

December 2003

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## Recommended Citation

Khan, Naureen; Currie, Wendy; and Guah, Mathew, "Developing a Model for Offshore Outsourcing" (2003). *AMCIS 2003 Proceedings*. 123.  
<http://aisel.aisnet.org/amcis2003/123>

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# DEVELOPING A MODEL FOR OFFSHORE OUTSOURCING

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## Abstract

*This paper reports on empirical research on the strategic positioning of the offshore outsourcing industry with respect to the management of IT services. It attempts to analyse and identify eight essential factors of the present offshore outsourcing model and they are-Contract, Infrastructure, Quality, IPR/confidentiality, Culture, Trade policy, Project management, and Expertise. Using a case study method, each factor has been selected in order to propose enhancements to the model by developing a matrix that elaborates the criteria for selecting an offshore outsourcing vendor.*

**Keywords:** Offshore outsourcing model, IT transfer, contract, culture trade policy, infrastructure, quality, project management

## Introduction

Technology today has become a strategic enabler and is no longer relegated to the task of automating processes and functions. In response, outsourcing has emerged as a viable option for overcoming the problems of keeping pace with the technological advances. Outsourcing consists of conducting one or more organizational activities, using external agents (Lacity and Hirschheim 1993). It can assist in the need organisations have to reinvent themselves in response to changing markets. Up until the early 1980's, companies built their own systems. This involved writing, assembling and maintaining the applications in house (Currie & Seltsikas, 2000). With growth in outsourcing, software development was no longer being conducted in house. Instead, cost effective packaged applications were purchased this carried fewer risks.

Offshore outsourcing gained interest during this decade and has continued to evolve with regard to its adoption and acceptance globally. With the development of the Internet, evolved e-business "the use of the Internet and other digital technology for organisational communication and coordination and the management of the firm" from which this wave of outsourcing has arisen (Laudon & Laudon 2001). The development of the Internet facilitated the evolution and growth of e-business. While there are many definitions of offshore outsourcing, Rajkumar and Mani (2001) describe it as

*"An activity where the supplier of software development is from another country than the firm that decides to outsource Information Systems" (p 64).*

In simple terms, offshore outsourcing is an activity where client firms outsource IT activities to external service providers in other countries. These exclude the global internal subsidiaries of these client firms. While global recession may be responsible for large cuts in the IT budgets of these firms, offshore outsourcing promises to reduce their IT budgets by a large margin, which is considered a major drivers for the acceptance of the model (Ravichandran and Ahmed 1993).

Two other key drivers for this model found in existing literatures, are market entry advantage due to reduced time cycle and access to highly skilled professionals (Apte et al., 1997; Rajkumar and Dawley 1997; Sobol and Apte, 1997).

However, the offshore model has certain degree of risks: Infrastructure problems, cultural barriers, language barriers (verbal and data communications) and differences in laws and regulations. Several researchers like Ravichandran and Ahmed (1993), Loh and Venkatraman (1992), Apte et al., (1997) and Kumar and Willcocks (1996) have enhanced the benefits of this model through their work.

Yet, very little emphasis has been given to identifying the underlying risks of the model and possible ways of overcoming such risks. In this paper, the authors argue that, adopting the offshore model can prove to be a beneficial strategy for firms seeking outsourcing solutions. Yet, they emphasise that the underlying essentials that must be are considered before entering into agreement with the offshore vendor.

Offshore outsourcing has attracted much attention in trade literature and thus far little attention in academic literature. The research described here aims to understand the experiences of industries involved with this model. The aim of this paper is to present some preliminary results of offshore companies who are also working as collaborators for an ongoing EPSRC<sup>1</sup> research project. In particular, it examines the strategies adopted by IT vendors to compete in the offshore outsourcing marketplace.

## The Development of Offshore Outsourcing

During early 80's till early 90's outsourcing was often considered as a panacea for the problems of 80's recessionary climate, rising costs, poor performance and lack of skilled professionals (Currie and Willcocks 1997). The concept outsourcing became very attractive to organizations facing financial difficulties.

The most salient message- 'Cost reduction through outsourcing' particularly attracted the senior executives of many organizations. Even today, researchers like Lacity and Hirschheim (1993), Currie and Willcocks (1997), views the primary reason for outsourcing trend as cost efficiency. Although, companies outsource IS for many reasons, industry researchers, like Gartner, Aberdeen and IDC generally attribute the growth of the IS outsourcing market to two primary phenomenon. First, interest in IS outsourcing is largely a consequence of a shift in business strategy, i.e. to focus on the core competencies while outsourcing the one they lack expertise. Second, the growth in outsourcing is a function of the unclear value delivered by IS (Lacity and Hirschheim 1995).

Firms entering into offshore outsourcing aim primarily to gain access to highly skilled professionals and reduced software development times with significant cost savings (Apte *et al.*, 1997). Sobol and Apte (1997) for instance made a contribution by examining 'domestic' versus 'global' outsourcing, which covers US firms outsourcing to non-US vendors. Rajkumar and Dawley (1997) provide a further detailed overview study of risks, benefits and conditions under which offshore software development in India is practicable for US firms. Similarly Kumar and Willcocks (1996) analysed longitudinally (1993-96) a case of outsourcing by Holiday Inn, Atlanta to an Indian supplier. While other studies have also encouraged more research on this topic (Lacity and Willcocks, 1997), the lack of published literature indicates that few researchers have attempted to conduct studies on offshore outsourcing ventures outside the US.

One reason as to why the US tends to dominate the published literature on offshore outsourcing is explained in market research findings. According to IDC (cited at Nasscom, 2002), the American market remained the leader in IT services spending in the year 2000 followed by Western Europe, Japan, Latin America and Asia pacific.

It is reported that firms spend an average of 12 per cent of their IT budget on offshore outsourcing, and this is predicted to grow to over 28 percent by 2004 (Forrester Research, as in Nasscom, 2002). The same study also shows that almost two out of five Fortune 500 firms currently outsource some software requirements to India to gain advantages of the high quality IT workforce and low cost base. Other countries that are well known for offshore outsourcing are Ireland, Vietnam, Taiwan, Russia, Israel, China and Philippines (Steen 1998; Amoribieta *et al.*, 2001).

Industry analysts predict that the USA will spend \$17 billion by 2005 in offshore outsourcing market (IDC, 2002 cited at Nasscom, 2002). At present it is mainly dominated by the Indian offshore market (Nasscom, 2002). However, research has also

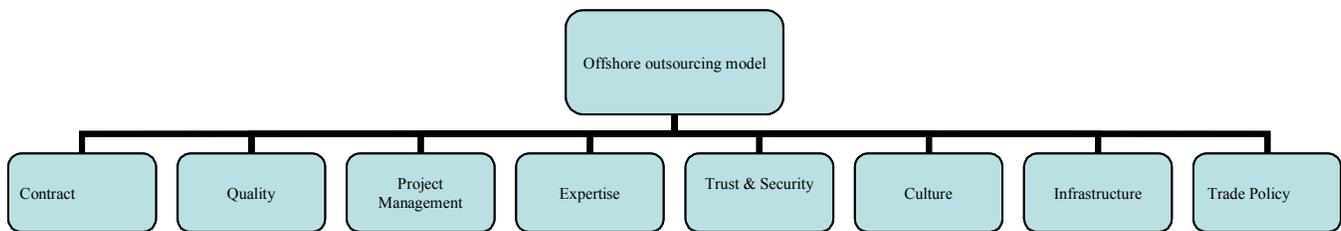
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<sup>1</sup>Research funding has been obtained from the engineering and physical sciences research council (EPSRC) for a study on "Assessing the benefits and risks of business critical information systems using ASP."

shown that the market in the UK and Europe is still young. Yet the extraordinary growth in the global market has resulted in the birth of a number of vendors with a wide disparity of quality and ethical conduct.

Potential customers in UK and Europe are still hesitant in utilising offshore outsourcing models due to the uncertainties associated with the rapid change. This research aims to educate potential offshore users and vendors on possible opportunities attainable with the offshore model.

The offshore model requires a change in culture, with regards to the way IT solutions are developed. This is very different to the traditional outsourcing model of a software application which is based on the user and developers located in the same region, here the development process can be easily supervised and errors can be rectified in due course. With offshore outsourcing, the development of the software has to be thoroughly invigilated and there is a huge communication gap due to the distance between the client and the vendor. Moreover, the difference in language and culture adds further complications. Figure 1 illustrates how an offshore outsourcing takes the traditionally separate aspects of an organisations software implementation. We argue that these factors need serious consideration before organization undertakes this model.



**Figure 1. The Offshore Outsourcing Fundamentals**

Based on the work of Ravichandran and Ahmad (1994); & Rajkumar and Dawley (1997), the diagram (figure 1) represents some of the collaborators in the proposed offshore outsourcing model. The figure diagrammatically represents the offshore outsourcing model and its essentials that are required to comply with this model.

## Aims and Objectives

Most literature reveals that much attention has been focused upon describing and understanding how an offshore outsourcing can help organisations manage IT. Research conducted to date has been based upon theoretical assumptions and forecasts and lacks any empirical evidence based upon *real* case examples to support such claims. An earlier paper reports substantial evidence for the reality of the offshore outsourcing in India, notably, the benefits and risks to both the supplier and customer (Khan *et al.*, 2003). However, this research aims to acquire empirical evidence using case examples to derive conclusions on how organisations can practically manage IT using this outsourcing model. Thus will evaluate the essentials of offshore outsourcing model with empirical case studies with customer and vendors.

## Research Method

The principal research method used to investigate the case studies was interview. Fieldwork was carried out in February 2002 in fifteen Indian firms, based in Mumbai & Pune, India. All the firms were selected from the technology sector, which is one of India’s fasted growing areas. Three UK Collaborators of the EPSRC project involve in offshore outsourcing model are also being selected for the case studies. One firm among the three UK customers was an e-learning company, which was directly outsourcing to India. This company was multi-sourcing to two firms, by using Body Shopping, in which they hired professionals from their vendor firms to work on their projects in the UK, and in their overseas office based in Mumbai, India. Another customer was a business process outsourcing and utility company who entered into a joint venture directly outsourcing to the Indian offshore firm. The third customer was a software development company that outsourced their work to India through a third party agent.

The primary aim of this research was a scoping study to identify the key issues relating to offshore IT outsourcing, notably, the benefits and risks to both the supplier and customer. The case studies can be described as ‘exploratory-descriptive’ rather than analytical (Yin, 1994). The research methodology was qualitative, using an open-ended, semi-structured questionnaire to conduct interviews with CEOs, CIOs and other managers-HR, marketing and accounting personnel (Yin, 1994 and Denzin, 1978). The model (figure 1) has been developed with positivist view, in attempt to examine and understand each factor.

While an important attribute of qualitative research is the ability to gain a detailed understanding of the opinions, ideas and experiences of firms, open-ended questions are considered to be effective in gaining ‘authentic’ feedback (Silverman, 2001). This shall be kept anonymous (as promised to the respondents) in order to prevent the disclosure of company confidential information. So far the research has been conducted in a total of seventeen firms with Indian vendors and their UK clients who were engaged in offshore outsourcing activities.

Among the seventeen firms, five are small companies with less than 500 employees; four are medium sized firms with 501- 1500 employees, and eight were typically large firms with over 1500 employees. To further enhance the research findings, a questionnaire survey is also being carried out, involving a total of 100 participants.

**Table 1. Company Details of the Vendors Interviewed for the Research**

<b>Solution Provider</b>	<b>Size (S=less than 500, M=501-1500, L=more than 1500)</b>	<b>Product/services portfolio</b>
A	Small	Client -Server Applications Development, Work-flow Application Development, E-commerce Application development
B	Small	Software development & maintenance in Mainframe, Client/Server, Internet/e-commerce
C	Small	IT Solutions, Computer Education & Training & IT Enabled Services, Customised Software Services, Claims Processing, Cheques Processing, Pre-press services & IT turnkey projects
D	Small	IPR-centric organization and a specialist in deploying mission-critical, Straight Through Processing technologies for the global financial services industry, that includes Equity, Derivatives, Commodity, Treasury and Depository operations.
E	Small	Software consultancy, Web applications, Data processing/conversion, HR placement/training
F	Medium	Customer Software Solution, e-business solution, Web Design & Development, Offshore Projects, Consulting, implementation & customisation
G	Medium	Software Design & Development, B2B e-commerce application development
H	Large	Offshore software development, Systems Integration, Education and Training (TULEC), Hardware Manufacture, Development and Marketing of products - hardware and software
I	Large	Banking, Manufacturing & Distribution, Financial Services, Customer Care, Insurance, Asset Management
J	Large	IT solutions for enterprise in areas such as retail, corporate and investment banking
K	Large	Web Technologies/Internet/Intranet, Telecom Solutions/Communications Software, Business Process consultancy/Re-engineering, Software Maintenance and Migration
L	Large	E-Commerce, Telecom & Datacom, ERP & Data Warehousing, Managed IT Support Services
M	Large	eBusiness consulting and IT services company. Delivers development and integration services to automotive/discrete manufacturing, financial services, healthcare/insurance, technology and telecommunications industry
N	Large	Application development and support, Legacy maintenance, Year 2000 and Euro Conversion, E-commerce and Internet technologies, Engineering services (CAD/CAMCAE)
O	Large	Financial services - banking, insurance, securities, Manufacturing industries and retail, Telecommunications, Transport and government

## Research Findings

The in-depth investigation of the offshore outsourcing literature and interviews conducted during case studies reveals that there are many benefits and risks of the stated fundamental of the offshore model. The main aim of the paper is to investigate how these factors are associated with this proposed model. Not surprisingly, these are mostly linked to the risks identified from the literature in the previous section. In this section the findings are analysed using the fundamental factors suggested by the authors earlier.

### Contact

In existing literature, there has been much advice on the economic of IT outsourcing (Gupta and Gupta, 1992; Willcocks *et al.*, 1995). A particular noticeable gap is the lack of attention given to the relationship between prior IT evaluation practice and ability to assess bids from offshore outsourcing vendors. Our research found that organizations experienced many difficulties in assessing properly the evaluation practices which results in hidden costs like underestimating the set-up costs including implementation, relocation and as well as management costs. While interviewing the CEO of one customer, this comment was noted:

*“The project was initially agreed on the basis of man month calculations and the money would be paid according to the hours the employees put in. When I went to the vendor’s site to check the progress of the project, I found that all the money was used but the progress of the project was lagging behind.”*

As a result, the duration of the project had to be increased, thus, increasing the cost of the project and nullifying the initial interest of the outsourcer (that was to reduce the cost of developing the project in-house). The authors suggest that the best way to deal with this problem is to negotiate a one off payment on the development of the project according to the customer’s requirements through a tough written agreement clause i.e. a Service Level Contract with measurement and monitoring systems. Also, we strongly suggest that large projects be broken down into definitive milestones and the progress of the project be monitored on the achievement of these milestones at the times mentioned in the project plan.

### Quality

According to Nasscom (2002), more than 200 Indian firms are quality accredited and from these around 36 firms have capability maturity model (CMM) level 5 and 19 firms have CMM level 4. These firms are serving the needs of over 255 fortune 500 firms (*ibid*). Moreover, India has firms with quality assurance certifications like SEI (Software Engineering Institute) and ISO (International Organization for Standardization) indicating the management competency in software development and product quality. Out of 87 high maturity organisations accessed outside the US, it was found that the highest number of maturity level 4 organisations exists in India. (SEI 2002.) However, finding the correct vendor with the relevant skills and quality can often be difficult. The head of one of the UK outsourcing customers (the e-learning firm) remarked:

*“To find the correct Indian supplier for the work we needed to outsource was very difficult - the web search revealed a large number of suppliers whose presence was sometimes only limited to virtual”.*

Threat of opportunism is significantly higher in the offshore outsourcing services model. This obstructs the continuous monitoring and invigilation of the project by the outsourcer. This can often be a problem to the outsourcer because, if he/she is not happy with the project that has been delivered, there is not much he/she can do. Therefore, to mitigate this risk, the authors suggest that the outsourcer should have a project manager from his firm to go and visit as often as possible or possibly supervise the progress of the project at the premises of the supplier. This way, the misunderstandings between the vendor and the customer can be reduced.

### Project Management

Managing project is to do with managing people and the managing its operation. In other words to reduce risks in outsourcing, both the vendor and the customer must be capable of managing the IT services first. The driving force behind the third company’s strategic decision to outsource was due to inadequate economies of scale like cost or quality problems. However, the major problem that most of the customers faced was lack of capable project managers who knows how to manage IT operations and also manage contracts and relationships with the offshore vendor. While interviewing, one of the CEO from the customer’s side remarked:

*“The initial problem with our vendor was when they choose to change the way it provides the service i.e. with a Java platform and modus operandi to impress us with their bite of work. We had to request again and again to develop the domain using our standard IT platform”.*

The authors suggest that in this type of problem, the customers should pull out at the first stage when they learn that their vendor is not being very cooperative at the very initial stage rather than going through the entire process. The customer should look into other available options in the market and eventually if they can't find the right vendor for their job, then they should enhance their IT competencies through internal management.

### ***Trust and Security***

Trust and Security does impose a great risk on the offshore outsourcing model as the outsourcer may not always be aware about how sensitive information of his firm is being handled at the premises of the supplier or in another country.

The many break-ins and other general security problems occurring with internet/intranet demonstrate some of the risks of engaging in any form of business model linking to the internet. Many vendors have tried to reduce the danger using firewalls and encryptions but such manoeuvres not only reduce risk they also reduce the effectiveness of a networked environment. The IT community has generally accepted that effective use of encryption and firewall techniques could eliminate much of the risk related to unauthorised access and data theft (Guah & Currie 2003).

The authors propose that the negative effects of this situation can be minimised by entering into an alliance or a joint venture with the supplier. This may encourage the supplier to handle their customer data (who in this case will be their partner) more securely.

### ***Expertise***

Labour specialization is achieved through wider access to technical and business talents. Our research finding showed that many companies outsourced offshore vendors due to the pool of technical talents, which can be achieved with lower costs. Many of the Indian computer firms entered into joint ventures with multinationals, mostly US- based ones, which welcomed the technological skills of Indians. Most of these companies began to do R&D for their overseas partners, very similar to the joint ventures, like Digital Equipment Indian and HCL-HP (Soota, 1994). From the literatures we can find, firms like IBM, British Airways, British Telecom and General Electric have moved parts of their internal software development operations to countries like India and Ireland. These firms found the transition relatively easy due to lower cost, a loyal workforce, an English speaking culture, surplus of computer graduates and government incentives (Aeh 1990). However, our research revealed, that some the customers experienced skilled and better staffs were being transferred off on to a new or a different contracts. Therefore, the authors' suggestion for this problem would be to detail as much as possible on the contract clause for the staff's who would be involved in the project as well.

### ***Infrastructure***

The rapid developments in Information and Communications Technologies (ICTs), particularly the Internet and World Wide Web (WWW) have led many to identify new opportunities for outsourcing, such as Application Services Provisioning (ASP). During the 1960s and 70s, outsourcing was not a flexible activity since most of the work involved service bureau contracts which were difficult to manage overseas. During the 80s and 90s, offshore outsourcing became easier as large technology suppliers increased their presence overseas, together with the management and consultancy firms. Still, offshore IT outsourcing was not a major phenomenon during this period, as most of the contracts resided in North America and Europe. As ICT became more sophisticated, coupled with the growth in outsourcing more generally, offshore outsourcing became a possibility for many firms. Most of the Indian firms who were interviewed had a strong interconnectivity with their customers facilitated by a well planned and adequate investment into IT infrastructure, thus contributing towards 'time to market' reduction by 30 percent. Due to this time zone difference, if an error occurs in the system it can be fixed overnight and the system can be fully available on the next day. However, this time saving is only possible if the supplier and customer have a good telecommunications and infrastructure.

## **Culture and Trade Policy**

Firstly, as the supplier and the outsourcer are from two different countries, there can be a vast difference in their culture. While interviewing one of the project manager from the customers' side put forward his view of concern on this particular issue by stating:

*“Differences in culture means that there is often a big difference in the way of thinking, understanding of ideas and interacting with each other. Therefore, there can be a clash of ideas and misunderstandings when two different teams, groups or firms work together”*

Also, the rules and regulations of different geographic regions are different and trade agreements between countries can either encourage or impede the nature of offshore outsourcing. This means, both the supplier and the outsourcer need to identify and beware of the rules and regulation of both their countries before entering into contracts.

The best way to deal with the Cultural and the Interaction area of the trade issue is to provide the vendors with proper and very precise specifications of the customer requirements. Appropriate training should be given to the supplier to guide them on how to produce what the customer wants and also to teach them more about the culture and style of working of the customer/outsourcer.

Trading risk is also related to the political situation of the supplier's country. However, there is nothing an outsourcer can do to reduce the political risks. Just as it is said that precaution is better than cure, the outsourcer should study the current state of the infrastructure, economic state, political state and history of the offshore country before deciding to outsource.

## **Summary and Future Research**

Though research described in this paper is ongoing, the authors have identified the essential adoption factors of offshore IT development between firms in the UK and India through case study research. These proposed fundamental factors may not necessarily be required in every offshore outsourcing decision. Conversely they are not unusual or esoteric issues to consider. Some of these factors can be avoided or reduced by implementing our suggestions or by carefully selecting the vendors. As more knowledge about offshore outsourcing continues to advance, the strategy of selective or smart sourcing become norm. However, our research found that the common reasons for offshore outsourcing are cost reduction, reduced time cycle and access to highly skilled professionals. Interviews from vendors establishes the fact that Indian firms have invested heavily in technical education and can provide a ready supply of highly skilled programmers at a relatively low cost compared with North America and Europe. The country has improved its infrastructure, particularly in the area of telecommunications. Favourable government tax incentives and the ability to complement UK and US time zones with a virtual around the clock approach are some of the advantages that this country has to far.

However, if these factors are not considered, then offshore outsourcing looks a very complex and uncertain. In addition, the literature also suggests some possible areas for exploration. The first is the belief that the term of offshore outsourcing contracts has gotten shorter (Lacity and Willcocks, 1998). Early deals such as Kodak were often for ten years and it has been argued that such lengthy contracts increase the risk that the firm can be hostage to the outsourcer.

As technology improves, customers are able to take advantage of the efficiencies and economies while the vendor is locked into a fixed price contract, relegating most of the benefits to the customer. However, to avoid risks and uncertainties both the customers and vendors should practice in developing an in-depth contact. Though business conditions are often in constant change, arrangements should be in consideration to avoid conflict of interest for both parties.

The authors have noted influences on offshore outsourcing decision by the participating firms based on theoretical references to well known strategies (Currie and Seltsikas 2000; Lacity and Hirschheim 1993, Rajkumar and Mani 2001). The authors further propose to study the key issues influencing the offshore IT outsourcing model between the US and India through case study and desk-based research. The results of these studies will be used to do a cross-country and regional analysis of the key issues influencing offshore IT outsourcing, thus, creating a more comprehensive understanding of the current global offshore IT outsourcing phenomenon.

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