

Association for Information Systems AIS Electronic Library (AISeL)

PACIS 2007 Proceedings

Pacific Asia Conference on Information Systems
(PACIS)

2007

Does the Strategic Orientation of a Firm Guide its Degree of Offshoring?

Shirish C. Srivastava

National University of Singapore, shirish@nus.edu.sg

Thompson S.H Teo

National University of Singapore, bizteosh@nus.edu.sg

Follow this and additional works at: <http://aisel.aisnet.org/pacis2007>

Recommended Citation

Srivastava, Shirish C. and Teo, Thompson S.H, "Does the Strategic Orientation of a Firm Guide its Degree of Offshoring?" (2007). *PACIS 2007 Proceedings*. 13.

<http://aisel.aisnet.org/pacis2007/13>

This material is brought to you by the Pacific Asia Conference on Information Systems (PACIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in PACIS 2007 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

9. Does the Strategic Orientation of a Firm Guide its Degree of Offshoring?

Shirish C. Srivastava
School of Business
National University of Singapore
shirish@nus.edu.sg

Thompson S. H. Teo
School of Business
National University of Singapore
bizteosh@nus.edu.sg

Partha S. Mohapatra
Department of Information Systems
Morgan State University
pmohapat@morgan.edu

Abstract

Despite the growing importance of information technology (IT) enabled offshore sourcing, there is relatively little academic research to understand the phenomenon. In this study, conceptualizing offshore sourcing as a strategic decision, and using the path dependency theory, we present a strategic sourcing model. Next, using secondary data, we empirically test the proposed model to study the role of the 'strategic orientation', in explaining the degree of offshoring. Overall, the findings suggest that a firm's offshore decision is in tandem with its broad strategic orientation. Further, knowledge and innovation strategy emerges as the key factor explaining the degree of offshoring. Our results indicate that in contrast to the popular belief, a low-cost strategy may not necessarily be associated with offshoring decision. The paper concludes with a discussion of the implications of the results for research and practice.

Keywords: ITES, Outsource, Offshoring, BPO, Strategy

Introduction

Sourcing decisions are critical decisions that firms have to make. The last decade has witnessed a revolution in information and communication technologies (ICTs) enabling the sourcing of services and business processes from distant countries through offshoring. Offshoring refers to the migration of all or part of the development, maintenance and delivery of business processes and / or services to a vendor (or captive unit) in a country different from that of the client (Hirschheim et al., 2005).

An increasing number of business processes and other activities are being offshored from developed countries like US and UK to relatively cheaper destinations like India, China, Russia and the Philippines. According to Gartner research, 5% of IT jobs in the US have gone overseas, and 25% will be "offshored" by 2010 (Gugliermo, 2004). Forrester Research estimates that by 2015, about 3.3 million jobs will be offshored. Another estimate by Goldman Sachs puts this figure at 6 million by 2010 (Hirschheim et al. 2005). Recent news reports confirm that this trend is continuing at an accelerated pace (Gardner, 2006; Watson, 2005). This rapid increase in the pace of IT enabled offshoring makes it a subject of important concern both for research and practice.

Many researchers are of the view that offshoring is an extension of the information systems (IS) outsourcing phenomenon whereas others believe that offshoring has its own unique contexts, which require deeper research (Stack and Downing, 2005). Similar to the case of IS

outsourcing, “the unprecedented magnitude and the potential irreversibility” (Teng et al. 1995, p77) of offshoring decision makes it a strategic decision. The possibility of offshore sourcing has added new dimensions to the outsourcing phenomenon in three major ways. First, offshore sourcing may result in cost savings and provide access to skilled knowledge workers, thus providing firms a source of competitive advantage (Rost, 2006). Second, offshoring involves substantial investment of time and resources for entering into a sourcing arrangement and the costs of termination of such sourcing arrangements may be heavy. Hence most firms view offshoring as a long-term strategic arrangement (Rost, 2006). Third, there are multiple risks associated with the offshore sourcing proposition (Aron et al., 2004; Aron & Singh, 2005). As explained by Srivastava et al. (2007), the motivations for offshoring and modalities for arranging offshoring might be different from outsourcing within the country.

Clearly offshoring is a strategic decision, but the current literature typically views offshoring phenomenon from perspectives other than the strategic lens (Aron et al., 2005; Kaiser and Hawk, 2004; Nicholson and Sahay, 2004). Further, there has been relatively little academic research about offshoring decisions. The prime motivation of our study is to address this research gap. For doing this, we conceptualize offshoring as a strategic decision and propose and test a strategic sourcing decision model based on the path dependency theory. A firm’s strategic decision making is a complex process involving multiple considerations. One of the modalities guiding the firm’s strategic decisions is based on the *strategic orientation* of the firm. A firm’s *strategic orientation* is the broad generic strategy on which its business rules are based e.g. low cost, growth, or differentiation. It is the initial strategic choice of business philosophy which the firm makes and all its future decisions are generally aligned with the chosen strategic orientation. The broad research question that we address in this study is to investigate whether ‘the degree of offshoring² by a firm is related to its strategic orientation.’ The rest of the paper is organized as follows: the next section reviews literature on offshoring in relation to strategic orientation leading to the research proposition. Based on this research proposition, the following section develops specific research hypotheses from a strategic orientation perspective. The subsequent sections describe the research method, and results of the study. Finally, we end the paper with a section on implications emerging out of this study.

Literature Review and Research Proposition

The notion of strategic orientation refers to a set of underlying values and propensities that consistently guide a firm’s strategic actions (Venkatraman, 1989; Teng et al., 1995). It is based on the path dependency theory, which in the context of organizational strategy suggests that once a strategic path is chosen, future actions will follow that path. Path dependency theory was originally developed by economists to explain technology adoption processes and industry evolution (Goodstein, 1995). Path dependent behavior has not only been used to explain history dependent technological developments like QWERTY typewriter board (David, 1985), VHS videotape formats, Japanese automobiles and the FORTRAN computer language (Arthur, 1991) but also for explaining organizational decisions like industry location patterns (Krugman, 1991) and the persistence of inefficient institutions (Setterfield, 1993).

² Degree of offshoring is the amount of production or service that has been transferred by the company from its parent country to a foreign destination. In this study, it is a bi-dimensional attribute indicated by the number of jobs and the number of functions offshored.

One of the first ideas describing the ‘strategic orientation of the firm’ has its roots in Porter’s theory of generic strategies. Porter (1980; 1985) described three generic business level strategic orientations: overall cost leadership, product differentiation, and focus. Each of these strategies represents “a fundamentally different approach to creating and sustaining a competitive advantage” (Porter, 1985, p 17). Wiseman (1985) expanded Porter’s generic strategies to encompass *growth*, *alliance*, and *innovation* strategies. Further, scholars have highlighted that firms may follow more than one generic strategy simultaneously and in many cases they may be supporting one another (Murray, 1988; Hill 1988).

Offshore sourcing is one of the important strategic actions taken by firms. It is in anticipation of strategic advantages that firms get motivated “to commit enormous resources and risk the loss of control over an important management function” (Teng et al., 1995, p 77). From a strategic orientation perspective, firm’s make strategic decisions which are aligned with their overall strategy. Hence for a firm in which offshoring activity is in consonance with its strategic orientation, the propensity to offshore will be higher. Therefore we put forth the following research proposition:

Proposition: The strategic orientation of a firm is related to the degree of its offshore activities.

Research Model and Hypotheses

Based on the research proposition presented in the last section, a research model is proposed to identify factors associated with the degree of offshore sourcing decision. The dependent variable in our model (Figure 1) is the degree of offshoring which we operationalize by two attributes: the number of jobs offshored and the number of functions offshored by each firm.

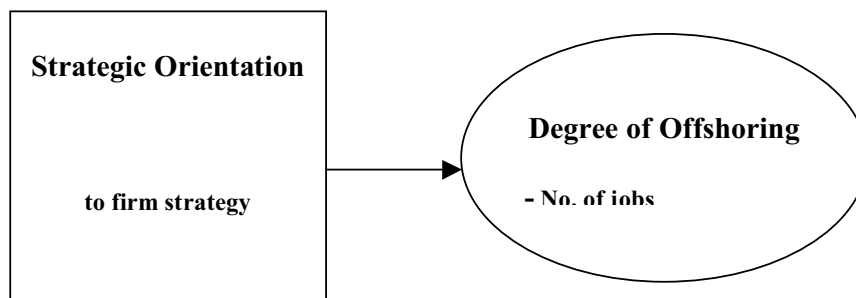


Figure 1: Research Model: Strategic Orientation and Degree of Offshoring

The independent variables, based on the research proposition are the three types of strategic orientations namely: low cost strategy, growth strategy, and innovation strategy.

Low Cost Strategy

Low cost strategy is akin to Porter’s cost leadership strategy where firms in all their actions (operations, overheads, logistics, etc.) try to minimize the cost. Offshoring may bring about significant cost savings in three ways. First, firms offshore activities to countries where labor cost is low (e.g. China and India). Second, since the service providers (vendors) often pool projects from different clients, they may derive significant economies of scale, thus lowering costs further. Third, the pooling of projects from different clients also helps the vendor derive significant economies of scope, which may be passed to the firm. These cost savings spur companies focused on low cost strategy to offshore. *Hence, a firm following a low cost strategy should presumably offshore more jobs.*

A firm following a low cost strategy would consciously make an effort to minimize its costs and expenses in all its activities. Thus, a firm following low cost strategy should be having comparatively lower expenses for the same amount of sales (Lawless and Finch, 1989). We hypothesize:

H1: The lower the average expenses, the higher will be the number of jobs offshored.

In addition to the quantity of work offshored, another important consideration is the spectrum of work offshored. The spectrum of activities offshored represents the range of functions which the firm offshores. Firms have the option of offshoring either only a few functions (e.g. customer service and software development) or transferring to the vendor a spectrum of business functions (e.g. customer service, software development, technical support, legal services, human resource services, research and development, etc.). Firms pursuing a low cost strategy would offshore more functions so that they derive a greater amount of cost arbitrage from offshoring. Thus, low cost strategy will be positively associated with the number of functions offshored. We hypothesize:

H2: The lower the average expenses, the higher will be the number of functions offshored.

Growth Strategy

Robbins and DeCenzo (2001) defined growth as an improvement in the operation of business which includes more revenue, market share or an increase in the number of staff. Aldag and Stearns (1991) pointed out two broad growth options which companies pursue for a growth strategy. They either develop their internal capabilities to have an internally driven growth or they merge with external businesses to have an externally driven growth. The significant amount of time taken in developing the capabilities internally may lead to the firms missing the window of opportunity for gaining the maximum competitive advantage. For an externally driven growth in a similar business domain, competition among partners hampers the successful implementation of business alliances (Lu, 2006). The various external growth strategies which firms follow are: mergers and acquisitions, branches, strategic alliances and joint ventures (Lu, 2006). Another external growth strategy is to externally source their non-core business processes.

This strategy will help businesses in two ways. First, in such outsourcing alliances, there is usually no clash of interest among the partners as both are addressing different parts of the value chain. Second, it provides firms with an opportunity to concentrate on their core-business and grow it to gain a competitive advantage. This approach extends the concept of 'concentrated growth strategy' (Pearce & Harvey, 1990) which suggests state that the foundation of a sustained profitable growth begins with a clear definition of a company's core business (Zook & Allen, 2001). Thus, we hypothesize:

H3: The higher the average growth rate, the higher will be the number of jobs offshored.

A related issue for growth is to penetrate diverse markets in different functional areas. Clearly, firms pursuing a growth strategy will be motivated to offshore most of their non core functions so that they can grow faster in different functional areas. Therefore we have the following hypothesis:

H4: The higher the average growth rate, the higher will be the number of functions offshored.

Innovation Strategy

Innovation strategy is motivated from Porter's differentiation strategy for continuously finding ways to be unique (Porter 1980; 1985). A firm's innovative capability is not only critical for developing its dynamic capabilities but also for developing its agility in responding to ever changing customer needs by exploring and exploiting the critical knowledge (March, 1991). Researchers argue that new organizational forms favor innovation by increasing their strategic flexibility (Daft & Lewin, 1993; Hitt et al., 1998). The strategic flexibility required for being innovative can be achieved by subcontracting, outsourcing and also by the use of contingent workers (Hitt et al., 1998; Medina et al., 2005).

Moitra & Krishnamoorthy (2004) mention that in the present day world, innovation and R&D are not restricted to the boundaries of firm or nation, rather a scenario of "global innovation exchange" is emerging. Porter & Stern (2001) mention the importance of location for innovation. The workforce skill and knowledge available in another geographical area can effectively be transferred to another location using ICT. The strategic importance of location for knowledge acquisition and innovation has also been highlighted by a number of scholars (Christensen & Drejer, 2005; Jaffe et al., 1993). It makes clear business sense for firms pursuing an innovation strategy to offshore more of their jobs enabling multifarious benefits of location, strategic flexibility, knowledge acquisition and organizational learning. Therefore we put forth the following hypothesis:

H5: The higher the average R&D expenditure, the higher will be the number of jobs offshored.

Clearly offshoring as a strategic decision facilitates better inflow of knowledge resources in the diverse functional areas offshored, thereby facilitating innovation. The greater the number of activities offshored, the more diverse will be the innovation exchange enabling firms to learn more. Hence, innovative firms should offshore a spectrum of functions. We hypothesize:

H6: The higher the average R&D expenditure, the higher will be the number of functions offshored.

Method and Variables

The hypotheses that need to be tested in this study aim at explaining the degree of offshoring (number of jobs and functions) from the *strategic orientation perspective*. For testing the hypotheses, we rely on secondary sources of publicly available data on offshoring and firm financial performance. The unit of analysis is the firm. To test our hypotheses, we used hierarchical negative binomial regressions on the number of jobs and the number of functions offshored, respectively. Explaining the appropriateness of using a binomial regression model, Song et al. (2003) mentioned - "as an extension of the Poisson regression, a negative binomial regression is used to estimate models of occurrences (counts) of an event when the event has extra-Poisson variation in the form of over-dispersion" (p 357). Negative binomial regression has been used in similar past studies where dependent variable is a count variable. The analyses are performed separately for the two dependent variables defining the degree of offshoring. In the first step we enter the control variables and subsequently in each step, we keep on adding strategic orientation variables to the regression equations. Before presenting the results of the study, we elaborate on the variables used.

Dependent Variable(s)

For our research, the dependent variable is the ‘degree of offshoring’. We separate the degree of offshoring into two components: the *number of jobs offshored* and the *number of functions offshored*. The data on the number of jobs offshored as well as number of functions offshored have been collected from TechsUnite³ website database (TechsUnite, 2006). TechsUnite is a union for high-tech workers whose objective is to safeguard the interests of technical workers. The TechsUnite website (TechsUnite, 2006) provides firm level offshore information for US firms aggregated from media reports. The website had data from 645 firms (presumably almost all the important offshoring firms in the US), which is the sampling frame of our study.

For testing the validity of the data collected from this website, we followed a two fold analysis. *First*, we corroborated and checked the names of the firms listed in the website, whether they really offshore or not. This we checked by comparing with the list of offshoring firms available at CNN website on “Exporting America”⁴. *Second*, we explored the various newspaper reports referenced as the source of offshoring information on the TechsUnite website for 10% of firms in the dataset and found the information to be generally correct and updated. Following this two step process gave us confidence about the validity of our dependent variables defining the degree of offshoring. Further, this dataset has been used successfully by past studies like Srivastava et al. (2007).

Independent Variables

The data for the independent variables are based on firm level financial data available in Compustat. For our analysis, we used data from the years 1995 to 2004. Compustat had data for only 306 firms (out of the 645 firms identified from TechsUnite database). Hence, our sample size was reduced to 306 offshoring firms.

For calculating the independent variables, we used the concept of ‘research window’ (Smith et al., 1998). For each incident firm, we identified the year of offshoring event given in the TechsUnite Website. This was the implementation year and was designated Year 0 for each incident firm. Assuming a lag of one year for the offshore event, we tabulated values for four years for each firm from Year 0 to Year -3. Further, we computed an additional column for each metric: the average of values from Year -1 to Year -3.

We posit that the average of the firm metric for three years preceding the Year 0 describes the firm’s *strategic orientation* for that variable in relation to other firms. We define the firm’s strategic orientation (SO) as:

$$SO_i = \text{Avg}(\text{Value})_i \text{ for } i = \text{Year } -3, \text{ Year } -2, \text{ and Year } -1$$

For operationalizing the three strategic orientations of low-cost strategy, growth strategy, and innovation strategy we used measures that have been used in the past studies. For low-cost strategy, we used two measures of operating expense and interest expense. Operating expense is the sum of cost of goods sold (COGS), and selling, general, and administrative expenses

³ Techsunite.org (<http://www.TechsUnite.org>) is the nationally-oriented web site of WashTech/CWA, the nation's leading union for high-tech workers. TechsUnite is a project of the Communications Workers of America, AFL-CIO, in collaboration with the following site partners, supporters and stakeholders: Alliance@IBM, Carol-Trevelyan Strategy Group (CTSG), Center on Wisconsin Strategy, CWA National Education and Training Trust, Washington Alliance of Technology Workers, and Working Today.

⁴ <http://www.cnn.com/CNN/Programs/lou.dobbs.tonight/popups/exporting.america/content.html>

(SG&A) [COGS+SG&A]. Interest expense is the expense for servicing the outstanding debts. Both the figures are expressed as percentages of sales to enable us compare firms of different revenues. Similar measures have been used in past studies (Smith et al., 1998; Mitra & Chaya, 1996). Growth strategy is operationalized through growth rate which is the yearly percentage change in sales (Smith et al., 1998; Brown et al., 1995; Dess & Davis, 1984). Innovation strategy is operationalized through firm's R&D expenditure (Leiponen 2005, Kermani & Gittins, 2004).

A brief description of independent variable measures used in this study and their past references are given in Table 1.

Table 1: Independent Variables and their Description

Strategic Orientation (SO) Perspective			
Low Cost Strategy			
Metric	Description	Variable	References
Operating expense	(COGS+SG&A)/S	avg (y-1 to y-3)	Mitra & Chaya (1996), Smith et al. (1998)
Interest expense	Interest expense/S	avg (y-1 to y-3)	Ohlson (1980)
Growth Strategy			
Growth rate	$S(y)-S(y-1)/S(y-1)$	avg (y-1 to y-3)	Brown et al. (1995), Dess & Davis (1984), Smith et al. 1998
Innovation Strategy			
R&D expenditure	R&D expense	avg (y-1 to y-3)	Leiponen (2005), Kermani & Gittins (2004)

Key: COGS = cost of goods sold, SG&A = Selling, general and administrative expenses, S = Sales, y = year, NE = number of employees, A = assets, R&D = research and development, avg = average

Control Variables

In our research, we controlled for industry sector, size (as measured by total firm assets), and foreign sales as percentage of total sales. To control for industry sector, we divided firms into five sectors based on the North American Industry Classification System (NAICS) and created a dummy for each sector: manufacturing and industrial, wholesale and retail trade, services, finance and real estate, and information. These five sectors comprehensively cover almost all the manufacturing and service industries in the US. Such industry controls have been used in past outsourcing/offshoring studies such as Brynjolfsson et al. (1994) and Whitaker et al. (2005).

To control for size, we used total assets for each firm from Compustat. Size as measured by total assets has been used as a variable in past outsourcing studies like Ang and Cummings (1997), Ang and Straub (1998), Loh and Venkatraman (1992). In addition to industrial sector and size, it was essential to control for the degree of internationalization in the offshore context. Firms having a greater foreign experience should logically offshore more. To control for foreign presence, we used the variable of foreign sales as a percentage of total sales. This measure has been used in previous studies in international business and outsourcing such as Stopford & Dunning (1983), Sullivan (1994), Whitaker et al. (2005).

Results and Discussion

Table 2 provides descriptive statistics and correlations for the variables used in the study. We observe that the correlations between R&D expenditure and number of jobs offshored as well as R&D expenditure and number of functions offshored are significant. Further, we also observe no serious problems of multicollinearity as none of the correlations among independent and control variables are above 0.8 (Gujarati, 2003).

The results of our analyses for the two dependent variables of number of jobs offshored and number of functions offshored are presented in Table 3. In the first step, we enter the control variables of industry, assets and foreign sales (Models 1a and 1b). In the subsequent steps, we enter the various strategic orientation variables. For the two low-cost strategy variables (operating and interest expenses) (Table 3, Model 2a and 2b), we observe that hypothesis 1 is *partially supported* as the relationship of interest expense with the number of jobs offshored is significant in the hypothesized direction ($\beta = -0.508$, $p < 0.01$) but the relationship of operating expense with the number of jobs offshored is not significant ($\beta = 0.238$, ns). Hypothesis 2 for the relationship of low-cost strategy variables with the number of functions offshored is not supported: operating expense ($\beta = -0.188$, ns) and interest expense ($\beta = -0.878$, ns). The partial support of hypothesis 1, and non support of hypothesis 2, exhibits that low-cost strategy is not consistently associated with the degree of offshore sourcing. Out of the two low-cost strategy variables, only low interest expense is associated with one of the offshoring degree variables (number of jobs offshored). Operating expense is not associated with any of the offshoring degree variables. These results for ‘offshoring’ are different from that from past ‘outsourcing’ studies like Loh and Venkatraman (1992) and Smith et al. (1998), where cost reduction appeared to be the prime focus (Dibbern et al., 2004). However, the data used in those studies were from outsourcing firms within the country, whereas we have used data that is strictly offshore outsourcing. Results show that it is possible that firms following a low-cost strategy would look for available opportunities for reducing their costs and their approach to offshoring may be mixed.

From Table 3 (Models 3a and 3b), we observe that growth percent is neither significantly associated with number of jobs offshored ($\beta = 0.105$, ns) nor with the number of functions offshored ($\beta = 0.150$, ns). Results exhibit that growth strategy is not associated with the degree of offshoring and both the hypotheses 3 and 4 are not supported. Thus, firms following growth strategy may be using modalities other than offshoring. Understandably, most of the growth oriented firms may want to expand their ‘complete business’ and not

Table 2: Descriptives and correlations

	Mean	Std. Dev	1	2	3	4	5	6	7	8
1. Jobs Offshored	2172.46	3867.59	1.00							
2. Functions Offshored	1.68	1.21	0.47**	1.00						
3. Assets	47419.73	137027.56	0.12	0.25**	1.00					
4. Foreign Sales	37.85	24.44	0.05	-0.06	-0.06	1.00				
5. Optg. Expense	0.93	0.47	-0.07	-0.11	-0.13	0.09	1.00			
6. Interest Expense	0.03	0.08	-0.08	0.10	0.61**	-0.17*	0.04	1.00		
7. Growth Percent	13.53	52.06	-0.04	-0.06	-0.06	-0.05	0.44**	-0.05	1.00	
8. R&D Expenditure	785.02	1491.92	0.34**	0.29**	0.55**	0.29**	-0.16*	0.03	-0.09	1.00

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Note: In the analyses the dependent variables are number of jobs offshored and number of functions offshored. The independent variables in the strategic orientation perspective are the mean of figures for that variable for three years (Year -1 to Year -3) [Average (Value Year -1 to Value Year -3)], where Year 0 is the offshore event year.

Optg. = operating, R&D = research and development

Table 3: Results of negative binomial regression: Strategic orientation

Variables	Number of Jobs Offshored				Number of Functions Offshored			
	Model 1a	Model 2a	Model 3a	Model 4a	Model 1b	Model 2b	Model 3b	Model 4b
Step 1: Control⁵								
Size (Assets)	0.040 (0.137)	0.519 (0.388)	0.512 (0.386)	-0.086 (0.441)	0.087 (0.055)	0.109 (0.163)	0.101 (0.164)	-0.168 (0.244)
Foreign Sales	0.307 (0.483)	-0.067 (0.631)	-0.076 (0.631)	0.028 (0.812)	0.070 (0.235)	0.003 (0.288)	-0.009 (0.289)	-0.153 (0.345)
Step 2: Low Cost Strategy								
Operating Expense		0.238 (0.212)	0.186 (0.272)	0.259 (0.293)	-0.188 (0.212)	-0.243 (0.213)	-0.141 (0.190)	
Interest Expense		-0.508 ** (0.122)	-0.509** (0.122)	-0.489** (0.120)	-0.878 (0.551)	-0.921* (0.554)	-0.618 (0.610)	
Step 3: Growth Strategy								
Growth Percent			0.105 (0.339)	0.022 (0.389)		0.150 (0.163)	0.099 (0.177)	
Step 4: Innovation Strategy								
R&D Expenditure				0.287* (0.161)				0.110* (0.056)
Constant	7.088 ** (0.434)	7.992 ** (1.356)	8.000 ** (1.355)	6.953 ** (1.114)	0.614** (0.230)	0.723 (0.634)	0.755 (0.633)	0.728* (0.321)
Pseudo R ²	0.0142	0.0243	0.0244	0.0286	0.0176	0.0241	0.0259	0.0273
Log likelihood	-1082.246	-683.362	-683.313	-541.559	-312.367	-202.488	-202.113	-157.140

offshore only ‘part of their business processes’. They may enter foreign nations either through wholly owned subsidiaries and strategic alliances or may use mergers and acquisitions (Lu 2006; Aldag & Stearns, 1991). Although, the use of offshoring may also help firms pursue their growth as well as strategic alliances objectives simultaneously (Wiseman, 1985), our findings suggest that firms have yet to use offshoring as a strategic expansion option.

The results in Table 3 (Models 4a and 4b) show that the relationship of innovation strategy variable of R&D expenditure with the number of jobs offshored is significant ($\beta = 0.287$, $p < 0.05$). Further, R&D expenditure is also significantly related to the number of functions offshored ($\beta = 0.110$, $p < 0.05$). Thus, innovation strategy is positively associated with the degree of offshoring providing support to hypotheses 5 and 6. The results for hypotheses 5 and 6, lend credence to the theoretical perspectives relating innovation and knowledge with the degree of offshoring. Firms following an innovation strategy consistently offshore more jobs as well as functions. The result reiterates the strategic motivation for innovative firms to offshore more with a view to developing organizational knowledge and enhancing strategic flexibility (Hitt et al., 1998; Medina et al., 2005; Wolfe, 1994). The result is interesting as it not only provides support to prior research on the impact of organizational forms on innovation (Hitt et al., 1998; Medina et al., 2005; Schilling & Steensma, 2001) but also to the recent research on the growing importance of innovation in the scenario of service and knowledge intensive industries (Leiponen, 2005). Further, from Table 3, we see that most of

⁵ We also control for industry segment by creating five industry dummies as per NAICS classification

* $p < 0.05$, ** $p < 0.01$; N=306, Upper number in a cell is a parameter estimate; numbers in parentheses are standard errors

the functions offshored from US are knowledge work, and such firms generally compete on innovation and knowledge resources. Hence, clearly firms following an innovation strategy are offshoring more in terms of both, number of jobs and number of functions.

Implications for Research and Practice

To our knowledge, this is the first study using a strategy-theoretic perspective for analyzing IT enabled offshore sourcing decision. Through this research we make some important contributions which have implications for research and practice, as elaborated in the following section.

Implications for Research

Through a theoretical deliberation of path dependency theory, we conceptualize strategic orientation perspective that firms may have while making a strategic decision. Subsequently, we applied this conceptualized model to the offshoring context. Future research can test and refine our proposed model in contexts other than offshoring.

The association of innovation strategy with the degree of offshoring demonstrates the ‘knowledge-asset motivation’ of decision makers in corporations. Our research shows that knowledge assets are still important strategic considerations for managerial decisions. However, managers do not consider them to be “sticky assets”, and view them as mobile assets (because of developed ICTs) that can be used across national boundaries. We suggest that researchers study this profound change in managerial perspective.

Contrary to popular belief, our study shows that offshoring decision is more strongly related to ‘knowledge and innovation requirements’ as compared to ‘cost arbitrage requirements’. Our results show a robust support for innovation strategy (R&D) with degree of offshoring. This implies that future researchers should explore offshoring from knowledge-theoretic perspective, instead of merely looking from cost-arbitrage perspective.

The finding that offshoring decision is strongly related to innovation strategy opens a new avenue for research to explore the reasons why companies are offshoring for innovation, and whether companies are able to achieve their strategic objectives. Even though, Quinn (2000) had highlighted, the need for outsourcing innovation to remain competitive and retain a “sustainable leadership position” (p 13), researchers have not yet delved deeper into this aspect. Our finding supports Quinn’s argument in the offshoring context and supports Moitra & Krishnamoorthy’s (2004) visualization of a ‘global innovation exchange’ – a borderless scenario for R&D where the best talents of the world are able to chip in their efforts. Theoretically, offshoring can support growth; still our study finds no such statistical relationship. Future researchers can study the reasons for the non-association of growth strategy with the degree of offshoring.

The paper makes methodological contributions as well. In contrast to previous studies, we define the degree of offshoring as consisting of dual dimensions: number of jobs offshored and number of functions offshored. Both these dimensions capture different attributes of the offshoring decision. This unique operationalization can assist researchers in future studies on the degree of offshoring.

Another methodological contribution is the use of an innovative data source. Firms are inhibited from sharing offshoring related information with researchers because of political and employee sensitivity surrounding an offshoring decision. However, we used an

innovative data source. For this study, we used a website that has been built with a view to protect the rights of US workers and provides updated information on offshore activity in the US. However, we used data of only public companies that were available from Compustat. So, the generalization is limited to publicly held companies. Further research will allow us to understand, if the same results hold true for privately held firms.

Implications for Practice

This study has several implications for practice. First, the study dispels the popular belief that offshoring is mainly about cost reduction. We find that offshoring is a planned strategic action to acquire innovative and knowledge capabilities. Our results show that firms use offshoring more as a tool for innovation and learning, and that cost is often not the main consideration. Knowledge acquisition appears to be the most important motivation associated with the degree of offshoring. Further research can explore if motivation in knowledge acquisition is in turn motivated by lack of workforce knowledge or skill in the client's geography. The results have clear implications for firms operating in the knowledge sector or following an innovation strategy. Decision makers in firms following an innovation strategy should consciously try to identify activities they will benefit most in terms of knowledge and skills. The general support of the *strategic orientation* hypotheses unambiguously exhibits that IT enabled offshoring is a well deliberated action in conformity with the firm's strategy.

References

- Aldag, R. J., and Stearns, T. M. *Management (2d ed.)*. Cincinnati, OH: College Division, South-Western Pub. Co., 1991.
- Ang, S., and Cummings, L. "Strategic Response to Institutional Influence on Information Systems Outsourcing," *Organization Science*, (8:3), 1997, pp.235-256.
- Ang, S., and Straub, D. "Production and Transaction Economies and IS Outsourcing: A Study of the U.S. Banking Industry," *MIS Quarterly*, (22:4), 1998, pp. 535-552.
- Aron, R., Clemons, E. K., and Reddi, S. "Just Right Outsourcing: Understanding and Managing Risk," *Journal of Management Information Systems*, (22:2), 2004, pp. 37-55.
- Aron, R. and Singh, J. V. "Getting Offshoring Right," *Harvard Business Review*, (83:12), 2005, pp. 135-143.
- Arthur, W. B. "Positive Feedbacks in the Economy," *Scientific American*, (262:2), 1991, pp. 92-99.
- Brown, R. M., Gatian, A. W., and Hicks Jr, J. O. "Strategic Information Systems and Financial Performance," *Journal of Management Information Systems*, (11:4), 1995, pp. 215-248.
- Brynjolfsson, E., Malone, T. W., Gurbaxani, V., and Kambil, A. "Does Information Technology Lead To Smaller Firms," *Management Science*, (40:12), 1994, pp. 1628-1644.
- Christensen, J. L. and Drejer, I. "The Strategic Importance of Location: Location Decisions and the Effects of Firm Location on Innovation and Knowledge Acquisition," *European Planning Studies*, (13:6), 2005, pp. 807-814.
- Daft, R. L., and Lewin, A. Y. "Where Are the Theories for the "New" Organizational Forms? An Editorial Essay," *Organization Science*, (4:4), 1993, pp. 513-528.
- David, P. A. "Clio and the Economics of QWERTY," *The American Economic Review*, (75:2), 1985, pp. 332-337.
- Dess, G. G., and Davis, P. S. "Porter's (1980) Generic Strategies as Determinants of Strategic Group Membership and Organizational Performance," *Academy of Management Journal*, (27:3), 1984, pp. 467-488.

- Dibbern, J., Goles, T., Hirschheim, R., and Jayatilaka, B. "Information Systems Outsourcing: A Survey and Analysis of the Literature," *The Database for Advances in Information Systems*, (35:4), 2004, pp. 6-102.
- Gardner, W. D. "Expect offshore IT services to grow," 2006, accessed September 21, 2006, <http://www.informationweek.com>.
- Goodstein, E. "The Economic Roots of Environmental Decline: Property Rights or Path Dependence?," *Journal of Economic Issues*, (29:4), 1995, pp. 1029-1043.
- Gujarati, D. N. *Basic econometrics (4th Ed.)*. New York, NY: McGraw-Hill Irwin, 2003.
- Guglielmo, K. "Gartner picks best offshore destinations," 2004, accessed September 21, 2006, available at <http://SearchCIO.com>.
- Hill, C. W. L. "Differentiation versus Low Cost or Differentiation and Low Cost: A Contingency Framework," *Academy of Management Review*, (13:3), 1988, pp. 401-412.
- Hirschheim, R., Loebbecke, C., Newman, M., and Valor, J. "Offshoring and its Implications for the Information Systems Discipline," *Proceedings Twenty-Sixth International Conference on Information Systems*, Las Vegas, Nevada, 2005.
- Hitt, M., Harrison, J., Ireland, R. D., and Best, A. "Attributes of Successful and Unsuccessful Acquisitions of US Firms," *British Journal of Management*, (9:2), 1998, pp. 91-114.
- Jaffe, A. B., Trajtenberg, M., and Henderson, R. "Geographic Localization of Knowledge Spillovers as Evidenced By Patent Citations," *The Quarterly Journal of Economics*, (108:3), 1993, pp.577-598.
- Kaiser, K. M., and Hawk, S. "Evolution of Offshore Software Development: From Outsourcing to Cosourcing," *MIS Quarterly Executive*, (3:2), 2004, pp. 69-81.
- Kermani, F. and Gittins, R. "Where Will Industry Go To For Its High-Calibre Staff?," *Journal of Commercial Biotechnology*, (11:1), 2004, pp.63-71.
- Krugman, P. "History and Industry Location: The Case of the Manufacturing Belt," *The American Economic Review*, (81:2), 1991, pp. 80-83.
- Lawless, M. K., and Finch, L. K., "Choice and Determinism: A Test of Hrebiniak and Joyce's Framework on Strategy-Environment Fit," *Strategic Management Journal*, (10:4), pp. 351-365.
- Leiponen, A. "Skills and Innovation," *International Journal of Industrial Organization*, (23:5-6), 2005, pp. 303-323.
- Loh, L., and Venkatraman, N. "Determinants of Information Technology Outsourcing: A Cross-Sectional Analysis," *Journal of Management Information Systems*, (9:1), 1992, pp. 7-24.
- Lu, C. C. "Growth Strategies and Merger Patterns among Small and Medium-Sized Enterprises: An Empirical Study," *International Journal of Management*, (23:3), 2006, pp. 529-547.
- Medina, C. C., Medina, A., Carmona, L. and Ramón, V. C. "Characteristics of Innovative Companies: A Case Study of Companies in Different Sectors," *Creativity and Innovation Management*, (14:3), 2005, pp. 272-287.
- Mitra, S., and Chaya, A. K. "Analyzing Cost-Effectiveness of Organizations: The Impact of Information Technology Spending," *Journal of Management Information Systems*, (13:2), 1996, pp. 29-57.
- Murray, A. I. "A Contingency View of Porter's Generic Strategies," *Academy of Management Review*, (13:3), 1988, pp. 390-400
- Moitra, D. and Krishnamoorthy M. B. "Global Innovation Exchange: Realizing Extended Innovation in R&D," *Research Technology Management*, (47:4), 2004, pp. 32-38.
- Nicholson, B. and Sahay, S. "Embedded Knowledge and Offshore Development," *Information and Organization*, (14:4), 2004, pp. 329-365.

- Ohlson, J. A. "Financial Ratios and the Probabilistic Prediction of Bankruptcy," *Journal of Accounting Research*, (18:1), 1980, pp. 109-131.
- Pearce, J. A., II, and Harvey, J. W. "Concentrated Growth Strategies," *Academy of Management Executive*, (4:1), 1990, pp. 61-68.
- Porter, M. E., and Stern, S. "Innovation: Location Matters," *Sloan Management Review*, (42:4), 2001, pp. 28-36.
- Porter, M. E. *Competitive Strategy*. New York, NY: The Free Press, 1980.
- Porter, M. E. Technology and Competitive Advantage. *The Journal of Business Strategy*, (5:3), 1985, pp. 60-77.
- Quinn, J.B. "Outsourcing Innovation: The New Engine of Growth," *Sloan Management Review*, (41:4), 2000, pp. 13-28.
- Rost, J. *The Insider's Guide to Outsourcing Risks And Rewards*. New York, NY: Auerbach Publications, 2006.
- Robbins, S. P., and Decenzo, D. A.. *Fundamentals of Management*. Upper Saddle River, NJ: Prentice Hall, 2001.
- Schilling, M., and Steensma, H. The Use of Modular Organizational Forms: An Industry-Level Analysis. *Academy of Management Journal*, (44:6), 2001, pp.1149–1169.
- Setterfield, M. A Model of Institutional Hysteresis. *Journal of Economic Issues*, (27:3), 1993, pp. 755-774.
- Smith, M. A., Mitra, S., and Narasimhan, S. Information Systems Outsourcing: A Study of Pre-Event Firm Characteristics. *Journal of Management Information Systems*, (15:2), 1998, pp. 61-93.
- Srivastava, S.C., Teo, T.S.H. and Mohapatra, P. "Business related determinants of offshoring intensity," *Information Resources Management Journal*, 2007, Forthcoming.
- Stack, M., and Downing, R. "Another Look at Offshoring: Which Jobs are at Risk and Why?," *Business Horizons*, 48, 2005, pp. 513-523.
- Song, J., Almeida, P., and Wu, G. "Learning-by-Hiring: When is Mobility More Likely to Facilitate Interfirm Knowledge Transfer?," *Management Science*, (49:4), 2003, pp. 351-365.
- Stopford, J. M., and Dunning, J. H. *The World Directory of Multinational Enterprises 1982-1983*, Gale Research Company, Detroit, MI, 1983.
- Sullivan, D. Measuring The Degree Of Internationalization of a Firm. *Journal of International Business Studies*, (25:2), 1994, pp. 325-342.
- TechsUnite. *TechsUnite.org – IT News and IT Worker Resources*, 2006, available at <http://www.techsunite.org/>, accessed March-April, 2006.
- Teng, J. T. C., Cheon, M. J., and Grover, V. "Decisions to Outsource Information Systems Functions: Testing A Strategy-Theoretic Discrepancy Model," *Decision Sciences*, (26:1), 1995, pp. 75-103.
- Venkatraman, N. "The Concept of Fit in Strategy Research: Toward Verbal and Statistical Correspondence," *The Academy of Management Review*, (14:3), 1989, pp. 423-444.
- Watson, J. "Growth in Offshoring Predicted," *Computing*, 2005, accessed on September 21, 2006 available at <http://www.itweek.co.uk>.
- Whitaker, J., Mithas, S., and Krishnan, M. S. "Antecedents of Onshore and Offshore Business Process Outsourcing," *Proceedings Twenty Sixth International Conference on Information Systems*, Las Vegas, NV, 2005.
- Wiseman, C. *Strategy & Computer: Information Systems as Competitive Weapons*. New York: Dow-Jones Irwin, 1985.
- Wolfe, R. A. "Organizational Innovation: Review, Critique and Suggested Research Directions," *The Journal of Management Studies*, (31:3), 1994, pp. 405-431.

Zook, C., and Allen, J. *Profit from the Core: Growth Strategy in an Era of Turbulence*. Boston: Harvard Business School Press, 2001.