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IT Outsourcing: Examined Under the Resource-Based View Lens

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ABSTRACT

The proponents of the resource-based view (RBV) have long argued that a firm gains sustainable competitive advantage from those resources and capabilities it controls and which are valuable, rare, imperfectly imitable, and not substitutable. So, does information technology (IT) outsourcing strip companies of any competitive advantage that is attributed to IT? It has been said that information systems that cannot sustain competitive advantage are transient and are not expected to enhance firm valuation. In that case, does it imply that outsourcing of certain aspects of IT can lead to sustained competitive advantage? Therefore, this paper's main research question is: Does IT outsourcing lead to sustained competitive advantage for a firm? In order to empirically examine this, it is proposed to study the impact of IT outsourcing announcements on firm valuation using the event study methodology.

Keywords

Information technology (IT), outsourcing, resource-based view, event study.

INTRODUCTION

The resource-based (RBV) view states that a firm derives sustained competitive advantage from the resources and capabilities it controls and which are valuable, rare, imperfectly imitable, and not substitutable (Barney, 1991). The information and knowledge controlled by a firm and the information technology it possesses are some of the resources and capabilities that lead to sustained competitive advantage (Barney, 1991; Mata, Fuerst and Barney, 1995; Barney, White and Ketchen Jr., 2001). What happens when such a resource and capability that is a potential source of sustained competitive advantage for a firm is outsourced? In order to find out the answer to this question, in this paper an event study methodology is proposed to examine market reactions to IT outsourcing announcements.

RESOURCE-BASED VIEW AND SUSTAINED COMPETITIVE ADVANTAGE

The resource-based view postulates that firms gain and sustain competitive advantages by deploying valuable resources and capabilities that are inelastic in supply (Ray, Barney and Muhanna, 2004). According to Porter (1991, p.108), "resources are not valuable in and of themselves, but they are valuable because they allow firms to perform activities…business processes are the source of competitive advantage" (Ray et al., 2004, p.26). Barney (1991) theorizes that the resource-based logic implies that "business processes that exploit valuable but common resources can only be a source of competitive parity; business processes that exploit valuable and rare resources can be a source of temporary competitive advantage; and business processes that exploit valuable, rare, and costly-to-imitate resources can be a source of sustained competitive advantage" (Ray et al., 2004, p.26). According to Barney (1991), a firm derives sustained competitive advantage from the resources and capabilities it controls and which are valuable, rare, imperfectly imitable, and not substitutable (Barney et al., 2001). Further these resources and capabilities are tangible and intangible assets that include a firm's management skills, its organizational processes and routines, and the information and knowledge that it controls (Barney et al., 2001).

INFORMATION TECHNOLOGY AND SUSTAINED COMPETITIVE ADVANTAGE

According to Mata et al. (1995), research focused on understanding the sources of sustained competitive advantages for firms has identified various factors such as relative cost position of a firm (Porter,1980), a firm's ability to differentiate its products (Caves and Williamson, 1985; Porter, 1980), the ability of firms to cooperate in strategic alliances (Kogut, 1988), and information technology (Barney, 1991; Clemons and Kimbrough, 1986; Clemons and Row 1987, 1991a; Feeny, 1988; Feeny and Ives, 1990) as having a significant impact on a firm's ability to obtain sustained competitive advantage.

According to Kettinger, Grover, Guha, and Segars (1994), information systems that facilitate competitiveness in both the short and the long run have premium value and those that cannot sustain their business impact have only a transient or negative value in case the competition reacts with a bigger better response. Kettinger et al. (1994) further state that according to information systems (IS) research, competitive advantage is said to be achieved when a firm receives a return on investment that is greater than the industry norm and is sustained for long enough to be able to alter the nature of industry competition. It can be implied from this that "strategic IS should reduce cost, add value, and create significant switching costs that result in financial benefit before the system is copied by competitors" (Kettinger et al., 1994, p.39).

This brings up the question what happens when such kind of a resource and capability such as IT that is a potential source for sustained competitive advantage is outsourced? Does having IS in-house within the firm lead to sustained competitive advantage? Any IT strategy that exploits machines that can be purchased in the market is likely to be imitable and therefore, not a source of sustained competitive advantage (Barney, 1991). In that case, does it imply that outsourcing of certain aspects of IT can lead to sustained competitive advantage? Grover, Cheon and Teng (1996) argue that according to resource dependence theories a firm is a collection of productive resources and to fully exploit a firm's existing stock of resources and gain competitive advantage, it might be necessary to acquire complementary resources externally. This implies that IT outsourcing has the potential to lead to competitive advantage.

IT OUTSOURCING

Grover et al. (1996) define outsourcing of IS functions as "the practice of turning over part or all of an organization's IS functions to an external service provider(s)". According to them IT outsourcing can be of specific human resources (e.g., skilled programming and telecommunication personnel) and/ or technological resources (e.g., network infrastructure). Grover et al. (1996) include the following categories in the extent of outsourcing: applications development and maintenance, systems operation, networks/telecommunications management, end-user computing support, systems planning and management, and purchase of application software.

According to Lacity and Willcocks (1998, 2001), the IT outsourcing market grew to 76 billion dollars in 1995 and was expected to grow to $150 billion by 2004. In January, 2005, ZDNet News reported that the value of major outsourcing contracts alone in 2004 was $109 billion worldwide and of this, 67 percent was information technology outsourcing (ITO) and 33 percent was business process outsourcing (BPO). These statistics bring up the question whether IT outsourcing strips companies of any competitive advantage that is attributed to IT. But, Lacity and Willcocks (2001) in their book, "Global Information Technology Outsourcing", write that earlier deals focused on cost reduction, but many organizations now in their second or third generation of IT outsourcing seek a significant business advantage.

This leads to this paper's main research question: Does IT outsourcing lead to sustained competitive advantage for a firm? But how do we measure competitive advantage? On a discussion of Nelson's (1991) paper, Rumelt, Schendel, and Teece (1991) state that "if different firms display different levels of performance or competitive advantage, despite competition, then the reasons for these persistent differences reveal the basis for competitive advantage" (p.24). From this it can be inferred that competitive advantage is indicated by firm performance. Since, financial or economic firm performance is also indicated in terms of the stock prices (Havnes and Senneseth, 2001), it therefore, seems appropriate to used stock prices as an indicator of competitive advantage. According to Kettinger et al. (1994), information systems that facilitate competitiveness in both the short and the long run have premium value and those that cannot sustain their business impact have only a transient or negative value. Dehning, Richardson, and Zmud (2003) used the event study methodology to explain how IT investments affect the firm's competitive position and ultimately firm value. Moreover, event studies that use stock market residuals are considered a standard way of examining the value of policies and strategies (Rumelt et al., 1991). Therefore, in order to empirically examine the main research question, it is proposed to study the impact of IT outsourcing announcements on firm valuation.

Selecting which IT activities to outsource is a major business consideration. Lacity and Willcocks (2001. p.187) developed the Business Factors Matrix, which is based on two ideas – the contribution that an activity makes to business operations, and its impact on competitive positioning.

Contribution of IT Activity to Business Operations			
	Critical	Best Source	In-House / Insource
	Useful	Outsource	Eliminate or Migrate
		Commodity	Differentiate
	Contribution of IT Activity to Business Positioning		

Table 1. Business Factors Matrix

Courtesy: Lacity and Willcocks (2001. p.188)

The above mapping of an IT activity's contribution to business positioning and operations, leads to four categories of potential outsourcing candidates, which are described by Lacity and Willcocks (2001) as follows:

(1) Critical Differentiators – IT activities that are not only critical to business operations, but also help to distinguish the business from its competitors.
(2) Critical Commodities – IT activities that are critical to business operations, but fail to distinguish the business from its competitors.
(3) Useful commodities – The myriad IT activities that provide incremental benefits to the business, but fail to distinguish it from its competitors.
(4) Useful differentiators – IT activities that differentiate the business from its competitors, but in a way that is not critical to business success.

The Business Factors Matrix developed by Lacity and Willcocks (2001), raises the possibility that IT outsourcing announcements about any of the above four categories of potential outsourcing candidate activities can have differing impacts on a firm's valuation. This leads to the following hypotheses.

Hypothesis 1: IT outsourcing announcements of a critical differentiator will lead to a negative impact on a firm's valuation.

Hypothesis 2: IT outsourcing announcements of a critical commodity will either have no impact on firm valuation or will lead to a negative impact depending on the quality and reputation of the supplier.

Hypothesis 3: IT outsourcing announcements of useful commodities will lead to a positive impact on a firm's valuation.

Hypothesis 4: IT outsourcing announcements of useful differentiators will lead to a negative impact on a firm's valuation.

Apart from the nature of the potential outsourcing candidate category, the very nature of the firm and the environment in which it works will also have an impact on a firm's valuation when an IT outsourcing announcement is made. This leads to the following two hypotheses.

> *Hypothesis 5: An IT outsourcing announcement made by a highly information intensive firm working in a highly competitive environment will lead to a negative impact on the firm's valuation.*
>
> *Hypothesis 6: An IT outsourcing announcement made by a low information intensive firm working in a less competitive environment will lead to a positive impact on the firm's valuation.*

RESEARCH METHODOLOGY

The objective of the proposed empirical investigation is to study the stock price behavior of firms making an IT outsourcing announcement. In order to do this, an event study will be conducted on the lines of the study done by Chatterjee, Richardson and Zmud (2001) on the impact of announcements of newly created chief information officer (CIO) positions on the firm's stock price behavior.

Data Collection

So far this study is in the data collection stage. Outsourcing announcements were collected from The Wall Street Journal (WSJ), New York Times (NYT), Los Angeles Times, CNet News, ZDNet News, and Computer World. The ABI Inform database was used to access some of the WSJ and NYT articles. It took an extensive search effort to identify 96 announcements so far. The plan is to collect at least 137 IT outsourcing announcements to match the number of announcements initially collected in the landmark event study by Chatterjee et al. (2001) on the shareholder wealth effects of announcements of newly created CIO positions.

The extent of IT outsourcing has been classified according to the categories proposed by Grover et al. (1996). As stated earlier, according to Grover et al. (1996), the extent of IT outsourcing can be classified into the following categories: (1) application development and maintenance, (2) systems operation, (3) networks/telecommunications management, (4) end-user computing support, (5) systems planning and management, and (6) purchase of application software. In addition to these six categories, the following two categories have been added in this study: (7) most or all IT operations, and (8) manufacture/supply of PCs and other hardware. Since there are more than two categories, multiple dummy variables will need to be created in order to facilitate coding and analysis. It is assumed that application development and maintenance is the most frequently outsourced category. Therefore, this category will not be coded and the other categories will be compared to it. It is considered a sound practice to create k-1 dummy variables, where k is the number of levels of the original variable. Therefore, 8-1 (i.e., seven) dummy variables will be created and each variable will have a value of yes or no (i.e., 1 or 0).

The information in the IT outsourcing announcements has been tabulated under the following headings: (1) North American Industry Classification System (NAICS) Code, (2) NAICS Title, (3) Company Name, (4) Ticker Symbol, (5) Extent of Outsourcing- Categories, (6) Announcement Description ad verbatim, (7) Outsourced to, (8) Date of Publication, (9) Source, (10) Source Database or Website, (11) Deal in Dollars, and (12) Contract Duration.

The success of the data collection effort so far validates the feasibility of doing an event study and thus, empirically examine whether IT outsourcing is indeed a source of sustained competitive advantage or not.

Once the target number of IT outsourcing announcements is reached, it will be ensured that the firms used in the study would be public companies that are listed on the New York Stock Exchange (NYSE) or the National Association of Securities Dealers Automated Quotations (NASDAQ) and are also included in the Center for Research for Security Prices (CRSP) daily stock returns file. It will be ensured that the stock price behavior of the firms under study is attributable solely to the outsourcing announcements and not due to any other events. To ensure this, search will be conducted for any news such as earnings, dividends, or any other major announcements on the day before, the day of, or the day after the IT outsourcing announcement that might contaminate the price data. In order to determine whether these outsourcing announcements represent new information to investors and affect the stock price, an estimate of the firm's stock market performance in the absence of the IT outsourcing announcement would be required.

Event Study Methodology

Following the event methodology approach, the stock prices of the firms would be reported for the day before the announcement, the day of the announcement, and the day after the announcement. The capital asset pricing model would be used to describe daily common stock returns. The OLS market model would be employed to estimate the abnormal return.

Daily abnormal returns would then be averaged over the sample of N firms and over the three days between T_1 = day – 1 and T_2 = day + 1 of the event period to yield cumulative abnormal returns, $CAR_{T_1T_2}$. The test statistic $Z_{T_1T_2}$ will then be computed. Hypotheses testing will be done and conclusions will be drawn.

CONCLUSION

The information and knowledge controlled by a firm and the information technology it possesses are some of the resources and capabilities that lead to sustained competitive advantage (Barney, 1991; Mata, Fuerst and Barney, 1995; Barney, White and Ketchen Jr., 2001). What happens when such a resource and capability that is a potential source of sustained competitive advantage for a firm is outsourced? Does information technology (IT) outsourcing strip companies of any competitive advantage that is attributed to IT? But, the huge growth and size of the global IT outsourcing industry indicates otherwise. So does IT outsourcing itself become a source of sustained competitive advantage for a firm? It has also been said that information systems that cannot sustain competitive advantage are transient and are not expected to enhance firm valuation. In that case, does it imply that outsourcing of certain aspects of IT can lead to sustained competitive advantage, while the outsourcing of other aspects might not? Therefore, in order to address these questions, this study will examine the impact of outsourcing agreements on firm stock performance. Many companies outsource for not just cost-reduction, but are seeking to gain competitive advantage. This study will measure investors' perceived value of these outsourcing agreements and whether the investing public believes that outsourcing can indeed lead to sustained competitive advantage. In this way, using the lens of firm valuation, it is sought to determine the linkages between IT outsourcing and sustained competitive advantage. Thus, it is believed that this study can make a value-added contribution to research by examining whether the RBV perspective that IT is a source of sustained competitive advantage holds much relevance in the present day scenario where IT outsourcing is viewed as a means to gain not only the comparative cost advantage, but also sustained competitive advantage.

REFERENCES

1. Barney, J. (1991) Firm resources and sustained competitive advantage, *Journal of Management*, 17, 1, 99-120.
2. Barney, J., Wright, M. and Ketchen, Jr. D. J. (2001) The resource-based view of the firm: Ten years after 1991, *Journal of Management*, 27, 6, 625-641.
3. Chatterjee, D., Richardson, V. J. and Zmud, R. W. (2001) Examining the shareholder wealth effects of announcements of newly created CIO positions, *MIS Quarterly*, 25, 1, 43-70.
4. Dehning, B., Richardson, V.J. and Zmud, R.W. (2003) The value relevance of announcements of transformational information technology investments, *MIS Quarterly,* 27, 4, 637-656.
5. Grover, V., Cheon, M. J. and Teng, J. T. (1996) The effect of service quality and partnership on the outsourcing of information systems functions, *Journal of Management Information Systems*, 12, 4, 89-116.
6. Havnes, P.A. and Senneseth, K. (2001) A panel study of firm growth among SMEs in networks, *Small Business Economics,* 16, 4, 293-302.
7. Kettinger, W. J., Grover V., Guha S., and Segars, A. H. (1994) Strategic information systems revisited: A study in sustainability and performance, *MIS Quarterly*, 18, 1, 31-58.
8. Lacity, M. C. and Willcocks, L. P. (1998) An empirical investigation of information technology sourcing practices: Lessons from experience, *MIS Quarterly*, 22, 3, 363-408.
9. Lacity, M. and Willcocks, L. (2001) Global information technology outsourcing, John Wiley & Sons Ltd, Chichester,West Sussex, England.
10. Mata, F. J., Fuerst, W. L. and Barney, J. B. (1995) Information technology and sustained competitive advantage: A resource-based analysis, *MIS Quarterly*, 19, 4, 487-505.
11. Porter, M. E. (1991) Towards a dynamic theory of strategy, *Strategic Management Journal*, 12, 95-117.
12. Ray, G., Barney, J. B. and Muhanna, W. A. (2004) Capabilities, business processes, and competitive advantage: Choosing the dependent variable in empirical tests of the resource-based view, *Strategic Management Journal*, 25, 1, 23-37.
13. Rumelt, R.P., Schendel, D. and Teece, D.J. (1991) Strategic management and economics, *Strategic Management Journal,* 12, Special Issues, 5-29.
14. Staff Reporter (2005) Europe overtakes U.S. in outsourcing, *ZDNet News,* Retrieved Aug 18, 2005, from http://news.zdnet.com/2100-9589_22-5555048.html