

Business Process Outsourcing and Market Value of Firms

Full Paper

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Introduction

A profound change that has occurred over the last two decades has been the tendency of firms to increasingly outsource tasks and functions that were traditionally done in-house. Business process outsourcing which involves the management and execution of the processes and functions of a firm by an external service provider (Michell and Fitzgerald 1997) first attempted in the mid 90s has become popular more recently with the growth of the Internet and with the recognition that non-core but yet critical processes can be handled offsite by external providers. The potential for cost reduction and the increased flexibility that comes with outsourcing explains why outsourcing is favorably viewed by business leaders. While these benefits are important motivations for firms to outsource, the current trends in outsourcing also reflects the bandwagon effects common when new paradigms come into vogue (Swanson & Ramilier, 2004). The decision to outsource business processes might not always be for reasons of cost reduction but could be driven by pressures to be isomorphic to the environment. Thus it remains to be seen if and whether outsourcing pays off for many of these firms.

Along with the potential benefits of business process outsourcing one has to consider the risks as well (Aron et al, 2005, Gewald & Gellrich, 2007). In general, loss of control over the quality of service (Foxman 1994), reduced flexibility, and loss of strategic alignment are often expressed as the drawbacks of outsourcing. Aron et al (2005) argued that process outsourcing entails operational, strategic and intrinsic risks associated with moving activities to external service providers and to remote locations and Gewald & Gillrich (2007) argued that large contracts and lengthy deals increase the risks associated with outsourcing.

Given the prevalence of outsourcing and the controversy associated with outsourcing, credible evidence of the shareholder value of outsourcing is necessary to guide managerial decision making. While recent studies have examined the value of outsourcing specific processes such as IT, human resources and manufacturing there is a need to adopt a broader focus to examine the effects of business process outsourcing in general. As a corporate initiative, process outsourcing can be viewed as a means to increase corporate focus on core competence and an effort to leverage external resources to enhance the competitiveness of the firm. From this standpoint, one can view all business process outsourcing as corporate initiatives aimed at achieving these goals. While studies focused on specific processes provide insights specific to that process, the need to answer the more general question as to whether outsourcing yields value motivates this study.

We use an event study methodology to address our research questions. We hypothesize that business process outsourcing leads to superior value as reflected by significant positive cumulative abnormal returns (CARs) to shareholders. We also attempt to address an issue which has received very limited attention in the outsourcing literature, namely, the effects of the provider location and the nature of the processes outsourced on firm valuation. Off shoring allows firms to gain through labor arbitrage. However, off-shoring also entails risks and challenges in managing outsourcing contracts and relationship. These considerations raise questions about whether onshore and offshore outsourcing could affect to the valuation of the firm differently. Process outsourcing today has moved beyond typical back office labor intensive tasks to core activities of a firm such as

research and development and other knowledge work. We posit and empirically test whether the market response to business process outsourcing announcement differs based on how knowledge intensive the outsourced processes are.

Theory and Hypotheses

In this study, we adopt a resource based view and conceptualize outsourcing as a strategic initiative that is aimed at leveraging external resources for value creation. In this vein, outsourcing can be viewed as strategic actions aimed at structuring the firm's resource portfolio to provide wider access to complementary resources (Harrison, Hitt, Hoskisson, and Ireland, 2001). Langlois and Robertson (1995) have argued that firm boundaries can be determined by comparing internal capabilities with the capabilities of competitors. From a resource based view, superior performance achieved in organizational activities relative to competitors would explain why such activities are performed internally. Activities in which the organization lacks the necessary resources or capabilities internally can be outsourced. Organizations can access complementary capabilities from external providers where they can gain no advantage from performing such activities internally. Thus, it is possible for organizations to combine resources in unique ways across organizational boundaries to obtain an advantage over their competitors (Dyer and Singh, 1998) and to the extent they do so investors could be expected to adjust their future valuation of the firm.

Differences in the business practices and cultural norms across different geographical locations make on-shore and offshore outsourcing different (Larsson et al., 1998). Hence, the risks and benefits of business process outsourcing are contingent on the geographical location of the service provider. Thus, one would expect investors to react to onshore and offshore outsourcing announcements differently.

Business processes differ in terms of their knowledge intensity. Low knowledge intensity processes are easily routinized. Routinized processes are easier to outsource because process knowledge is codified into explicit rules and procedures and these processes can be easily decoupled from other processes in the firm and transferred to external service providers (Ge, Konnana & Tanriverdi, 2005). Thus, the coordination required between the firm and the service providers are minimal. In contrast, the challenges associated with outsourcing knowledge intensive processes are significant. Typically, knowledge for executing these processes is deeply intertwined with the firm's social, organizational, and historical context. Hence they are difficult to codify and transfer to the service provider. Knowledge intensity stands to substantially increase the difficulty of transferring processes to external service providers (Martin and Salomon 2003). These differences could be discerned by the investors and would be reflected in their responses to a firm's outsourcing initiative.

In addition to the main effects we consider below the joint effects of both the nature of processes outsourced and the location they are outsourced to on the market value of the firm. We posit that risks associated with outsourcing knowledge intensive processes to an offshore location might be significantly higher than those of outsourcing the same processes to onshore service providers. Outsourcing labor intensive processes to offshore service providers could yield significant payoffs. Since these processes are typically non-strategic in nature, risks associated with outsourcing these processes to offshore locations are lesser. Outsourcing labor intensive process to onshore service providers while beneficial in simplifying a firm's agenda by allowing it to focus on its core competencies may not yield the cost savings possible through offshoring. These differences in the risk-return possibilities of the different outsourcing options are likely to be factored into investors' responses to a firm's outsourcing initiatives.

Thus we posit the following hypotheses

Hypothesis 1: The abnormal stock market returns attributable to business process outsourcing are positive.

Hypothesis 2: The abnormal stock market returns attributable to offshore business process outsourcing will be different from those attributable to onshore business process outsourcing.

Hypothesis 3: The abnormal stock market returns attributable to outsourcing labor intensive business processes will be different from those attributable to outsourcing knowledge intensive business processes.

Hypothesis 4a: The knowledge intensity of the process will positively moderate the abnormal stock market returns attributable to onshore outsourcing of business processes.

Hypothesis 4b: The knowledge intensity of the process will negatively moderate the abnormal stock market returns attributable to offshore outsourcing of business processes.

Methodology and Results

We employed an event study, a commonly used research method in the accounting, economics, finance, and management literature, to examine the economic impact of business process outsourcing. The target population for the study was U.S Fortune 1000 firms. We followed a systematic process in identifying the outsourcing announcement of these firms and ended with a sample of 375 announcements, after eliminating any confounding, duplicate or irrelevant announcements. Tables 1 & 2 provide the descriptive details of our data.

Industry	Number of Firms	Percentage
Mining, Oil & Gas	16	4.27%
Construction	1	0.27%
Manufacturing	133	35.47%
Wholesale Trading	14	3.73%
Retail	29	7.73%
Transportation & Warehousing	11	2.93%
Information Technology	29	7.73%
Finance & Insurance	91	24.27%
Real Estate	1	0.27%
Professional & Administrative Services	24	6.40%
Health Care	6	1.60%
Hotel & Food Services	6	1.60%
Missing	13	3.47%

Table 1: Business Process Outsourcing Announcements by Industry (N=375)

We analyzed the full text of the announcements to identify the location of the service provider. We followed a systematic process to determine the knowledge intensity of the process. First we developed a coding scheme that allowed us to assess the knowledge intensity of the process. Next, two researchers independently analyzed the full text of the announcements to determine what processes are being outsourced. In most cases the processes being outsourced (e.g. payroll processing, customer support) were quite explicitly mentioned in the announcements. In the few cases where these were not explicitly mentioned, we searched other news sources as well as the provider’s web site to get more information about the nature of the process outsourced.

	Min	Max	Mean	SD
Revenue (\$ Millions)	716.46	164196.00	19615.16	27418.04
Operating Income (\$ Millions)	-3965.00	45132.00	4288.16	7256.90
Total Assets (\$ Millions)	336.30	1264032.00	85869.48	189867.70
Number of Employees	1251.00	438000.00	49713.47	70479.76

N= 375

Table 2: Descriptive Statistics

Tables 3 presents the cumulative abnormal returns for different time windows for the various types of outsourcing. It is seen that mean CAR for all the event windows are positive and range from a .26% to 1.26%. The abnormal returns are significant in all four event windows (CAR[-1, 1]: .26, $p < .10$; CAR [-2, +2]: .52%, $p < .10$; CAR[-3, +3]: .58%, $p < .10$; CAR[-5,+5]: 1.26%, $p < .01$). Overall, these results suggest that the market perceives business process outsourcing as an initiative that is likely to generate future benefits for the firms. Thus, H1 is supported.

Event Window	N	Parametric Tests		Nonparametric Tests	
		Mean CAR (%)	Patell Z	Positive: Negative (Number of Events)	Generalized Sign Z
(-3, 3)	375	0.58	1.514*	188:187	-0.115
(-2, 2)	375	0.52	1.503*	206:169	1.736**
(-1, 0)	375	0.26	1.365*	194:181	0.505

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$

Table 3: Cumulative Abnormal Returns for Process Outsourcing

The hypotheses 2 and 3 compare the various outsourcing options and posit that the abnormal returns will be different for these various options. We ran one way Anova to test for differences in the CARs across the various subgroups in our sample. The results summarized in Table 4 indicate that the abnormal returns are significantly different between labor intensive and knowledge intensive processes ($F = 3.08, p < .10$) whereas the differences between onshore and offshore outsourcing is not statistically significant ($F=1.76, p < .20$). These results indicate that H2 is not supported but H3 is supported.

DV: CAR (-2, 2)		Knowledge Intensity		F (Prob)
		Labor Intensive	Knowledge Intensive	
Location	Onshore	-0.2%	0.4%	1.86 (0.174)
	Offshore	-0.9%	1.9%	
	F (Prob)	3.08 (0.080)*		

* $p < 0.1$

Table 4: Anova Results Comparing Cumulative Abnormal Returns for Outsourcing Options

In event studies, it is customary to follow up the comparative analysis with regression analysis that considers appropriate covariates that could account for the observed variance in the abnormal returns. Several factors have been identified in past outsourcing studies as important covariates that should be accounted for in such an analysis. Based on a synthesis of these studies (Hayes Hutton & Reck, 2000; Gill, 2005; Oh, Gallivan & Kim, 2006; Gewald & Gellrich, 2007) we include the following covariates in our analysis: client size measured using both, assets and sales, client employee intensity, client industry, provider size measured using both, assets and sales, contract value, contract length, and event year. We measured the contract length in months, based on the duration a deal is specified to be in the announcement. Similarly, we determined the total dollar value of the deal for each announcement and used the log of this as our measure of contract value¹. Client and provider data was collected from Compustat. We used the first digit of the NACIS code for the client industry to create industry dummies and, used the announcement year to create year dummies. We also coded whether the outsourcing was IT or a not IT process and used this as a dummy variable in the regression. We ran three regression models, one with the CAR for the event window (-1, 0) as the dependent variable, one with the CAR for the event window (-2, 2) and the third with the CAR for the event window (3, 3). The above identified covariates were used as controls in the three models.

The results summarized in Table 5 indicate that the overall regression results are significant for all three models. It is seen that outsourcing location has a significant positive effect on CAR [-1, 0] suggesting that offshore outsourcing is perceived to be value enhancing. The results also indicate that the knowledge intensity of the

¹ Missing values for contract value, contract length and provider details reduced the sample size to 148.

process has a significant positive relationship with the CAR in two of the three models. This suggests that outsourcing knowledge intensive processes are perceived to be value enhancing by the stock market. Since we considered processes with low knowledge intensity as labor intensive processes in our comparative analysis, these results do suggest that the market response to outsourcing labor intensive processes are indeed different from those outsourcing knowledge intensive processes. Interestingly, it is seen that outsourcing knowledge intensive processes seem to yield greater value than outsourcing labor intensive processes.

Examining the interaction term, it is seen that in all three models the interaction term has negative coefficients and is significant in one. The negative coefficients indicate that offshore outsourcing of knowledge intensive processes is perceived as value destroying for the firm and conversely onshore outsourcing of knowledge intensive process is value enhancing for the firm. Thus, H4a & H4b are supported. Interestingly, the main effects indicate that outsourcing knowledge intensive processes in general enhances firm value, whereas the interaction results suggest that offshoring them is perceived to be value destroying by the stock market.

Discussion

We started this enquiry with the objective of understanding the business value of process outsourcing. We posited and found that business process outsourcing has a positive effect on the market value of firms and this effect differs based on the nature of the processes outsourced and the location they are outsourced to. Our finding that the stock market response to business process outsourcing is modestly positive is consistent with the general belief that outsourcing is likely to be value adding to client firms and explains the current popularity of this business practice. Our comparative analysis suggested that the market seems to be indifferent between offshore and onshore outsourcing. Nevertheless, the differences in the market response between onshore and offshore outsourcing illustrates that investors are able to discern the risk-return profile of different outsourcing initiatives. Moreover, the regression results do highlight that the market seems to respond more favorably to offshore outsourcing than onshore outsourcing. Interestingly, we found that the market seems to respond more favorably when knowledge intensive processes are outsourced than when labor intensive processes are outsourced. This is a surprising result as it was expected that outsourcing labor intensive process is less risky and easier to manage. One possible explanation could be that the market is responding favorably to these outsourcing decisions because of the potential to leverage external knowledge resources cost effectively. Nevertheless the risks associated with outsourcing knowledge intensive processes are real and our results suggest that when the service provider is local, the market seem to assess the benefits of capability leverage to outweigh such risks.

However, our findings that outsourcing knowledge intensive processes to offshore locations could be value destroying for the firm indicates that risks are indeed a factor when investors evaluate outsourcing initiatives. Many countries such as India and China are in the process of formulating intellectual property protection rights that are in line with the norms here in the US. Even so, significant differences exist in the IP laws across nations which have been a source of concern for many outsourcing firms. Nevertheless, this risk could reduce with time and it would be useful to reassess the risks associated with offshore outsourcing knowledge intensive processes periodically. The results indicate that in addition to risks, investors are factoring in the fact that the high coordination costs associated with managing knowledge intensive processes offshore could reduce the potential gains from capability leverage.

This study has several implications for practice. The basic findings that process outsourcing is value enhancing to the firm should help managers justify and rationalize their outsourcing decisions. Outsourcing has adverse consequences such as lost jobs that would have to be considered in managerial decision making. The results reported here at a minimum provide information that could help shape the discourse about outsourcing based on objective findings. Our findings that outsourcing knowledge intensive processes is more value enhancing than outsourcing labor intensive processes suggests firms should consider the option of leveraging external expertise when feasible. However, the risks of such outsourcing do increase when the provider is offshore and firms have to take appropriate steps to mitigate these risks. Adopting appropriate governance structures, developing in-house contracting and project management skills and designing clear contracts with measurable goals and service levels are some ways to mitigate the risks associated with outsourcing.

Variables ²	Model 1 DV: CAR (-1, 0)			Model 1 DV: CAR (-2, 2)			Model 2 DV: CAR (-3, 3)		
	I	II	III	I	II	III	I	II	III
Knowledge Intensity of the Process	-	.005 (1.50)	.002 (0.17)	-	.0039* (1.64)	.0062** (2.02)		.008* (1.70)	-.010 (0.57)
Provider Location	-	.023* (1.67)	.031 (1.05)	-	.006 (1.14)	.0059 (0.66)		.009 (0.51)	-.028 (0.75)
Knowledge Intensity X Provider Location	-	-	-.007 (0.56)	-	-	-.0086* (1.78)		-	-.179 (1.12)
Contract Value	-	-.0003 (0.37)	-.0004 (0.43)	-	-.00009 (-0.26)	-.0001 (-0.45)		-.001 (1.11)	-.001 (0.93)
Contract Length	-	-.0001(0.16)	-1.09e-06 (0.01)	-	3.96e-06 (0.13)	-1.53e-06 (-0.05)		6.45e-06 (0.06)	.000 (0.35)
Client Size – Assets	3.60e-08** (2.95)	2.41e-08 (1.01)	3.54e-08 (1.46)	1.20e-08* (1.53)	1.24e-08* (1.53)	1.14e-08* (1.43)	4.29e-08 (1.56)	4.75e-08* (1.73)	5.04e-08 (1.63)
Client Employee Intensity	.510 (0.44)	.477 (0.43)	.453 (0.39)	.170 (0.44)	.209 (0.54)	.0612 (0.16)	.167 (0.12)	.109 (0.08)	.213 (0.14)
Provider Size - Sales	2.33e-07** (2.10)	2.48e-07** (2.13)	2.14e-07* (1.89)	7.79e-08** (2.10)	8.08e-08** (2.10)	7.24e-08* (1.88)	2.64e-07 (1.41)	2.60e-07 (1.29)	2.34e-07 (1.13)
Client Industry Dummies	Included	Included	Included	Included	Included	Included	Included	Included	Included
Year Dummies	Included	Included	Included	Included	Included	Included	Included	Included	Included
IT vs Non IT dummy	Included	Included	Included	Included	Included	Included	Included	Included	Included
Observations	148	148	148	148	148	148	148	148	148
R Square	.147	.149	.181	.147	.156	.179	.092	.119	.159
Adjusted R Square	.060	.065	.067	.065	.060	.072	.048	.060	.079
F Value (Significance)	1.79 (0.050)	1.67 (0.074)	1.59 (0.071)	1.79 (0.055)	1.63 (0.074)	1.67 (0.050)	2.02 (0.041)	1.67 (0.074)	1.59 (.072)

*** p<0.01; ** p<0.05; * p<0.1

Table 5: Regression Results

² We also ran the models using sales for client size and assets for provider size. The results were identical to the ones presented here.

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