

# Preface

## Overview of Outsourcing

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*Outsourcing* is defined as being one of allocating or reallocating business activities from an internal source to an external source (Schniederjans, Schniederjans, & Schniederjans, 2005, p. 3). Any business activity can be outsourced. All or part of any of the unique business activities in a functional area, like management information systems, which have been historically insourced can be outsourced today. Outsourcing, however, requires an agreement with an external organization. If a contract can be written to define any type of business activity between a client organization and its potential outsource provider, then that business activity can be outsourced.

Outsourcing is not a new concept according to James and Weidenbaum (1993, p. 42) but can find its origins in the practice of *subcontracting* production activities. For example, the use of external lawyers or information technology consultants can be viewed as outsourced services. Indeed, the classic “buy-or-make” decisions on service products, processes, and facilities, which companies have been making for many decades, are examples of outsourcing from external organizations (Russell & Taylor, 2003, p. 126). Regardless of its origin, outsourcing is not a revolution but an evolution of change in business organizations and the way they conduct business activities.

Outsourcing is viewed as one of the most important management strategies of our time. In a business survey of executives the most important reasons for outsourcing include among many items, cost savings, to gain outside expertise, to improve services, focus on core competencies and to gain access to technology (Goldsmith, 2003). The survey sought to ascertain the future outsourcing general trends by asking executives what outsourcing they planned to undertake in the future. A total of 35% of the executives said they would continue or expand outsourcing, 40% said they would continue but alter their outsourcing arrangements to better favor themselves, and 25% said they would reduce

outsourcing or choose to insource their work. These last two percentages reveal that the majority of their experiences in outsourcing did not completely satisfy the executives, requiring a need for a change in their future outsourcing strategy. Yet other research on outsourcing reveals significant expansion trends. According to Gartner, Inc. outsourcing will account for 53% of the total world-wide *information technology* (IT) service market, and is estimated to make up 56% of the market by 2007 (IT outsourcing likely to grow, 2004).

## **Outsourcing and Management Information Systems**

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Of the primary functional areas within any firm mentioned by Goldsmith (2003), the most commonly outsourced functional area is *information technology* (IT) which included all aspects of management information systems. Lackow's (2001) survey of the IT outsourcing industry revealed IT provider service categories included user support, voice network management, disaster recovery, software development, data network management, software maintenance, data center operations, IT strategy and planning, support services, application hosting, and business processes. The survey predicted IT outsourcing would continue and grow in importance. This prediction was confirmed by a later follow-up survey by Goldsmith (2003). This latter survey confirmed the prediction by estimating 79% of the U.S. firms outsourced IT and the current outsourcing industry provides a full range of services from small-scale projects to complete business process solutions. Other research by Lee, Huynh, and Kwok (2003) confirms clients continue to benefit from outsourcing IT. With projections of U.S. firms saving almost \$21 billion in IT expenses by offshoring from 2003 to 2008, it is difficult to argue against the potential cost savings reasoning for outsourcing IT (McDougall, 2004). This recurring theme is obvious in other IT outsourcing literature as well (Offshore outsourcing poised, 2004). What is new and only now beginning to surface is the recognition of including risk elements in the decision process (Bhattacharya, Behara, & Gundersen, 2003; "Discover Weighs the Risk", 2004; Offshore outsourcing poised, 2004; Negotiating the Contract, 2004). Indeed, the IT outsourcing clients in the industry are now starting to recognize that outsourcing risks can cause failed projects with greater costs and poorer quality than expected (Challenges to consider, 2004; Natovich, 2003; Offshoring call centers, 2004; Soliman & Chen, 2003).

## Problems with MIS Outsourcing

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While the general trend for outsourcing is ever increasing (Offshore outsourcing boosts, 2004) there are other observed trends (e.g., government anti-outsourcing legislation, the need to revise existing outsourcing arrangements, or *backsourcing* by experienced outsourcers, etc.) that indicate the current practice of outsourcing needs improvement if it is to be more than just a “make-or-buy” decision process.

With growth, there are always problems. As the outsourcing industry grows every year, there is an increased need to be more knowledgeable about this new industry, how it can benefit management of information systems, and improve business operations in general. There is an urgent need to be educated on issues, concepts, philosophies, procedures, methodologies, and practices of outsourcing. As noted in a report by Hall (2003), half of all outsourcing agreements fail because firms run risks by not performing appropriate analyses. For example, some organizations consider outsourcing as a means of migrating risk (e.g., the outsource provider takes on the risks of investing in human resources, technology, etc., while the client firm avoids those risks and simply pays a fee for the services). Yet Natovich (2003) reports that while some risks are absorbed by the outsource provider, the client assumes the set of risks inherent in the outsourcing arrangement in addition to most of the outsource provider assumed risks. Greaver (1999, pp. 37-58), Chorafas (2003, pp. 49-70), and Kern and Willcocks (2001, pp. 39-80) report dozens of differing types of risk and the possible range of concern managers should be wary of in undertaking outsourcing projects, while recognizing that some risks are valid and some are not depending on differing situations (Bahli & Rivard, 2005).

A careful and comprehensive analysis of outsourcing decisions and decision making is simply not being performed prior to many outsourcing ventures. Meisler (2004) reports international outsourcing fails 50% of the time because organizations have not considered the risky nature of this type of international business decision. After the fact, some firms today are reversing their international outsourcing decision, bringing it back to the country of origin (Metz, 2004). This is partially due to the perceived failure of outsourcing to achieve the expected gains. When managers set outsourcing goals of 75% cost reduction (Meisler, 2004), and then receive a 30% or 40% reduction, they undoubtedly view the outsourcing strategy as a failure, when in fact it may be a successful strategy for a client firm. It should be noted that in the previously Goldsmith (2003) survey of executives, the top five challenges for off-shore outsourcing include understanding cultural differences and dealing with political uncertainty (rated the top reason), evaluating contract performance, client firm's ignorance of what the outsource provider is doing for them, accountability, and the expenses of travel. These reasons, which find their basis in poor analysis and understand-

ing of outsourcing, represent a substantial barrier to growth in outsourcing. The same survey reveals that while 52% of the respondents are not even considering offshore outsourcing, 27% are planning on international outsourcing of some kind in the next three years.

Of all the reasons given for outsourcing failures, the one consistent reason is a lack of analyses of the outsourcing decision (Meisler, 2004). Specifically, client firms may fail to perform adequate analyses because their approach to the outsourcing decision lacks relevant quantitative analysis, despite the fact there have been many outsourcing books published in last decade. Most of these books treat the outsourcing decision as a conceptual process, rather than a quantitative analysis (Chorafas, 2003; Cullen & Willcocks, 2003; Gouge, 2003). Unlike quantitative methods, conceptual methods tend to focus on a more limited singular variable at one time (e.g., just cost, ignoring quality or other relevant variables). This can cause the analysis to possibly miss variable changes in dynamic relationship in the analysis. Outsourcing is clearly a dynamic, highly interrelated process of business activities involving many variables and requiring consideration of many factors. In a comprehensive review of the current literature Dibbern et al. (2004) revealed a substantial body of outsourcing literature but that problems remain unsolved. There is a clear need for both more qualitative as well as quantitative approaches to outsourcing to better improve the success rate of this important strategy for business performance success.

## Organization of the Book

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This book is organized into four sections, containing a total of 19 chapters. There are four chapters in **Section I**, entitled “Fundamental Issues in Information System Outsourcing.” The purpose of this section is to provide some of the basics in understanding where the outsourcing industry has come from, how it works, and how organizations incorporate outsourcing into their planning processes.

**Chapter I** focuses on how the outsourcing industry has evolved and where its organizational structure is taking it in an effort to support business operations. As the industry of outsourcing evolves, it impacts how business organizations are structured. This chapter reviews current literature and proposes two possible evolutions of how businesses motivate organizations to incorporate outsourcing as an integral strategy for success. The resulting trends show an evolution that may lead hierarchal business structures to incorporate temporary outsourcing alliance networks in the same way that general contractors in the construction industry have operated for years.

**Chapter II** presents an overview of the outsourcing phenomenon, focusing on the question of why, when, and what to outsource. It provides an extensive set of guidelines for business students to understand the nature of outsourcing. Drawing extensively on recent scholarly literature, this chapter presents a wide range of concepts, including causes that might lead a company to a decision to outsource and factors that contribute to an environment that is conducive to outsourcing. The question of what to outsource is answered by examining core competencies and critical success factors. The chapter also presents information about trends in outsourcing in specific countries and industries to help the reader understand what is possible.

**Chapter III** presents an overview of planning aspects for the outsourcing of information systems projects. The first major section of the chapter presents an historical perspective on the evolution of information systems outsourcing practices so the reader can understand subsequent sections of the chapter in context. It next deals with the need to examine goals, strategies, core competencies, and critical success factors as well as presenting all the functional areas of information systems that are candidates to be outsourced. Also included are discussions of the need to perform cost/benefits analysis and to consider cultural and other factors. The concluding section deals with all the factors that should be examined in preparing and administering outsourcing contracts.

**Chapter IV** lays out a set of steps for organizations to traverse in considering and crafting an outsourcing strategy for the firm. In general, outsourcing may include business process support, customer support, providing technology infrastructure, or software development services. Outsourcing deals may be even done by local or rural service providers in the same country as the client organization. Other arrangements may be negotiated with near-shore or offshore providers in different time zones. This chapter proceeds through the steps of strategic and tactical planning, addressing particular issues at each level, and concludes with operational level planning for outsourcing projects. Lessons learned from good techniques for integrating planning across the firm are included. Best practice methods and decision models for outsourcing are crafted from both outsourcing success stories as well as numerous failures, and are covered in subsequent chapters. This chapter includes suggestions for how to address and consider the option of outsourcing MIS projects as part of an overall Strategic Plan. Project management considerations in this decision are included. Ethical considerations such as humanitarian consequences and theological considerations are addressed.

In the next section of this book, **Section II**, entitled “Decision-Making Issues in Management Information System Outsourcing,” seven chapters are presented. The purpose of this section is to focus on the various decision-making situations found in outsourcing MIS and to identify the types of decisions, how best to

measure and make them, and what to avoid. Both theoretical and empirical results are presented in this section.

**Chapter V** presents the tactics and metrics an organization applies after having made a decision to use outsource providers. Tactics are used to define the nature and specifics of the outsourcing arrangement, as well as to select the contractual basis of the agreement. For these purposes, it is critical to align measures of performance compliance in the form of metrics on each MIS outsourcing relationship. When negotiating and establishing the terms of the outsourcing arrangement, management should ensure that appropriate performance metrics are identified and included, and that flexibility for change is built in to the contract. This chapter addresses some of the methods, as well as some of the metrics that might be used in such contract agreements. The use of contracts and service level agreements are discussed, as well as in-depth techniques for conducting validation and background checks on outsource suppliers. Sample outlines for service level agreement preparation and performance specifications are included for the practitioner.

**Chapter VI** develops a model that describes four forces that move organizations toward centralized IT contract management. Specifically, the model illustrates how centralizing IT contract management enhances organizational performance in four areas. First, centralizing IT contract management allows for a corporate level view of technology, which supports not only interoperability, but also optimizes software license inventory. Second, it combats vendor opportunism by creating a set of contract negotiators who have as much knowledge as the vendor's contract negotiators. Third, it enhances information retrieval by locating the physical contracts in a central location, which allows the legal department, project managers, and senior managers to quickly and reliably locate contract details. Fourth, it provides the proper motivation to project managers and contract negotiators by rewarding each job separately rather than by lumping the rewards for timely project completion together with the rewards for efficient contract negotiation.

**Chapter VII** starts with a discussion of corporate and government decision-making processes and management sciences that support development of decisions. Special decision-making considerations, trade-offs analyses, and cost-benefit studies all figure into decisions that result in outsourcing. Models of trade-offs and evaluation criteria are drawn from the management sciences. Some of these are management approaches, and models are used to justify MIS outsourcing decisions. Technologies that support different methods of decision-making include data warehouses and data mining, rules-based logic, heuristical processes, fuzzy logic and expert-based reasoning. These technologies are presented in the context of corporate planning processes that consider the ethics, payback, and rationales for outsourcing of MIS. This chapter also presents case studies that use these decision-making constructs to evaluate

outsourcing for MIS projects or for ongoing information services. Current and evolving technologies are presented and discussed in the context of managing and controlling outsourced MIS. Case studies are presented as a means to illustrate both good decision-making techniques as well as poor or inappropriate decisions that resulted in outsourced project failures.

**Chapter VIII** presents a process map of information systems outsourcing decisions and factors which influence the outcome of the outsourcing project at each decision point. The authors take a broad view of outsourcing projects and examine IS outsourcing successes and failures in context of project phase. Brief examples are provided to illustrate various outcomes of the decisions faced by both outsourcing vendor and client. The chapter also presents a summary of lessons learned about information systems outsourcing and recommendations for future research.

**Chapter IX** examines outsourcing decisions in information technology (IT) research that have yielded contradictory findings and recommendations when outsourcing all or some of their information systems (IS) activities. This chapter examines the potential problems a company may face when reconsidering the outsourcing decision. For this purpose, we conducted an empirical study in a European car manufacturing company that has followed the outsourcing alternative. The case analysed offers insights about the outsourcing decision process and the difficulties the company faced when trying to adapt the software developed to the new business requirements. The problems that came out pushed the company to move back to the internalisation of the IS functions. The case shows a greater involvement of users on in-house developed projects. Our findings indicate that outsourcing is a good alternative when the IS activity is a technical one which does not require specific knowledge of the company.

**Chapter X** explores the role that one factor, social capital, may have on the success of IT outsourcing. It extends current understanding of outsourcing success and failure by examining the effect of social capital on outsourcing success. In the chapter it is proposed that social capital has a potential impact on information technology (IT) outsourcing success. Specifically, it is theorized that social capital has an inverted “U” shape relationship with outsourcing success.

**Chapter XI** examines why the traditional “make-or-buy” decision (i.e., in-house sourcing or outsourcing) has been widely studied in the context of the theory of the firm and vertical integration. One of the most popular frameworks for examining this strategic decision has been the transaction cost analysis (TCA) framework. However, much of past research has focused on the make-or-buy decisions of product manufacturing activities, to the neglect of services. The make-or-buy decisions of services and service activities, due to their inherent characteristics (i.e., intangibility, inseparability, heterogeneity, and perishability) and the unique nature of their “production” and “delivery,” necessitate modify-



ing and revamping the existing framework. The authors develop and empirically test a conceptual framework that examines factors influencing a firm's decision to use outsourcing or in-house sourcing for a service (service activity).

In the next section of this book, **Section III**, entitled "Risk Issues in Management Information System Outsourcing," three chapters are presented. The purpose of this section is to focus on the critical and often overlooked issue of risk in outsourcing MIS. How risk can be identified, managed, and evaluated are topics covered in this section.

**Chapter XII** examines the metaphors found in the language of client corporations and outsourcing partners and explain how to look for compatibility when designing various types of information systems including traditional MIS, decision support systems, expert systems and AI, executive information systems, cooperative systems, and competitive systems. Many firms outsource creation of program code for management information systems, but not all experiences are successful. Although some researchers and practitioners are quick to blame failures on differing country cultures, this does not appear to be the reason. Rather it is the compatibility or differences in corporate cultures between the client company and the outsourcing partner that may help or hinder the development of quality systems. We explain how the development of certain types of systems can benefit from situations where more positive metaphors exist and offer some guidelines for the MIS practitioner, thereby minimizing risk and increasing the likelihood of a more successful client company-outsourcing partner relationship.

**Chapter XIII** examines risks in outsourcing IT operations. The fact that firms are turning to outside vendors in increasing numbers in order to meet their needs does not mean that outsourcing is without problems. Firms often enter outsourcing deals without considering risks or assuming that all risks lay with the external service provider. In this chapter, we provide an overview of IT outsourcing, its risks, and a model for managing those risks. We identify different firm-vendor configurations for sustaining long-term relationships aimed at diversifying risk over time and discuss the need for psychological contracts to manage such outsourcing relationships.

**Chapter XIV** provides a framework for evaluating and mitigating the risks associated with IT outsourcing projects. Outsourcing projects have been met with successes and many failures. The causes of such failures must be systematically investigated in order to provide managers guidance to avoid future risks from outsourcing projects. This chapter discusses the outsourcing relationship, highlighting the primary causes of project successes and failures, then offers a framework for evaluating vendor relationships to avoid contingencies that may lead to failure. This framework will serve as a guide for managers of firms seeking to outsource various IT functions, as well as managers of vendor firms who seek success in these relationships.



In the last section of this book, **Section IV**, entitled “Quantitative Methods in Management Information System Outsourcing,” five chapters are presented. The purpose of this section is to examine a variety of new and creative collection of quantitative methods that can be used to guide and plan outsourcing MIS.

**Chapter XV** examines the evaluation process on a global scale of potential outsourcing partners. In order for outsourcing to be successful, corporations must identify outsourcing partners that offer a good fit with the firm’s overall outsourcing strategy. Unfortunately, little has been written to aid corporations in making complex decisions involving the evaluation of potential outsourcing partners. This chapter presents a goal programming model that combines the concepts of global outsourcing, the management science technique of goal programming, and microcomputer technology to provide managers with a more effective and efficient method for evaluating potential IT outsourcing partners. The chapter extends the existing literature on outsourcing by applying a computer optimization model to outsourcing partner selection in a way that has not been done before.

**Chapter XVI** will stress MIS’s strides in R&D outsourcing, and will detail the risks and uncertainty associated with the process of outsourcing core areas of the business such as R&D. Moreover, this chapter will propose the use of real option analysis to assist in deciding: Why should a firm outsource R&D? and How does a company select a viable vendor using a two-stage process? This chapter includes a discussion of the cutting edge usage of outsourcing for R&D; and, to alleviate the R&D outsourcing risks, we will explore the two-stage vendor selection approach in information technology outsourcing using real options analysis.

**Chapter XVII** provides two real-world case studies of the application of real options to answer the question: “How do practicing planners and managers use and value flexibility in development projects?” The first case study we develop is based on the outsourcing decision-making process, more specifically, a two-stage vendor selection approach (applying real options theory) to adopting a supply chain management (SCM) system in a Shanghai-based transportation company. In the second case study, we use the example of the National Ignition Facility (NIF) to illustrate how decision-makers identify uncertainty and value flexibility in project analysis, and by deliberate decision, increase their optionality and thereby project value.

**Chapter XVIII** illustrates the development of outsourcing and supply-chain planning strategy needs to be based on compromised and more objective decision-making procedures. Although factors affecting business performance in manufacturing firms have been explored in the past, focuses are on financial performance and measurement, and neglecting intangible and nonfinancial factors in the decision-making planning process. This study presents development

of an integrated multicriteria decision-making (MCDM) model. This model aids in allocating outsourcing and supply-chain resources pertinent to strategic planning by providing a satisfying solution. The model was developed based on the data obtained from a business firm producing intelligent home system devices. This developed model will reinforce a firm's ongoing outsourcing strategies to meet defined requirements while positioning the supply-chain system to respond to a new growth and innovation.

**Chapter XIX** seeks to evaluate the dominant IT outsourcing contracts model (pay-later) as compared to an alternative model (pay-now) in light of changing economic conditions. We integrate practitioner observations in the spirit of mathematical transaction cost problems to develop a conceptual economic model to compare these two types of contracts. We uncover three very important facts which suggest that pay-now contracts are always at least as good as pay-later contracts, and pay-now contracts are better than pay-later contracts when the economy is volatile. These findings provide a rich insight into the problem of failing IT outsourcing contracts since the prevailing poor state of the economy. We further discuss the implications of our findings and suggest that simply shifting the contract from a pay-later to a pay-now will fix the IT outsourcing business model.

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