did you find the vendor handled the transition period? What problems, issues or conflicts did you encounter?
10. What role do you play in managing the relationship? Could you describe the state of the relationship with SAS? Governance structures?
11. How do you perceive the vendor's operations? Has CSC been able to provide you with value added benefits? Examples? Are you achieving
12. your expectations and outsourcing intentions? Why not?
13. What are the upcoming challenges for you and the relationship?
14. Has your company an exit strategy?
15. Are there issues we missed that you wish to bring up?

Appendix C – Case study vendor interview protocol

e.g., CSC manager

1. Could we begin by talking about your involvement in the SAS account?
2. What is your understanding of why SAS actually outsourced? What arrangements was SAS locking for? What was outsourced?
3. How did SAS go about bidding? Who were you competing against? Why was CSC selected?
4. How is the contract structured? What is the size of the deal? How long is the contract?
5. How many people were transferred? And how did you handle this transfer? What kind of resources and knowledge did your company get from SAS?
6. What are the most important stakeholders involved in the outsourcing? And what are the main activities and goals of each group?
7. What kind of performance, outcomes and benefits does each stakeholder group expect from the outsourcing arrangement? And what personal, technological or situational factors influence their expectations? Role overload, strength of ties, trust in outsourcer, outsourcing experience?
8. How do you manage or interact with other stakeholders? And how does your organization pay attention to key stakeholder relationships? How do stakeholders influence the outsourcing venture?
9. Could you describe the transitioning of SAS IT function? What problems, issues or conflicts did you encounter?
10. What role do you play in managing the relationship? Could you describe the state of the relationship with SAS? Governance structures?
11. Has CSC been able to provide SAS with any value added benefits? Examples?
12. What are the upcoming challenges for you and the relationship?
13. Are there issues we missed that you wish to bring up?

Appendix D – Questionnaire items

Construct	***Item***	***Statistics***
Complementary core competencies	1. I contribute different capabilities to [client company] 2. I have complementary strengths that are useful to [client company] 3. I have separate abilities that, when combined with [client company's] capabilities, enable them to achieve goals beyond their individual reach 4. I have the capability to envisioning [client company's] business processes which technology makes possible	Alpha = 0.735 Mean = 5.364 S.D. = 1.035
Client managerial persistent expectations	1. Be more willing to work extra hours 2. Perform my job more reliably 3. Volunteer to do more tasks over and above the service level agreement 4. Invest more in improving current skills to serve them better 5. Be more willing to put in a full day's work for a full day's pay 6. Suggest more initiatives on technology issues to the [client company]	Alpha = 0.878 Mean = 4.033 S.D. = 1.446
Relational norms	1. Flexibility in response to requests for changes is a characteristic of this relationship 2. The parties expects to be able to make adjustments in the ongoing relationship to cope with changing circumstances 3. When some unexpected situation arises, the parties would rather work out a new deal than hold each other to the original terms (item deleted) 4. The terms of an ongoing transaction are not renegotiable under any circumstances (r) (item deleted) 5. In this relationship, it is expected that any information that might help the other party will be provided to them 6. Exchange of information in this relationship takes place frequently and informally, and not only in accordance with a specified agreement 7. It is expected that parties will provide appropriate information if it can help the other party 8. It is expected that we keep each other informed about events or changes that may affect the other party 9. Problems that arise in the course of this relationship are treated by the parties as joint rather than individual responsibilities 10. The parties are committed to improvements that may benefit the relationship as a whole, and not only the individual parties 11. The parties in this relationship do not mind owing each other favors 12. An important feature of this relationship is that neither party would do something damaging to the other party	Alpha = 0.885 Mean = 4.393 S.D. = 1.022
Role con-	1. I receive assignments without the manpower necessary	Alpha = 0.795

flict	to complete the task 2. I have to circumvent rules or policies to complete assignments 3. I receive incomplete requests from two or more people 4. I am often given assignments without adequate resources and materials to execute them 5. I work on unnecessary tasks for [client company] (item deleted) 6. I have to work under vague directives or orders	Mean = 4.135 S.D. = 1.262
Role ambiguity	1. I feel certain about how much authority I have (r) 2. I know what my responsibilities are (r) 3. I know exactly what is expected of me (r) 4. I have just the right amount of work to do (r) 5. I know exactly what is expected of me (r) 6. Expectation of what has to be done is clear (r) 7. I perform work that conforms with my values (r)	Alpha = 0.842 Mean = 3.624 S.D. = 1.141
Task performance	1. I try to work as hard as possible 2. The quality of my work is top-notch 3. I intentionally expend a great deal of effort carrying out my job 4. I often put extra effort in carrying out my job 5. I almost always perform better than an acceptable level 6. I often perform better than expected from me	Alpha = 0.898 Mean = 5.263 S.D. = 0.966

Note: All measures employed a seven-point Likert scale from “1“ to “7 .”

Appendix E – Weights and loadings of measures

Construct	Items	Weight	Loadings	Standard err.	t-value
Complementary core competencies	CCC1	0.3455	0.7797	0.0827	9.4317
	CCC2	0.2481	0.5696	0.1509	3.7759
	CCC3	0.3820	0.8717	0.0778	11.2041
	CCC4	0.3304	0.7758	0.0972	7.9776
Client managerial persistent expectations	PME1	0.2361	0.8559	0.1102	7.7646
	PME2	0.2517	0.7799	0.1910	4.0829
	PME3	0.2003	0.8267	0.1262	6.5501
	PME4	0.1509	0.7344	0.1287	5.7060
	PME5	0.2460	0.8157	0.1350	6.0403
	PME6	0.1767	0.7048	0.1242	5.6763
Relational norms	FLE1	0.1360	0.7498	0.0635	11.7992
	FLE2	0.1626	0.7317	0.0923	7.9287
	INF1	0.1491	0.8116	0.0448	18.1175
	INF2	0.0164	0.2951	0.1458	2.0246
	INF3	0.1714	0.8824	0.0537	15.3233
	INF4	0.1512	0.7395	0.0682	10.8468
	SOL1	0.1721	0.7814	0.0424	18.4173
	SOL2	0.1581	0.8135	0.0420	19.3844
	SOL3	0.0628	0.4780	0.1078	4.4356
	SOL4	0.1424	0.7534	0.0517	14.5837
Role conflict	CON1	0.2543	0.7286	0.1222	5.9642
	CON2	0.3128	0.7048	0.1124	6.2699
	CON3	0.3522	0.8137	0.1041	7.8195
	CON4	0.1202	0.6968	0.1452	4.7988
	CON6	0.3113	0.7198	0.1003	7.1737
Role ambiguity	AMB1	0.1766	0.6728	0.0688	10.0714
	AMB2	0.2490	0.8587	0.0368	23.3231
	AMB3	0.1080	0.4924	0.1107	4.4473
	AMB4	0.2054	0.6959	0.0627	11.0941
	AMB5	0.2373	0.8569	0.0351	24.3831
	AMB6	0.1367	0.6736	0.0910	7.4035
	AMB7	0.2332	0.7538	0.0572	13.1687
Task performance	TAP1	0.1804	0.7398	0.0668	11.0704
	TAP2	0.1820	0.7882	0.0635	12.4205
	TAP3	0.2134	0.8366	0.0504	16.6007
	TAP4	0.2517	0.8920	0.0298	29.9377
	TAP5	0.2015	0.8598	0.0328	26.2352
	TAP6	0.1882	0.7801	0.0766	10.1782

Note: Both standard errors and t-values are for loading, not weights.

Appendix F – Results from confirmatory factor analysis

Construct	Items	1	2	3	4	5	6
Complementary core competencies	CCC1	0.766	0.034	0.008	-0.090	0.060	0.236
	CCC2	0.427	0.336	0.200	0.076	-0.100	0.062
	CCC3	0.814	0.166	0.020	0.001	-0.003	0.266
	CCC4	0.671	0.304	0.168	-0.079	-0.197	0.082
Client managerial persistent expectations	PME1	0.142	0.837	0.003	0.051	0.023	0.073
	PME2	-0.024	0.725	0.176	0.097	-0.034	0.240
	PME3	-0.022	0.840	-0.088	0.056	0.047	0.055
	PME4	0.056	0.735	0.072	0.047	-0.024	0.025
	PME5	0.183	0.786	-0.174	0.183	-0.006	-0.014
	PME6	0.277	0.665	0.008	0.095	0.059	-0.039
Relational norms	FLE1	0.133	-0.066	0.716	-0.030	-0.048	0.136
	FLE2	0.001	0.063	0.638	0.010	-0.021	0.113
	INF1	0.147	0.091	0.768	-0.033	-0.072	0.027
	INF2	-0.048	0.069	0.361	0.006	0.413	0.502
	INF3	-0.087	0.211	0.795	-0.137	-0.156	-0.077
	INF4	0.171	-0.095	0.732	0.048	0.008	-0.096
	SOL1	0.032	-0.094	0.759	-0.219	-0.216	-0.065
	SOL2	-0.027	0.083	0.804	-0.065	-0.092	0.002
	SOL3	0.023	-0.016	0.471	-0.324	-0.066	0.422
	SOL4	0.031	-0.087	0.745	-0.108	-0.299	-0.184
Role conflict	CON1	0.100	0.166	-0.019	0.743	-0.090	0.006
	CON2	-0.086	0.242	-0.112	0.501	0.413	0.076
	CON3	-0.186	0.200	-0.221	0.651	-0.024	0.006
	CON4	0.037	0.074	0.173	0.835	-0187	0.060
	CON6	-0.011	0.112	-0.203	0.663	0.221	0.133
Role ambiguity	AMB1	-0.015	-0.068	-0.390	0.316	0.206	-0.320
	AMB2	-0.044	-0.136	-0.361	0.276	0.451	-0.540
	AMB3	-0.133	-0.071	-0.217	0.412	0.267	-0.127
	AMB4	0.041	-0.037	-0.147	0.031	0.398	-0.633
	AMB5	-0.133	-0.075	-0.321	0.155	0.629	-0.499
	AMB6	0.052	-0.066	-0.151	0.536	0.384	-0.351
	AMB7	-0.181	0.149	-0.418	0.144	0.374	-0.438
Task performance	TAP1	0.110	-0.060	0.259	0.086	0.199	0.709
	TAP2	0.008	0.084	-0.031	-0.013	-0.069	0.827
	TAP3	0.050	0.009	0.277	0.131	-0.109	0.775
	TAP4	0.237	0.002	0.298	0.119	-0.079	0.798
	TAP5	0.278	0.149	0.109	0.015	0.140	0.799
	TAP6	0.224	0.167	0.082	-0.139	0.017	0.723

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Appendix G – Regression with task performance, role conflict, non-linear and interaction predictors

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,080(a)	,006	-,005	,96908	,006	,583	1	90	,447
2	,236(b)	,056	,035	,95003	,049	4,646	1	89	,034
3	,241(c)	,058	,037	,94873	,052	4,903	1	89	,029
4	,295(d)	,087	,056	,93942	,081	3,887	1	88	,024

a Predictors: (Constant), conflict
b Predictors: (Constant), conflict, sine-conflict
c Predictors: (Constant), conflict, u-shape-conflict
d Predictors: (Constant), conflict, expectation, conflict_x_expectation

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	5,009	,348		14,401	,000
	Conflict	,061	,008	,080	,764	,447
2	(Constant)	4,649	,380		12,247	,000
	Conflict	,183	,097	,239	1,889	,062
	Sine-conflict	,421	,195	,273	2,156	,034
3	(Constant)	6,946	,939		7,398	,000
	Conflict	-,961	,468	-1,255	-2,052	,043
	U-shape-conflict	,123	,055	1,354	2,214	,029
4	(Constant)	6,989	1,022		6,837	,000
	Conflict	-,526	,246	-,686	-2,138	,035
	Expectation	-,439	,239	-,657	-1,840	,069
	Conflict_x_expectation	,129	,054	1,257	2,381	,019

a Dependent Variable: performance

Appendix H – Pair wise comparison of group means

Group Statistics

		N	Mean	Std. Deviation	Std. Error Mean
competence	Group A	69	5,4348	,96697	,11641
	Group B	23	5,1522	1,21716	,25379
expectation	Group A	69	4,0435	1,48595	,17889
	Group B	23	4,0000	1,35121	,28175
relnorm	Group A	69	4,3942	1,02008	,12280
	Group B	23	4,3913	1,05223	,21941
conflict	Group A	69	4,1072	1,32691	,15974
	Group B	23	4,2174	1,06671	,22242
ambiguity	Group A	69	3,4990	1,11430	,13415
	Group B	23	4,0000	1,16457	,24283
performance	Group A	69	5,2802	1,01560	,12226
	Group B	23	5,2101	,82146	,17129

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
competence	Equal variances assumed	,214	,645	1,135	90	,259	,28261	,24889	-,21186	,77708
	Equal variances not assumed			1,012	31,775	,319	,28261	,27922	-,28630	,85152
expectation	Equal variances assumed	1,326	,252	,124	90	,901	,04348	,35012	-,65210	,73906
	Equal variances not assumed			,130	41,149	,897	,04348	,33374	-,63045	,71740
relnorm	Equal variances assumed	,064	,801	,012	90	,991	,00290	,24752	-,48884	,49464
	Equal variances not assumed			,012	36,775	,991	,00290	,25143	-,50666	,51246
conflict	Equal variances assumed	1,774	,186	-,361	90	,719	-,11014	,30536	-,71679	,49650
	Equal variances not assumed			-,402	46,541	,689	-,11014	,27384	-,66119	,44090
ambiguity	Equal variances assumed	,730	,395	-1,847	90	,068	-,50104	,27130	-1,04002	,03795
	Equal variances not assumed			-1,806	36,381	,079	-,50104	,27742	-1,06346	,06139
performance	Equal variances assumed	,014	,906	,299	90	,765	,07005	,23397	-,39477	,53486
	Equal variances not assumed			,333	46,246	,741	,07005	,21045	-,35350	,49359