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The Impact of ICT-enabled Offshoring Announcements on Share Prices

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The Impact of ICT-enabled Offshoring Announcements on Share Prices

Abstract

Purpose - To determine the impact of announcements regarding ICT-enabled offshoring on the share prices of public companies.

Method/approach – The study is carried out by means of an event study.

Findings - The finding from this research is that investors do not tend to reward offshoring announcements. It is most likely that the value of the firm will be perceived as unchanged or if there is a reaction, it is most likely to reduce the value of the firm. A positive relation between size of firm and the size of the offshoring contract is found. Also, US investors are found to be more likely to react negatively than UK investors.

Research implications – This study extends the use of event studies in the IS domain to ICT-enabled offshoring.

Limitations – Due to the relatively nascent state of offshoring, and consistent with previous event studies, the data set used in this study is relatively modest.

Practical implications – Managers in many types of organisations are currently undertaking or considering offshoring, this study will enable them to understand the possible reactions of shareholders and other stakeholders.

Originality/value – This study provides an empirical contribution by undertaking the first event study of offshoring announcements. It is also one of very few event studies that considers both UK and US-based companies. Its use of transaction cost economics (TCE) perspective also adds to the theoretical understanding of offshoring, by demonstrating that investors appear to consider increased transaction costs involved in offshoring will outweigh lower purchasing or production costs.

Keywords: offshoring, share price, event study

Paper type: research paper

Introduction

Over the last few years a new term has been added to the lexicon of the business world, that of offshoring (Venkatraman, 2004, Farrell, 2005). Offshoring has been described as '*the organisational and technological ability to relocate specific tasks and coordinate a geographically dispersed network of activities*' (Levy, 2005). Whilst the term covers the transfer of both manufacturing and service activities, it is particularly associated with the use of information and communication technologies (ICT) to move information and service-based activities to lower cost countries. The benefits attributed to offshoring include cost savings and increased flexibility (Rottman and Lacity, 2006). In this study we combine strands of economics, finance and IS literature to investigate the changes in share prices, and hence market valuations of public firms, following ICT-enabled offshoring announcements. We argue that the rationale underlying offshoring decisions can be understood by reference to Transaction Cost Economic (TCE) theory (Williamson, 1985). The central question addressed in this study is, what value is ascribed to offshoring announcements by shareholders and other stakeholders. We position this question and related hypotheses in the context of earlier research on the impact of outsourcing and investment in ICT on firm value. Methodologically we refer to financial economics and draw from the Efficient Market Hypothesis (EMH) (Fama, 1976) and Capital Asset Pricing Models (CAPM) (Sharpe, 1964) to detect the evidence of offshoring on the UK and US companies using an event study approach.

Event studies of outsourcing arrangements have previously been undertaken (Oh et al, 2006). However, to our knowledge, this is the first such study of offshoring announcements. Due to the potential for increased risks associated with offshoring compared to domestic outsourcing or inshoring, may well result in quite different reactions from investors. This study is also unique in that it considers the reactions of investors in the UK stock market to organisational announcements of offshoring as well as US investors and events. To date, all other event studies in the ICT domain have only considered announcements by US companies and the consequent US investor reactions.

The paper commences by arguing that offshoring can be understood as a managerial response to the possibility of reducing costs by buying-in services rather than continue with internally produced or sourced ICT enabled business services. A brief review of the literature relating to offshoring and of the use of the event study approach in the ICT domain is then presented. The data collection and analysis method is then described and the findings of the study are presented. We then present a discussion of these findings. Following a statement of the conclusions which we draw from this work, we identify the relevance to practitioners. Finally, we note the limitations of the study and make suggestions for further research in this domain.

Offshoring and Transaction Cost Theory

Outsourcing, and the related concept of offshoring, can be understood by drawing on Transaction Cost Economic (TCE) theory (Williamson, 1985). Transaction costs represent the costs of collecting information and the costs of creating, enforcing and monitoring contracts (Williamson, 1985). Mathew (1986, p.906) makes the following

distinction between transaction and production costs, “*transaction costs.. consist of the costs of arranging a contract ex ante and monitoring and enforcing it ex post, as opposed to production costs, which are the costs of executing the contract. To a large extent transaction costs are costs of relations between people and people, and production costs are costs of relations between people and things*”. The nature of transaction costs therefore is not so much driven by the efficiency of production processes but more by ability to draw up detailed contracts with suppliers and ensure that the goods/services contracted for are delivered on time and meet the expectations. It is this human element of getting this done externally which introduces uncertainty and risk for the enterprise. Whether the decision to source goods from the external market will thereby add to the market value of the firm will depend on net benefits from externalising a set of transactions which were earlier managed internally. As observed by Mathew (1986, p.906), the purpose of managerial decisions is, “*not to minimise transaction costs as such, but to minimise the sum of transaction costs and production costs. There may be tradeoffs between the two*”.

Outsourcing has been undertaken for many years, particularly in the manufacturing sector, by a wide range of organisations and is widely studied in the academic literature (e.g. Bardhan et al, 2006; Bin et al, 2007; Willcocks and Feeny, 2006). Offshoring, a term which has only been in common usage since around 2000, refers to the particular case of outsourcing in which the specialised activities or production is undertaken in a country distinct from that in which the originating organisation or principal is located. Whilst the term may cover the manufacture of goods in overseas countries, it has become particularly associated with the overseas provision of services in lower cost countries enabled by ICT (Farrell, 2005). Economic logic will therefore suggest that the decision by a business to undertake offshoring is driven by desire to increase the value of the business.

Extant studies suggest that offshoring offers organisations similar potential benefits to those offered by outsourcing. These include; the flexibility to configure activities and services as required; access to specialised skills, for example in IT programming, and reduction in costs. Offshoring also appears to offer additional benefits compared to domestic outsourcing. Given offshoring has been focused on countries where wage and operating costs are significantly lower than in the originating countries, there is potential for considerable cost savings. Rottman and Lacity (2006) also note that offshoring allows work to be carried out twenty-four hours per day due to time-zone differences, compressing development times, whilst Farrell (2005) links offshoring to the ability to increase revenues, for example, by opening market segments that were previously too costly to serve.

Whilst offshoring offers organisations potential benefits, it is also associated with certain challenges and risks. Ngwenyama and Sullivan (2007) provide a very full and detailed analysis of risks associated with outsourcing whilst Faisal et al (2007) discuss the risks associated specifically with ICT outsourcing. Whilst many of the risks associated with offshoring will be similar to those associated with domestic outsourcing, other challenges are unique to offshoring, for example, the need to manage across different time-zones and national cultures. In particular, Rottman and Lacity (2006) describe how offshoring may provide access to staff with technical capabilities but these staff may lack context or domain knowledge.

Event Studies and their Application in the ICT and Outsourcing Domains

Since offshoring is a relatively recent phenomenon there is little research that has examined its impact on the valuation of firms. Drawing on earlier studies of the impact of outsourcing and investments in information technology on the market valuation of firms, we propose a number of hypotheses to investigate the valuation impact of offshoring decisions. It may be argued that the actual impact of an offshoring arrangement will be known in future and therefore, any financial impact can be determined in the long term. However, firms and their shareholders will not wish to wait for the long term to determine value. An *ex ante* evaluation of offshoring decisions can be examined using the event study method. This method draws on the well accepted Efficient Market Hypothesis (EMH) (Fama, 1976), which posits that the current price of a share captures all the relevant information about the expected cashflows from a business and that any new information that may potentially influence future cashflows is reflected in the price instantaneously. According to the EMH, any piece of value relevant information will result in share price changes. It is recognised that share prices fluctuate both over the short and long term due to a host of endogenous and exogenous variables. However, the event study method identifies statistically significant movements, that are distinct from these constant fluctuations, and that can be linked to an identified event, thereby allowing causality to be established between the statistically significant share price movement and the event being studied (Armitage, 1995).

Whilst event studies are well established in the fields of finance and accounting, their application to other domains, including ICT, is growing. Dos Santos et al (1993) are credited with undertaking the first event study based examination in the ICT domain, which a number of subsequent studies have since extended. Their study examined the market reaction to announcements of IT investments by 97 firms in the US and importantly for most subsequent studies, set the expectation that detecting significant abnormal returns in this domain is very difficult. For their total sample, and sub-samples of finance and manufacturing companies they found no significant excess returns, which they summarise as '*on average, IT investments are zero net present value (NPV) investments; they are worth as much as they cost*'. However, categorising their sample as either innovative or non-innovative investments, they did find that, on average, innovative investments were associated with significant positive returns. Dehning et al (2003) undertakes a form of meta-analysis of previous event studies in the IS domain when they combine and reanalyse the studies of Chatterjee et al (2002) and Dos Santos et al (1993) and a third study by Im et al (2001). They find that IT investments made to transform the business processes and relationships of the investing firm, as opposed to investments that seek to automate or informate existing processes or activities, are associated with positive abnormal (excess) returns, whilst the latter two types of investment are not. This finding may be related to Loukis et al's (2008) finding that more innovative or transformative ICT applications are linked to firms pursuing a strategy based on new products and services, and hence investors are rewarding this overall innovation.

Event studies have also been undertaken on announcements of particular types of ICT investments and related events. For example: Hayes et al (2001) consider market reaction to ERP investments, Chatterjee et al (2001) consider reactions to CIO

position announcements, Cavusoglu et al (2004) and Subramani and Walden (2001) and Dehning et al (2004) examine e-commerce announcements.

A number of previous event studies have been undertaken to explore reactions to ICT outsourcing (Loh and Venkatraman, 1992; Peak and Windsor, 2002; Farag and Krishan, 2003). Hayes et al (2000) explore the impact of outsourcing announcements by US firms between 1990 and 1997. They find that on average firm value was positively affected by such announcements with smaller firms and service-based firms more positively affected than larger firms and non-service firms. Gellrich and Gewald (2005) use an event study approach to examine the particular case of outsourcing announcements by global financial service organisations. They associate outsourcing with increased risk and seek to explore how investors react to this increased risk. Whilst they find non-significant returns in most of the event windows studied, they do find via regression analysis that firms undertaking outsourcing are rewarded for larger deals, arranging multi-provider agreements and agreements with experienced service providers, whilst they are punished for longer deals.

Oh et al (2006) undertake a US based event study to explore investors' reactions to the transactional risks associated with outsourcing arrangements. Whilst there was a positive reaction when averaged over all events studied, there was a roughly even distribution of positive and negative abnormal returns across the individual events, suggesting '*investors react not to the mere fact of an IT outsourcing announcement per se, rather they react to the specific details contained in the announcement*' (Oh et al, 2006). By means of regression analysis, the authors find investors do not welcome or reward: arrangements that are difficult to monitor; the outsourcing of highly asset specific IT and outsourcing to smaller service providers. Interestingly they also find that investors do not reward larger deals, which is in contradiction to the findings of Gellrich and Gewald (2005). The difference in findings may well lie in the nature of the firms included in the respective samples.

Whilst the previous studies of investor reactions to outsourcing announcements are highly informative for our study of reactions to offshoring, the results must be treated with care. Firms undertaking offshoring are expected to face additional challenges and risks compared to those undertaking domestic outsourcing, hence shareholder reactions may be expected to be different. Offshoring announcements should therefore be studied as a distinct class of event, as we seek to do in this study.

Hypotheses Formulation

As discussed above, the EMH posits that significant abnormal changes to a share price will occur when there is a consensual estimate by a large number of investors in the capital markets that an initiative by a firm is significant enough to impact its future cash flows. Given the intention of offshoring arrangements is to either improve the operations of the firm, or lower its cost base, both of which can be explained by reference to TCE theory, then it would be expected that such arrangements, if judged to be of significance, will significantly impact the future cash flows and hence value of the firm, and should therefore give rise to a significant abnormal share price movement. A significant positive abnormal return implies that the investors have reacted favourably to the announcement and believe the offshoring initiative will

create value for the firms in the future. Conversely a significant negative abnormal return suggests a consensual belief that the initiative will destroy value due to the increased risk and complexity involved (Ngwenyama and Sullivan, 2007; Faisal et al, 2007). This gives rise to our first two hypotheses:

H₁: Investors will recognise that offshoring, if judged to be of significance, will impact the future cash flows of the firm and will give rise to share price movements (measured as significant abnormal returns) at the time of the announcement.

H₂: If offshoring is perceived by shareholders as providing net benefits that outweigh the additional risks involved, then any significant abnormal share price movements will be positive. If offshoring is perceived to offer net disbenefit, then significant abnormal movements will be negative.

We also seek to explore how particular characteristics of the firm or the offshoring arrangement influence investor reaction. Drawing on previous event studies, Im et al (2001) find that the size of abnormal share price movements or returns is inversely related to firm size. In their study of outsourcing in the financial services sector, Gellrich and Gewald (2005) find that investor reaction is positively related to contract size. These studies give rise to the following hypotheses:

H₃: The size of abnormal share price movements will be inversely related to firm size.

H₄: Abnormal share price movements will be positively related to contract size, measured as the number of jobs lost or transferred.

Huang et al (2007) describe how customer service functions and particularly, call centres, are being viewed as commodity processes that can be outsourced or offshored. However these authors find that such outsourcing can lead to value creating opportunities being missed. Also, reports (e.g. Moules, 2004a; Hiscott, 2006) suggest there is an unfavourable customer reaction to the offshoring of such activities. This suggests that investors will react negatively to announcements of the offshoring of customer facing activities, leading to our hypothesis H₅. Also, whilst offshoring is often seen as a means of addressing poor performance in an organisation, such as a means of reducing costs, it is also associated with increased risk of operations (Rottman and Lacity, 2006; Farrell, 2005) and hence greater transaction costs. Therefore we suggest that only organisations that are seen to be able to manage their operations well already will be rewarded for offshoring. Finally the US appears to have witnessed an apparent greater reaction against offshoring than the UK (e.g. Business Standard, 2004; Economic Times, 2004; Moules, 2004b). The above give rise to our final hypotheses.

H₅: Abnormal share price movements will be negative for the offshoring of customer facing activities.

H₆: Abnormal share price movements will be positively related to previous firm performance.

H₇: Abnormal share price movements are more likely to be negative in the US than in the UK.

Research Methodology

Data Collection

For the purposes of this study an event is defined as the first public announcement of an intention to engage in offshoring by an organisation. A comprehensive search of the Lexis Nexis electronic database was undertaken in order to identify all such events using the keywords *offshoring* and *overseas outsourcing*. As described earlier, the focus of this study is ICT-enabled transfer of activities to lower cost countries, and hence only offshoring activities consistent with this were included. Activities such as overseas manufacturing were therefore excluded, whilst the transfer of back office processing, the operation of call centres and IT support and development were included. The focus of the study also limited the period of data collection to after 1st January 2000 since no announcements of such ICT-enabled transfers were found prior to that date. The period included in the study was 1st January 2000 to 1st July 2005.

The above approach to data collection yielded 94 distinct events. Of these 46 were eliminated as they were not traded on either the London Stock Exchange or on the New York Stock Exchange or the exact date of the first announcement could not be confirmed. For the remaining 48 events, consistent with the approach of Oh et al (2006), an additional Lexis Nexis and registered company information search was undertaken in order to determine if any confounding events occurred in the time window from the day before the offshoring event to the day following the event. No such confounding events were identified.

These 48 events therefore form the data set for the study. Whilst this is a relatively small data set, it does reflect a relatively short time period of 5.5 years. It is also consistent with similar studies, for example, Dos Santos et al (1993) identify 97 cases over an eight year period and Oh et al (2006) include 87 cases in their analysis of a nine year period.

Additional data was found for each event in the data set by reviewing press releases, company documents and electronic financial databases (Hemscott). This included; the size of the offshoring arrangement (measured in number of jobs transferred or lost), the nature of the activities offshored and the market capitalisation on the date of the announcement. Data necessary to undertake the calculation of the cumulative abnormal returns, detailed below, was also collected from the Hemscott database.

Data Analysis

Calculating Statistically Significant Cumulative Abnormal Returns

Consistent with other event studies in the ICT domain, the Ordinary Least Squares linear Market Model Returns (OLSMAR) method was used to calculate cumulative abnormal returns (Dos Santos et al, 1993). The process involves first estimating the expected (normal) return on each share by regressing returns on a given share against

the returns on a portfolio of securities. For companies listed on the London Stock Exchange, the FTSE-All share index was used and the Dow Jones composite was used for shares traded on the NY stock exchange. OLSMAR draws from Capital Asset Pricing Model (Sharpe, 1964) which is a normative model and suggests that expected return on a share should be equal to risk free return plus share specific risk premium. Risk in this case is defined as sensitivity of returns on a share to the sensitivity of market returns usually called *beta* estimate.

The expected returns under OLSMAR are thus risk adjusted returns that a share should earn normally. If on a given day the actual returns are more or less than the 'normal' returns that difference is called 'abnormal return'. Efficient market theory proposed by (Fama, 1976) implies in informationally efficient markets the abnormal returns should be zero. Hence existence of abnormal returns could be used as evidence of the impact of a given event.

The OLSMAR method was used, as opposed to other event study approaches to calculating the expected or normal return, since this is the most sophisticated approach, being based on the Capital Asset Pricing Model (CAPM) and hence accounting for the differential or systematic risk displayed by the shares of different organisations (Armitage, 1995; Brown and Warner, 1980).

Once the abnormal return is calculated it has to be tested statistically whether it is significantly different from zero. We do this by considering the cumulative returns earned on the announcement day (Day 0) and also over three day windows to capture the possibility of anticipation or lag in the market response to event. Specifically the methods used for event analysis are explained below. The market model is defined as follows

$$R_{j,t} = \alpha_j + \beta_j R_{m,t} + \epsilon_{j,t} \quad (1)$$

Where $R_{m,t}$ is the rate of return on the market portfolio on day t ; $R_{j,t}$ is the expected rate of return for security j on day t ; α_j and β_j are the intercept and slope parameters for return on security j respectively; and $\epsilon_{j,t}$ is the error term.

The market terms (α_j and β_j) for each company (j) were estimated from an ordinary least squares regression using appropriate market indices for a 200-day period, termed the estimation period. If the event date is day 0, then this period was taken as day –230 to day –30. An abnormal return for each event for each company ($A_{j,t}$) was then calculated for each day in a window around the announcement, by subtracting the expected returns based on the market from actual return observed for that day ($R_{j,t}$):

$$A_{j,t} = R_{j,t} - (\alpha_j + \beta_j R_{m,t}) \quad (2)$$

Four windows around the event date, shown in Table 1, were explored and a cumulative abnormal percentage return (CAR) for each window was calculated by summing the abnormal return calculated in (2) over the relevant number of days in the event window.

$$CAR_{t1,t2} = \sum A_{j,t} \times 100 \quad (3)$$

A single cumulative abnormal return (SCAR) for the whole sample was also calculated for each event window by averaging the CAR_{t1, t2} over all events.

The statistical significance of the cumulative abnormal returns for each event was tested, with the null hypothesis that these returns were zero. The test statistic for the significance of cumulative abnormal returns is obtained following Strong (1992).

Regression Analysis

A simultaneous multiple regression analysis (Pallant, 2001) was also undertaken as shown in (4). The dependent variable was CAR for each event and the independent variables corresponded to the hypotheses H₃ - H₆ set out above.

$$CAR_j = a_1 FirmSize + a_2 ContractSize + a_3 ActivityOffshored + a_4 Performance + e \quad (4)$$

Consistent with earlier studies (Oh et al, 2006), the CAR for the Day 0 event window was used for the regression analysis. *FirmSize* is the log-transformed market capitalisation of the firm on the day of the event. *ContractSize* is the log-transformed number of jobs either transferred overseas or reported lost. *ActivityOffshored* = 1 for the transfer of back office administration and IT development and *ActivityOffshored* = 0 for the transfer of customer facing activities. *Performance* is the average return on the share during the estimation period used in the study.

Before undertaking the regression, variables were checked for multicollinearity, normality and homoscedasticity. No major deviations from the assumptions underlying regression analysis were detected.

Study Findings

The SCAR calculated for the entire sample for each of the four event windows studied was not significant. However, a number of significant CARs were found for individual events over the four event windows studied as shown in Table 1. That the overall SCAR is not significant for each event window, but the CARs for some individual events are significant suggests that, consistent with prior studies, investors do not react to a mere announcement of offshoring, but react to which organisation is making the announcement and the specific details of that announcement. The findings of significant CARs across the event windows studied provides support for our first hypothesis (H₁), that, in specific cases, investors believe that offshoring will impact the future value of the firm.

Table 1: Incidence of Significant Cumulative Abnormal Returns (CARs)

Event Window(s)	No. of events with CAR significant at 5%	No. of events with CAR significant at 10%	Total no. of events with significant CAR	No. of positive significant CARs	No. of negative significant CARs	Mean of significant CARs	Std Dev of significant CARs
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Day 0	4	3	7	3	4	-0.605	1.926
Days -1 and 0	4	5	9	1	8	-0.774	1.427
Days 0 and +1	4	6	10	5	5	-0.504	1.790
Days - 1 to +1	5	5	10	2	8	-0.694	1.498
All event windows*	8	6	14	5	9	-	-

* count of events with significant CAR in any one of the four event windows listed above

Table 1 also shows the proportion of significant CARs that were positive and negative for each event window and the mean of those significant CARs. In certain windows (Day 0, Days 0 and +1), the proportion of positive and negative significant CARs were equal or close to being equal. However, in the other event windows (Days -1 to 0, Days -1 to +1 and All event windows), there were a greater proportion of events with negative CARs and the mean of significant CARs was negative for all event windows. These findings support our second hypothesis (H₂). That is, investors can discriminate between offshoring arrangements. Whilst they believe some will add value to the firm, overall for the events included in this study, there was a belief that they are more likely to reduce or destroy value.

The regression analysis described above was undertaken to determine how particular characteristics of offshoring arrangements relate to the perception of value added or destroyed as expressed in hypotheses H₃ – H₆. Table 2 shows descriptive statistics for the variables used in the regression analysis and Table 3 shows a correlation matrix for the variables included in the regression analysis. An examination of Table 3 shows that the dependent variable (*CAR Day 0*) is positively related to size of the organisation as measured by the market capitalisation on the day of the event ($p < 0.05$). It is also positively related to the size of the contract as measured by the number of jobs transferred or lost ($p < 0.05$). This suggests offshoring announcements by larger firms and announcements of larger deals are associated with larger abnormal returns.

Table 2: Descriptive Statistics for continuous variables included in regression analysis

	N	Minimum	Maximum	Mean	Std. Deviation
Cum AR Day 0	48	-11.83%	4.01%	-0.43%	2.64%
<i>FirmSize</i> (Market Cap on event date(£) in millions)	48	2.67	97784.94	5790.24	14963.65
<i>ContractSize</i> (Number of Jobs transferred)	45	21	13000	1709.29	2569.87
<i>Performance</i>	48	-0.33%	0.48%	0.04%	0.15%
Valid N (listwise)	45				

Table 3: Correlation Matrix

	<i>CAR Day0</i>	<i>FirmSize</i>	<i>ContractSize</i>	<i>Activity Offshored</i>	<i>Performance</i>
<i>CAR Day0</i>	1.000				
<i>FirmSize</i>	.292**	1.000			
<i>ContractSize</i>	0.294**	-0.061	1.000		
<i>ActivityOffshored</i>	.120	.065	.141	1.000	
<i>Performance</i>	.153	.222	.021	-.146	1.000

Note: ** p < 0.05 (based upon a 1-tailed test)

Four separate simultaneous regression analyses were carried out based on variations of the model shown in equation (4), as indicated in Table 4. Regression models using both US and UK events explained only 20% of the total variation in CAR. Whilst this value is relatively low, it is consistent with similar studies (Oh et al, 2006) and suggests that factors in addition to those considered here are required to explain variance in the CAR.

Partitioning the sample into US and UK sub-groups and carrying out regression on the UK events only, the R-square of the model improved significantly to 46%. Given this significant improvement in the R-squared, it would seem that different models are required to explain shareholder reactions in these two geographic locations. This suggests the market reactions in UK and US differ substantially.

Table 4: Regression Models and Coefficients

Dependent Variable is Cumulative Abnormal Return on Day 0 (for all models)

Model		Unstandardized Coefficients		Standardized Coefficients
		B	Std. Error	Beta
1 (UK/US combined) R ² = 0.200 N = 47	(Constant)	-.050	.016	
	Contract size	.010	.004	.311**
	Firm size	.007	.003	.306**
	Performance	1.287	1.946	.095
2 (UK/US combined) R ² = 0.213 N = 47	(Constant)	-.043	.019	
	Contract size	.009	.004	.292**
	Firm size	.006	.003	.285*
	Performance	1.587	1.989	.117
	Activity offshored	-.006	-.007	-.120
3 (UK only sample) R ² = 0.450 N = 32	(Constant)	-.067	.018	
	Contract size	.010	.005	.302**
	Firm size	.013	.004	.523**

	Performance	3.272	2.105	.226
4 (UK only sample)	(Constant)	-.060	.021	
R ² = 0.462	Contract size	.009	.005	.269*
N = 32	Firm size	.013	.004	.506**
	Performance	3.578	2.156	.248
	Activity offshored	-.005	-.007	-.116

** Significant at 5%. * Significant at 10%.

It can be seen that for all models, there is a positive and significant relationship between size of the organisation and CAR. This is in contrast to our hypothesis H₃ that proposed an inverse relationship between CAR and firm size. This leads us to suggest the revised hypothesis, which is supported by the findings of the study; H_{3R}: Offshoring announcements by larger firms will result in greater abnormal returns than announcements by smaller firms.

A positive and statistically significant relationship between the size of the offshoring arrangement was also found in all of the four models. Therefore we find support for our proposition H₄ that larger the contract sizes are associated with higher abnormal returns. The relationship between the activity offshored and the abnormal returns was not statistically significant, hence we cannot support our proposition H₅. However, the negative sign of the coefficient is interesting. It suggests contrary to popular reports about the unpopularity of overseas call centres, investors are more likely to react negatively to the offshoring of back office activities than to customer facing activities. Further studies will be required to confirm this. Although a positive relationship is found between the performance of the organisation before offshoring, measured as the average stock market returns during the period preceding the announcement, this is not statistically significant for any of the four models and again we cannot therefore find support our proposition H₆.

Our proposition H₇ was tested by comparing the frequency of positive and negative abnormal returns identified for firms in the UK, and traded on the UK market, with those for US firms traded in the US. Table 5 shows that proportion of US abnormal returns that were negative (67%) was greater than the proportion of UK abnormal returns that were negative (52%). This provides support for our hypothesis H₇: abnormal returns are more likely to be negative in the US than in the UK.

Table 5: Frequencies of +ve and -ve CARs in UK and US

CAR Day	UK		US		Total
	Number	%	Number	%	
Positive	16	48	5	33	21
Negative	17	52	10	67	27
Total	33	100	15	100	48

Discussion and Conclusions

The process of undertaking the study resulted in an emergent finding. Whilst practitioner and academic literature has been discussing the significant growth in offshoring since 2000, and there is much coverage of the topic in general, it proved very difficult to identify specific cases of offshoring. Although our sample represented the whole, or at least the majority of the population, it was therefore constrained by the size of the population of interest. This empirical observation is consistent with the overall finding of this study. It would appear managers are aware, or believe, that announcements of offshoring may not be favourably received by their investors and are therefore reluctant to make unheralded announcements of such arrangements.

A total of 14 events were associated with significant CARs (see Table 1), providing support for our first hypothesis, H_1 . It would therefore seem that, if an offshoring announcement is seen as significant, it will give rise to significant abnormal share price movements at the time of the announcement. However, it should also be noted that the majority of events included in the study were not associated with significant returns (34). There could be a number of reasons for this. These include; announcements regarding offshoring may be seen as of little consequence and significance compared to other events and activities undertaken by the organisation. Alternatively, information about the offshoring arrangement may have leaked out to investors prior to the announcement date. Finally, as asserted by Dehning et al (2003), investors may not be willing to reward organisations for undertaking activities that can be easily imitated by others. Further research would be required to distinguish between these causes.

Table 1 suggests that where an offshoring announcement results in a significant cumulative abnormal return, on average this return will be negative. Drawing from our second hypothesis, H_2 , this suggests that investors believe that, when judged as significant, offshoring is more likely to yield a net disbenefit to the organisation. Interestingly, in their study of outsourcing, Oh et al (2006) find similar sized mean CARs, however these are positive in value. In contrast Gellrich and Gewald (2005), who link outsourcing in the financial services sector with increased risk, find negative CARs. Our finding of negative abnormal returns suggest that investors view offshoring as distinct from outsourcing. Drawing from the TCE theoretical basis underpinning this study, this would suggest that investors consider that whilst offshoring may be expected to yield lower production or purchase costs, these will be offset by higher transaction costs that reflect the greater complexity and risks involved.

The correlation matrix (Table 3) and regression analysis (Table 4) are used to explore our hypotheses $H_3 - H_6$. These tables show a significant positive relationship between CAR and firm size (H_3). This positive relationship is in contrast to the negative relationship between these variables found by Im et al (2001). These authors, who examine the effect of IT investment announcements on share price, speculate that the inverse relationship between CAR and firm size is due to '*smaller firm's announcements might contain more incremental information (i.e. low predisclosure of information)*'. This 'low predisclosure' effect for smaller firms is not witnessed. Rather, larger organisations announcing offshoring provoke a greater reaction. This

would suggest investors expect larger firms to benefit more from offshoring than smaller firms, which may be due to the fact that they believe smaller firms will not be able to address the risks associated with offshoring or larger firms will reap greater cost savings.

Table 4 also shows a positive relationship between contract size, measured here as the number of jobs either transferred overseas or lost, and CAR (H_4). Press coverage of offshoring events often focuses on the number of jobs in the originating organisation that will be affected, hence the inclusion of this variable. It would appear that investors are not influenced by such coverage, and reward larger offshoring arrangements with greater abnormal returns. No relationship was found between the type of activity supported and previous firm performance and share price movements, hence no support was found for our hypotheses H_5 and H_6 . Finally, in support of our hypothesis H_7 , the findings suggest that there is a differential reaction to offshoring between the UK and US, with US investors reacting less favourably than UK investors.

There are a number of implications of this work for practising managers. Firstly, they should be aware that, whilst there may be a strong rationale within the organisation to undertake offshoring, investors are unlikely to ascribe value to this activity and may well view it as reducing the value of the firm. If the offshoring arrangement being considered is a large-scale transfer by a very large organisation, then its announcement may be received positively by investors. However, if these criteria cannot be met, the managers are advised to share their plans relating to offshoring as they develop, rather than making an unheralded announcement.

Limitations of Current Study and Suggestions for Further Research

Offshoring is still a relatively nascent phenomenon. Whilst it was felt important to carry this research out whilst organisations were developing their plans in this domain, such that the findings could have practical application, it resulted in a relatively small data set. Consistent with the practice of extending and re-examining data sets for event study analysis (Im et al, 2001; Dehning et al, 2004), the data we have collected could be extended to include announcements of offshoring made after the period covered by this study.

Finally, the findings of this study and subsequent event studies in the area of offshoring could be used to complement other studies of this domain, to provide a more complete understanding. For example, Dutta and Roy (2005) use a systems dynamics approach to develop a model of the growth of offshoring. They explore various competing forces such as wage differentials and the quality of staff. However, the reaction of shareholders is an important omission from their model.

References

Armitage, S. (1995), "Event Study Methods and Evidence of their Performance", *Journal of Economic Surveys*, Vol. 9, p.25-52.

Bardhan, I; Whitaker, J and Mithas, S (2006), "Information Technology, Production Process Outsourcing, and Manufacturing Plant Performance", *Journal of Management Information Systems*, Vol 23, No 2, p.13-40.

Bin, J; Belohlav, J and Young, S (2007), "Outsourcing Impact on Manufacturing Firms' Value: Evidence from Japan", *Journal of Operations Management*, Vol 25, No 4, p.885-900.

Brown, S. and Warner, J. (1980), "Measuring Security Price Performance", *Journal of Financial Economics*, Vol 8, p.205-258.

Business Standard (2004), "60 Anti-BPO Laws in US", February 6th, p.1.

Cavusoglu, H; Mishra, B and Raghunathan, S (2004), "The Effect of Internet Security Breach Announcements on Market Value: Capital Market Reactions for Breached Firms and Internet Security Developers", *International Journal of Electronic Commerce*, Vol 9, No 1, p.69-104.

Chatterjee, D; Pacini, C and Sambamurthy, V (2002), "The Shareholder-Wealth and Trading-Volume Effects of Information-Technology Infrastructure Investments", *Journal of Management Information Systems*, Vol 19, No 2, p.7-42.

Chatterjee, D; Richardson, V and Zmund, R (2001), "Examining the Shareholder Wealth Effects of New CIO Position Announcements", *MIS Quarterly*, Vol 25, No 1, p.43-70.

Dehning, B., Richardson, V. and Zmud, R. (2003), "The Value Relevance of Announcements of Transformational Information Technology Investments", *MIS Quarterly*, Vol 27, No 4, p.637-656.

Dehning, B; Richardson, V; Urbaczewski, A and Wells J, (2004), "Reexamining the Value Relevance of E-Commerce Initiatives", *Journal of Management Information Systems*, Vol 21, No 1, p.55-82.

Dos Santos, B; Peffers, K and Mauer, D (1993), "The Impact of Information Technology Investment Announcements", *Information Systems Research*, Vol 4, No 1, p.1-23.

Dutta, A and Roy, R (2005), "Offshore Outsourcing: A Dynamic Causal Model of Counteracting Forces", *Journal of Management Information Systems*, Vol 22, No 2, p.15-35.

Economic Times (2004), "Moves on in US to Ban Financial Services Offshoring", February 17th, p.17

Faisal, M. N; Banwet, D. K. and Shankar, R (2007), "Information Risks Management in Supply Chains: An Assessment and Mitigation Framework", *Journal of Enterprise Information Management*, Vol 20, No 6, p.677-699.

Fama, E (1976) *Foundations of Finance*, New York, Basic Books.

- Farag, N and Krishnan, M (2003), "The Market Value of IT Outsourcing Investment Announcements: An Event Study Analysis", *Proceedings of the Ninth Americas Conference on Information Systems*, Atlanta, p.1623-1629.
- Farrell, D. (2005), "Offshoring: Value Creation through Economic Change", *Journal of Management Studies*, Vol 42, No 3, p.675-683.
- Gellrich, T and Gewald, H (2005), "Sourcing, Risk and the Financial Market", European Conference of Information Systems, Regensburg, Germany.
- Hayes, D; Hunton, J and Reck, J (2000), "Information Systems Outsourcing Announcements: Investigating the Impact on the Market Value of Contract-Granting Firms", *Journal of Information Systems*, Vol 14, No 2, p.109-125.
- Hayes, D; Hunton, J and Reck, J (2001), "Market Reactions to ERP Implementation Announcements", *Journal of Information Systems*, Vol 15, No 1, p.3-18.
- Hiscott, G (2006), "Irritating Call Centres Face Axe", *Daily Express*, June 16th, p.1.
- Huang, J; Newell, S; Poulson, B and Galliers, R. D (2007), "Creating Value from a Commodity Process: A Case Study of a Call Centre", *Journal of Enterprise Information Management*, Vol 20, No 4, p.396-413.
- Im, K; Dow, K and Grover, V (2001), "A Reexamination of IT Investment and the Market Value of the Firm – An Event Study Methodology", *Information Systems Research*, Vol 12, No 1, p.102-117.
- Levy, D (2005), "Offshoring in the New Global Political Economy", *Journal of Management Studies*, Vol 42, No 3, p.685-693.
- Loh, L and Venkatramann, N (1992), "Stock Market Reaction to IT Outsourcing: An Event Study" Working Paper, Sloan School of Management, MIT, US.
- Loukis, E; Sapounas, I and Aivalis, K (2008), "The Effect of Generalized Competition and Strategy on the Business Value of Information and Communication Technologies", *Journal of Enterprise Information Management*, Vol 21, No 1, p.24-38.
- Moules, J (2004a), "Doubt in Offshore Call Centre Quality", *Financial Times*, May 25th, p.5.
- Moules, J (2004b), "Hewitt Rejects Laws to keep jobs in UK", *Financial Times*, February 3rd, p.4.
- Ngwenyama, O and Sullivan, W. E (2007), "Outsourcing Contracts as Instruments of Risk Management", *Journal of Enterprise Information Management*, Vol 20, No 6, p.615-640.
- Oh, W.; Gallivan, M. and Kim, J. (2006), "The Market's Perception of the

- Transactional Risks of Information Technology Outsourcing Announcements”, *Journal of Management Information Systems*, Vol 22, No 4, p.271-303.
- Pallant, J (2001), “SPSS Survival Manual”, Open University Press, Berkshire, UK
- Peak, D; Windsor, J and Conover, J (2002), “Risks and Effects of IS/IT Outsourcing: A Securities Market Assessment”, *Journal of Information Technology Cases and Applications*, Vol 4, No 1, p.6-33.
- Rottman, J. and Lacity, M. (2006), “Proven Practices for Effectively Offshoring IT Work”, *MIT Sloan Management Review*, Vol 47, No 3, p.56-63.
- Sharpe, William F. (1964). Capital asset prices: A theory of market equilibrium under conditions of risk, *Journal of Finance*, Vol 19, No 3, p.425-442.
- Strong, N (1992) “Modelling Abnormal Returns: A Review Article”, *Journal of Business Finance and Accounting*, Vol 19, No 4, p.533-553.
- Subramani, M and Walden, E (2001), “The Impact of E-Commerce Announcements on the Market Value of Firms”, *Information Systems Research*, Vol 12, No 2, p.135-154.
- Venkatraman, N.V. (2004), “Offshoring without Guilt”, *MIT Sloan Management Review*, Vol. 45, No. 3, p.14-19.
- Willcocks, L. and Feeny, D. (2006), “IT Outsourcing and Core IS Capabilities: Challenges and Lessons at Dupont”, *Information Systems Management*, Winter, p.49-56.
- Williamson, O (1985), *The Economic Institutions of Capitalism: Firms, Markets and Relational Contracting*, New York, The Free Press.