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THE MARKET VALUE OF IT OUTSOURCING INVESTMENT ANNOUNCEMENTS: AN EVENT-STUDY ANALYSIS

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Abstract

The market for information technology outsourcing has seen significant growth in the last decade (GartnerGroup, 1998). Companies use IT outsourcing to increase the efficiency of their globalization process, while maintaining core competency strength. As a result, the ability to manage effective IT outsourcing projects is of utmost important to the success of IT managers (Sambamurthy & Zmud, 2000). In addition, the ability to make an informed decision when buying and IT outsourcing is seen as a core capability for IT managers (Feeny and Wilcocks, 1998). However, the proper metrics to use to assess the decision to initiate an IT outsourcing engagement are still somewhat undefined. While the cost savings reaped through IT outsourcing are often attractive, traditional accounting measures may underestimate potential improvements in economic output brought about by an outsourcing engagement, such as streamlined business processes, better quality customer service, and a wider range of knowledge on technological offerings. One way information systems (IS) researchers can assess the business performance of IT outsourcing investments is by using market-based measures such as stock prices. This study addresses the question: Do IT outsourcing investment announcements affect the market value of the firm, and if so, how does the effect differ across the service industry versus the IT industry, and across project type? To answer these questions, we analyze the impact of IT outsourcing investment announcements on the common stock prices of publicly traded firms.

Keywords: IT outsourcing, event-study, business value of IT, investment announcements

Introduction

The bulk of research on the value of information technology (IT) outsourcing to the firm has been based on economic theory, and specifically transaction cost economics (Apte, 1990; Ang and Beath, 1993; Ang and Straub, 1998). Other research have looked at the factors of success in IT outsourcing, including institutional effects (Loh and Venkatraman, 1992; Ang and Cummings, 1997; Hu, Sanders, and Gebelt, 1997), as well as factors based on the resource-based view (Teng, Cheon, and Grover, 1995; Kern, 1997). Previous work has utilized the event-study methodology to examine shareholder's perception of IT outsourcing announcements across firm size and service vs. non-service firms. We extend this line of work by examining project type, as well as industry effects of service versus IT firms.

In order to understand the impact of IT outsourcing we must first clarify its definition. Grover, Cheon, and Teng (1996) define the outsourcing of information systems as "the practice of turning over part or all of an organization's IS functions to external service provider(s)". We combine this definition with that of Loh and Venkatraman, (1992), who define the outsourcing of information systems as "involving a significant user of resources – either technological and/or human resources – external to organizational hierarchy in the management of the Information Technology (IT) infrastructure." Thus we consider an outsourcing engagement to occur when one firm, the outsourcing firm, hires another firm, the vendor, to host, develop, or manage part of the IS functions of their business. In addition, as Lacity and Hirschheim (1993) point out, IT outsourcing is the decision to purchase and IT product or service that could be provided from *within* the firm.

This study addresses the question: Do IT outsourcing investment announcements affect the market value of the firm, and if so, how does the effect differ across the service industry versus the IT industry, and across project type? To answer these questions, we analyze the impact of IT outsourcing investment announcements on the common stock prices of publicly traded firms. We use the event-study methodology, which is the standard methodology in accounting and finance literature (Ex, Loderer and Mauer 1992), and has recently been used in several IS research studies (e.g. Im et al. 2001, Subramani and Walden 2001). The event-study methodology has the advantage of being able to capture both the risk and return consequences of an IT outsourcing investment since it focuses on the change in equity price, which is an unbiased estimate of *both* the risk and return consequences of the proposed IT outsourcing investment. For a sample of 172 IT outsourcing investments over a period from 1994-2001, we investigate whether IT outsourcing announcements have a significant effect on the market valuation of the firm. This paper is noteworthy for several reasons. First, to our knowledge, it is the first explore the expected effects of IT outsourcing across project types through the use of the event-study methodology. Second, it examines the affect on firm value of IT outsourcing announcements of different project types across firms in different industries.

Previous Findings

There are four main factors that have been identified in the literature as being of significant importance in the IT outsourcing decision (Hayes, Hunton, and Reck, 2000), these factors are: 1) Economies of scale and scope, 2) Importance of core competence, 3) Flexibility, and 4) Cost Reduction. We expect that all these factors to affect the market's reaction to an IT outsourcing announcement. First, IT outsourcing engagements can increase economies of scope for the outsourcing firm, as the IT outsourcing firm should provide a great wealth of knowledge and experience regarding IT outsourcing tasks, and therefore increase firm value (Loh and Venkatraman, 1992; Grover et al. 1996). Second, outsourcing of IT functions may allow firms to transfer their valuable resources to more value-added core competency functions (Quinn 1999). Third, IT outsourcing vendors offer flexibility to firms, as they ensure firms technological skill does not become technologically obsolete (Balakrishnan and Wernerfelt, 1986). Fourth, previous research has showed that cost reducing engagements positively effect a firm's value in the short-run; however, long-run expectations and effects of IT outsourcing projects aimed solely at cutting costs are still largely unclear (Quinn 1999).

In analyzing IT outsourcing announcements, we are analyzing the markets reaction to a firm's capability in selecting a partner, negotiating a contract, and their expected capabilities of managing the IT outsourcing engagement. The resource-based view asserts that firms are a collection of capabilities (Penrose, 1980); through developing valuable and rare capabilities, firms can ascertain a competitive advantage (Barney, 1991). Successful IT outsourcing engagements demand firms to have the capability of coordination (Earl, 1996). Thus, a firm's industry, and core competence, should play into the anticipated success of their undertaking and IT outsourcing engagement. Such anticipated success is best assessed through abnormal market returns.

The impact of announcements of outsourcing of information technology projects on common stock prices is computed using event-study methods commonly employed in the accounting and finance literature (Loderer and Mauer 1992) and recently in several IS research studies (e.g. Im et al. 2001, Subramani and Walden 2001). The event study method affords researchers the opportunity to measure stock price changes that can serve as estimates for the effectiveness of the firm in foreseeing and rapidly adapting to its changing environment (Brynjolfsson and Yang 1996). In an event study, the stock market's response to events that are often related to the release of information to the stock market is examined. Stock price is an unbiased estimate of risk and return on IT investments. It affords the opportunity for measurement of stock market reactions to the release of information, in this case information about IT outsourcing engagements. As has been demonstrated empirically, the semi strong form of efficient market hypothesis asserts that the market price fully reflects all publicly available information (Fama 1980). Consequently, if an event has information content, or is an information signal that alters investors' beliefs (Holthausen and Verrecchia (1990), Watts and Zimmerman (1986), Ziebart 1990), an abnormal stock price effect should be observed. In other words, if rational investors value both tangible and intangible aspects of IT outsourcing engagements, a change in stock price should approximate the true contribution of the IT outsourcing engagement to the firm's value.

Sample Selection Procedure and Data

We define the event as a public announcement of a firm's plans to begin an outsourced IT project. To this end, we collected data from a full text search of two leading news sources, *PR Newswire* and *Business Wire* over the eight-year period of January 1994-August (2001). Since these are large databases containing general business announcements, we ran several restrictive searches, of which the results to date are shown in Table 1. An article is considered to be a "relevant" IT Outsourcing announcement if one company is hiring, or signing a contract with another company in order to perform an IT related project.

In addition, announcements were deemed “useable” only for companies¹ that were traded publicly on major stock exchanges, including the NYSE, AMEX, or NASDAQ stock exchanges. Only IT outsourcing announcements of firms whose data on firm size are available in the COMPUSTAT data file were included. In addition, we collected the Standard Industrial Classification (SIC) codes of the various companies to control for industry issues.²

Each announcement title and body was reviewed to determine whether it represented an IT Outsourcing investment announcement or not. When there was more than one title on the same IT project, the earlier titled was retained. In addition, only those titles exclusively dealing with the beginning of an IT project were retained. For example, those announcements that contained information about the termination of an outsourcing engagement were eliminated from consideration. In addition, the Wall Street Journal Index was checked for news that might contaminate the price data (dividends, earnings, or other types of announcements) on the day before, the day of, and the day after the IT project announcement date.

Once the announcements had been collected and screened, the firms were then matched with data available on the University of Chicago’s Center for Research in Security Prices (CRSP) daily common stock returns tapes. Each announcement was then described as a **strategic project** or a **cost cutting project**. Strategic projects fell into the informate or transformate projects (Chatterjee, Richardson, and Zmud, 2001); whereas cost cutting projects were automate projects. Two of the research team members independently categorized each investment as being either strategic or cost cutting based on observation of claims made in the announcements. Aligned with the theory of transformate, informate, and automate, it was agreed that the classification would be based on the following criteria. An announcement would be classified as strategic if:

- The project represented an expansion of business into a new area
- The project was a first use of a technology among firms competing in that industry
- The project would result in the development of new generation IT for the industry
- The project would result in services/features/processes that competitors cannot provide

Announcements were to be classified as cost cutting (or non strategic) if the announcement indicated that:

- The firm was following a strategy or an implementation plan made by its competitors
- The project was intended to maintain/enhance an existing application
- The project was intended to automate an business function and automate

If an announcement could not be unambiguously classified as strategic or non-strategic (cost cutting) from the text in the announcement, it was placed in an unclassified category. The two independent categorizations by the research team members were then compared, and only when an announcement received the same classification by both researchers was it given that final classification, i.e. strategic, cost cutting (non-strategic), or unclassified.

Hypotheses

IT outsourcing initiatives undertaken by firms reflect an active decision to turn over part of an organization’s IS functions to an external service provider (Grover, Cheon, and Teng, 1996). Such a decision can be due to either a need to remedy an in-house project gone wrong, or alternatively can expand the functionality of the firm such that it is better able to exploit business opportunities which need a certain IT infrastructure. In the former case, the outsourcing announcement may send a negative signal, thus calling into question company performance in future periods. Conversely, IT outsourcing announcement regarding new strategic initiatives suggest that a firm is planning to take advantage of significant efficiencies through streamlining operational processes, or creating new capabilities. Thus, consistent with the signaling hypothesis (Fama, 1980), such strategic IT outsourcing announcements are a way for firms to convey favorable private information to investors. However, non-strategic initiative announcements may be a way of conveying non-favorable private information, such as a potential future decline in earnings due to poor in-house investments. These conflicting arguments suggest that firms announcing IT outsourcing initiatives are likely to either realize significant financial turmoil in the future, or they are likely to realize significant operational efficiencies, depending upon the type of project. Thus, when project type is not controlled for, we expect conflicting results to “wash” each

¹Company relates to the company embarking on the IT outsourcing project, not the hired vendor.

²SIC codes are used to differentiate industries. Firms with codes that being in 60-63 are finance and insurance firms and firms with codes that begin with 20-38 are manufacturing codes.

other out, such that there will be no overall significant abnormal stock market returns.³ Such an expectation is aligned with previous literature, which reveals the general wisdom regarding the value of IT outsourcing investments to the firm: “it depends”. Various factors influence whether a firm should outsource their IT function including if competition is high (McGuire and Staelin 1983), the internal and external costs of IT production (Clemons, Hitt, Snir 2000), the size of the company (Barthelemy 2001), the skills of the employees (Slaughter and Ang 1996), as well as the type of project (Chatterjee, Richardson, and Zmud, 2001). Thus, in the aggregate, when none of these factors are controlled for, we do not expect there to be a significant effect of IT outsourcing investment announcements on stock price, as some firms will see a positive reaction, and others a negative reaction, thus washing out the overall results.

Hypothesis 1 (H1): Stock price will not react significantly to announcements of IT outsourcing engagements.

Project Type

We view IT outsourcing projects as falling into two main categories, **strategic initiative projects** and **cost-cutting, or non-strategic projects**. Strategic projects strive to add functionality to a business, either through informing or transforming the firm through new business processes (Venkatesan, 1992). Non-strategic projects aim to increase efficiency, and/or reduce costs by automating an existing business function. The existing knowledge in the literature as to which type of activities should be outsourced is mixed. Core competency activities are processes that help a firm leverage their own unique resources. In operations management, there is a vast amount of work on when outsourcing reduces costs (McMillan 1990; Venkatesan 1992; van Mieghem 1999). Business press agrees that a firm’s core competence activities themselves should not be outsourced (Pralhad and Hamel 1990). Empirical studies on IT, however, show that IT infrastructure aspects of core activities can safely be outsourced provided that firms have minimal risk from the outsourcing relationship; in fact, customer satisfaction is often higher when low-risk IT aspects of core activities are outsourced (Saunders, Gebelt and Hu 1997). These results suggest that *strategic initiative* IT outsourcing projects should be expected to position firms advantageously to exploit opportunities, thus creating benefits to the firms in future periods. Purely cost-cutting IT projects, on the other hand, are often viewed as necessitated by inefficient processes of a firm, and if devoid of strategic implications, can be regarded as not forward-looking. Thus, we expect *cost-cutting* projects to potentially have a negative implication to the market about a firm. An example of a *strategic initiative* project is KBC Bank & Insurance Group hiring IMRGlobal to develop a *new* Unified Trading System. Conversely, an example of a *cost-cutting* project within the same industry would be Schroder Investment Management Limited hiring IMRGlobal to automate and manage for them IT elements of several of their existing business processes, such as human resources. We expect, therefore, that across industries, cost-cutting activities will have a negative impact on stock price, strategic projects will have a positive impact on stock price, and the reaction of the market across project types will be significantly different. This leads us to the next three hypotheses (H2-H5).

Hypothesis 2 (H2): The abnormal returns attributable to *cost-center* IT outsourcing announcements are negative.

Hypothesis 3 (H3): The abnormal returns attributable to *strategic* IT outsourcing announcements are positive.

Hypothesis 4 (H4): The abnormal returns attributable to *cost-center* IT outsourcing announcements are different from the abnormal returns attributable to *strategic* outsourcing announcements.

Firm Type

We focus on firms that fall within industries where information is central. Across industries, the degree to which the industry is focused around *information* is associated with the importance of successful IT projects, as IT projects manage *information* in an organization. Therefore, we chose to focus on two industries that use information heavily, information-technology firms and service firms. The *resource-based view* (Conner and Prahalad, 1996) highlights that over time, firms operating in their chosen industry accumulate experience and understanding of their products, customers, and overall market. Such knowledge better positions IT firms to make decisions regarding which IT projects should be outsourced. Thus, such firms have a higher likelihood

³In our analysis, we assume that the market does not anticipate outsourcing announcement information before the first public announcement in the press.

of IT projects correctly choosing IT outsourcing projects that will benefit them in the future. We therefore describe our IT industry hypothesis (H5).

Hypothesis 5 (H5): The abnormal returns attributable to IT outsourcing announcements by information-technology firms are positive.

Service firms, on the other hand, while still largely dependent upon information, are less focused on IT related project decisions. Hence, the resources created in service firms may be less well suited or worse, even constraining towards assessing the proper IT outsourcing project to undertake. Such limitation when moving between environments is parallel to previous findings that rigidities are often based on core competencies of firms (Leonard-Barton, 1992). Hence, while the decision to outsource a given IT function is likely still a positive move for the future of a service firm, since access to information is central to their industry, the markets reaction will likely be less positive than in the case of the IT industry. We therefore describe our service industry hypothesis (H6).

Hypothesis 6 (H6): The abnormal returns attributable to service industry firm IT outsourcing announcements are different from the abnormal returns attributable to IT outsourcing announcements of IT industry firms.

Strategic Announcements Across Firm Types

Our last part of the analysis examines only strategic outsourcing announcements across firm types. Prior research has shown that companies make better decision when the motivation for outsourcing capitalizing on market opportunities, and therefore strategic initiative, rather than is alleviating current financial difficulties (cost cutting) (Strassman 1995). In our sample, information technology firms are hardware, software, and telecommunications firms, whereas consulting firms and financial services are two prime examples of service industry firms. Thus, in the service industry, we expect that strategic IT outsourcing is usually done to transform information acquisition, and therefore give the consultants and financial analysts a competitive advantage. A key commodity to service firms is information; the ability for service firms to have necessary information at their fingertips in a timely fashion is of great importance. Therefore, announcements of strategic information technology improvements in service firms should send a strong positive signal for the company's future. Information technology firms, however, have technology as their core competence. Strategic IT outsourcing engagements made by IT firms are likely to signal to the market good foresight by an IT industry firm. In addition, based on the resources of an IT industry firm, they should be better positioned to make decisions regarding strategic IT initiatives. Consequently, we expect that strategic IT outsourcing initiatives will still send a strong signal about an IT company's future. We therefore describe our strategic, cross-industry hypothesis (H7).

Hypothesis 7 (H7): The abnormal returns attributable to *strategic* IT outsourcing announcements by *IT* industry firms are more positive than the abnormal returns attributable to *strategic* IT outsourcing announcements made by *service* firms.

Initial Results

Initial results can be summarized as:

1. Capital markets react positively to firm IT outsourcing announcements in the 10-day window, thus enhancing the firm's market value. The abnormal returns (ARs) for IT outsourcing announcements on the day of the event are 0.43%; the cumulative abnormal returns (CARs) are 1.72% over a 10-day time window.
2. The positive and significant effect is observed for *strategic* projects, but not for *cost-cutting* projects. The CARs over a 5-day window are 3.34% and 7.56% over a 10-day window. The CARs for *cost-cutting* projects on the other hand are -2.07% over the 10-day window (the 5-day window results were not significant)
3. The CARs for both IT industry firms and service industry firms are positive and significant over the 10-day window. The CARs for the service industry are 3.31% over the 10-day window. The CARs for the IT industry are 6.62% over the 5-day window and 4.82% over the 10-day window.

4. The CARs for strategic projects are not significant for service industry firms. However, the CARs for strategic projects for IT industry firms are positive and significant, both over the 5-day window at 7.62%, and the 10-day window at 9.97%.
5. The CARs for strategic projects are significantly higher than the CARs for cost-cutting projects over the 5-day window. In addition, the CARs for strategic projects across service firms are significantly lower than the CARs for IT firm strategic projects over the 5-day window.

Conclusion

In this study we explore the market's reaction to IT outsourcing investment announcements. The increasingly fast pace of technological change has brought about a surge in IT outsourcing projects. While the cost advantages of IT outsourcing are attractive, conventional productivity measures may not fully consider the potential improvements in economic output brought about by an outsourcing engagement, such as streamlined business processes, better quality customer service, and a wider range of knowledge on technological offerings. In this research, we make an empirical examination of the markets reaction to IT outsourcing through the use of the event-study methodology, which has the advantage of being able to capture both the risk and return consequences of an IT outsourcing investment. In addition, we explore how firm specific factors, such project type and industry affect the markets reaction to an IT outsourcing announcement. For the researcher and practitioner alike, we offer an important exploration of a question that has produced many conflicting answers; the question of when, and why should a company partake in an IT outsourcing project. We find that the market reacts positively to *strategic* projects and projects executed by IT related firms. Such a result suggests that the risk associated with transforming a business process, or entering a new business arena through an outsourcing engagement, is expected by many to be worth the reward.

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