

# Preliminary Study to Investigation the Determinants that Effect IS/IT Outsourcing

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## ABSTRACT

Due to developments in information communication technologies (ICT), globalization, and increase competition, Information Systems / Information Technology (IS/IT) outsourcing has become a pressing need for many organizations across the world. The process involves service provider and service receiver organizations. A study has been undertaken to examine the issues associated with the process of IS/IT outsourcing from the perspective of both the parties (service provider and services receivers) in the dynamic business environment. Issues have been brought up from the literature and factors have been identified from the state-of-art practice of IS/IT outsourcing. Empirical studies have revealed that there are some significant differences between IS/IT Outsourcing and non-IS/IT outsourcing, even the rationales in decision making are altogether different (Thai and Kim, 1998), (Useem and Harder, 2000). Due to renewed interest in IS/IT outsourcing by leading multinationals for a variety of reasons including cost cutting to gain competitive advantage, the firms participated in the study, showed interest in the outlining the issues which they found most relevant in their respective business contexts. Research issues have been explored take into account perspective of outsourcer as well as of the clients. Therefore, an attempt has been made to establish the relationship of the various factors involved in the process.

**Keywords:** *IS/IT Outsourcing, IS/IT Outsourcing as a business strategy, strategic outsourcing.*

## 1. INTRODUCTION

The practice of information systems (IS) outsourcing is now around 50 years old. It all started with General Electric Corporation contracted with Arthur Anderson and Univac for automation of their accounting and finance system (Klepper and Jones 1998). Since then the process of information system outsourcing has undergone a myriad of changes. Growing information technology (IT) outsourcing market which was estimated to be of \$ 140 billion (Source: International Data Corporation, European Outsourcing Markets and Trends, 1995-2001, London, UK, 1998) and predicted to of \$500 billion by 2004 (Spagat, 2001) has lately attracted the interests of the research community to look into the modus operandi of the outsourcing process and practice. The interesting part of the whole phenomenon is developed world has found reliable and dependable information system solution outsourcing partners in the developing world while vice versa has been true in case of traditional manufacturing outsourcing. The major players in outsourcers include the firms based in India, China, Russia and Philippine which is the result of the process started in late 1980s wherein developing countries were striving for rooting sophisticated technologies in education (Habibie, 1990). This article takes a closer look at the research issues related to IS/IT outsourcing strategies, perspectives, methodologies, processes and practices.

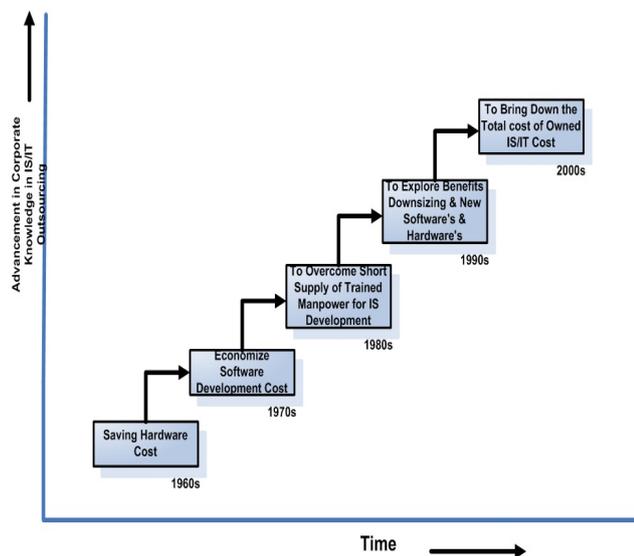
Information system outsourcing has been done for various reasons during last five decades. In 1960s information system outsourcing focused on saving

hardware cost and facilitating computer operations and management problems while in 1970s the focal idea was to economize on the cost of software development. In 1980s main objective behind information system outsourcing was to overcome the problems of human resources. This was the time when personal computers and client/server architecture were gaining popularity and large and medium businesses started thinking in terms of in-house development. In fact information system outsourcing was still practiced but for a different reason. Most of the business application software used to exist on the mainframe computers which were losing market to client/server computing. This was also a phase in the history of computing when age of technology started to diminishing from what it used to be before. New technologies were developed and launched at much rapid rate and obviously there used to be shortage of trained manpower in the area of latest technology introduced. Information system outsourcing was done during this period to cope up with technological advancements and for transition from mainframe to client/server model of computing.

In early 1990s vertical integration and concept of lean organization was gaining ground and downsizing or rightsizing were the order of the day. Late 1990s was a phase of very rapid advances in the field of computing. Evangelization of internet, web enabled applications and electronic commerce belongs to this era. This was also time for large scale system integration of existing and new technologies. Innovations and fast adaptation of innovated technologies have changed the ways of doing business.

Product and services could be differentiated based on the information technology used for delivering them. Increased service quality awareness was considered to be the main factor along with security concerns in doing business on internet. Information system outsourcing obviously done for exploiting the benefits of internet technologies and the real challenge was seen in becoming truly global by being available to the customers in all parts of the world.

In late 1990s information technology (IT) is considered most critical resource for business success. Information system (IS) outsourcing now in early first decade of 21st century is a strategy for survival of many firms. Cost savings and flexibility in adopting the state-of-art technology have been the key concerns in making decisions related to information systems outsourcing. Growing role and importance of information and communications technologies creates wide gap between in-house development of capabilities and skill to realize the potential of these technologies and intelligent outsourcing. Information system outsourcing play important role in closing this gap. With the passage of time the corporate knowledge of IT/IS outsourcing has advanced at the same time complexities in assessing risk factors, dictates of technological and economic considerations for survival and better business performance have also become more dominating. As a result IT/IS outsourcing continues to be a process of strategic importance. Figure 1 outlines the IT/IS outsourcing considerations in last five decades.



**Figure 1: IT/IS Outsourcing Chronology and Corporate knowledge Level**

Information system outsourcing while offers a bonanza of benefits like service flexibility with mix of onsite and offshore resources, cost advantages for competitive pricing, productivity gains and higher quality of service, ability to focus on firm's key business, and capability to offer a differentiated product, also attracts

problem like lower employee morale and hidden costs which are difficult to account for. Industrial engineering or operations management approaches to IS/IT outsourcing are applicable only in a limited domain. Empirical studies have revealed that there are some significant differences between IS/IT Outsourcing and non-IS/IT outsourcing, even the rationales in decision making are altogether different (Thai and Kim, 1998), (Useem and Harder, 2000). We, therefore, need to look into a set of fresh issues which have cropped up because of the rapid advances in technology, changing social environment and varying phases of economies of the developed and developing countries.

Unfortunately complexities involved in the process have not been removed and contracts in outsourced situations have not been made robust and flexible enough to provide fairly equal opportunities to make profitable propositions for all the parties involved. Information system offshore outsourcing is more complex than onshore as some political, social and cultural issues are invoked along with techno-commercial and personnel problems. The idea is, outsource IS/IT solutions, before they are forced on you as a corporate firm for economic reasons. Information technology solutions outsourcing has been adopted as a measure to achieve improved business performance rather than a revival strategy. With outsourcing becoming increasingly a survival strategy and being viewed as an engine for economic revival for the firms of developed countries and a mechanism of future growth for the firms in developing countries, an attempt has been made to bring out critical issues involved in the process and practices related to information system outsourcing. Various models used for making information system outsourcing decisions have been analyzed and issues raised in IS/IT outsourcing process are synthesized.

Offshore outsourcing of information technology and systems' solutions have invoked fair amount of resentment among white collar employees of the developed countries because they have been on the receiving end this time. Globalization of trade, commerce & industry and economic liberalization process have come to a full round. One of the dictates of liberalization and globalization processes has been to source the product or services wherever they are available irrespective of location at economical cost meeting desired level of quality. Economies of integration (Noorie, 1990) are the keys to success in the global market place.

Key research questions explored in this article include Is IT/IS outsourcing different from traditional outsourcing? Issues involved in IT/IS outsourcing for large firms are the same as that for small and medium businesses (SMBs)? How important is relationship management with outsourcers? How complex is the process of risk assessment in IT/IS outsourcing? Is consortium outsourcing safe for SMBs? Does outsourcing bring down significantly the cost of IT resource ownership? Is IT/IS outsourcing be considered as a means of improving firms business performance? Does IS/IT outsourcing lead to poor information control which is

crucial for businesses in general and businesses in service industry in particular? Is rapid advances in information technology a key motivation for information outsourcing? Apart from economic are there other considerations for IT/IS outsourcing? How IT/IS outsourcing is perceived by the existing work force?

## 2. OUTSOURCING AND INFORMATION SYSTEM OUTSOURCING DEFINED

Many definitions of outsourcing exist in literature. We start with a working definition of IS/IT outsourcing as turning over part or all of the organization's IS/IT functions to external service provider(s) to acquire strategic, economic and technological advantages to improve overall business performance. (Loh and Venkatraman, 1992). Kakabadse and kakabadse (2002) identify contrasting trends in outsourcing practices of US, Australian and French organizations with that of European firms. The authors have noted that US companies choose outsourcing for strategic reasons like to achieve the best practice, improving service quality, focusing on core competencies of the organization, attempting to better utilize and leverage new technology while maintaining a discipline on costs. European companies were found to be paying greater attention to economies of scale, non-cost based benefits.

**Issues:** IT/IS outsourcing needs to be done for a variety of reasons. Pressing need for survival and growth in the competitive world while economy is passing through a difficult phase is mainly cost based while maintaining quality and improving business performance.

## 3. INFORMATION SYSTEM OUTSOURCING AS A STRATEGY

DiRomualdo and Gurubaxani (1998) present a framework for assessing strategic intents in information technology outsourcing. Information system improvement by doing IS better, commercial exploitation of IT assets externally and achieving better business results by effective use of IT have been proposed as a three strategic intents.

**Issue:** The motivation for outsourcing could range from cost reduction to improving business performance.

Service based economy of modern age offers exciting opportunities to profit-making companies to further increase their profits through strategic outsourcing (Quinn, 1999). Backbone of service based organizations is their information systems. Hence outsourcing information system could be one of the key decisions on which depends firm's performance and profitability. Outsourcing can be done for the reasons including obtaining higher values, more flexible and integrated services than internal sources can offer, improving capacities to stay current and innovate by interacting with leading firms in the business, achieving improved and effective logistics and shareholder

value gain that the company cannot achieve otherwise.

**Issue:** Outsourcing can improve logistics and firms internal capabilities apart from saving cost and increasing profits. The challenge lies in dealing with companies who have core competencies in those technologies.

The Continental Bank's move to outsource the complete IT solutions from an International Business Machine's (IBM's) subsidiary was looked at with great surprise by banking community industry in early 1990s. Banking analysts were of the opinion that banking corporation should not surrender its complete control over IT for the sake of cutting cost. The bank outsourced information technology solutions when senior managers were convinced that outsourcing offered best way to service the customer relationships that form the foundation of the bank's business with a revised focus on premium services to wealthy customers and businesses (Huber 1993). Improved and personalized services provided to target customers revived the business performance of the bank. Outlining strategy for outsourcing IT solutions it has been observed that managing relationship with outsourcer and ensuring ways to integrate technology and ownership at the business unit level have to be decided before reaching an agreement. Outsourcing IT solutions should be seen an activity of only vendor selection but involves considerable analysis and mutual evaluation to choose a responsible partner that will ensure developing a healthy long term business relationship.

**Issues:** Does outsourcing IT solutions amount to surrendering or losing control over IT strategy?? Outsourced IT solutions can help improve image of an organization for personalized services. Outsourcers are to be evaluated and carefully chosen for a long term business relationship.

Yang and Huang (2000) present a decision model for outsourcing each information system in an organization based on some assumptions. These assumptions vary from system to system depending upon the attributes. Analytic Hierarchy Process (AHP) method proposed for making decision taken into account factors like management of IS department in house, strategic alliance with vendors, procuring new technology, cost reduction, high reliability and better service level.

**Issues:** A systematic methodology for mutual evaluation of vendors is required. A set of factors needs to be identified locally within a firm which help guiding IS outsourcing decisions based on uniform criteria. Leadership qualities like strategic thinking, deal making, partnership governing and managing change are crucial to managing successful IS/IT outsourcing (Useem and Harder, 2000).

**Issues:** IS/IT outsourcing is making a strategic change or capable of making a change with the kind of advantages it

is offering today. Strategic leadership in both, outsourcer and client, can help develop one time transaction into a long term business partnership.

Tayles and Drury (2001) present a comprehensive model for making outsourcing decisions. Advocating thought of retaining the core competencies (Prahalad and Hamel, 1990) in the organization the authors suggest the organization should be rational on the costs. The outsourcing decisions should be part of firm's technology strategy and it should be driven by strategic designs (Husain and Sushil, 1997).

**Issues:** Outsourcing decisions have a long term bearing on firms' capabilities and financial health. IS/IT outsourcing should be seen as facilitator in improving business performance and therefore figure in firms technology strategy. Technology strategy of technology driven firms has a key role to play in its business performance.

Kern et al (2002) concluded that focusing only on the cost factor may not be a good idea while selecting an IT outsourcing partner. Decisive criteria for winning an outsourcing contract could be the cost, value added benefits, technology, expertise, capabilities, and reputation or prestige of the bidders. The difficulty realized here is that the firm quoting the lowest price has the highest chances of getting chosen. The assumptions here are that the outsourcer has sufficient economy of scale and superior IT management to deliver improved services at a lower price and the resulting savings are those the client will benefit from. The relationship between the client and outsourcer enters into a difficult situation when large disparity exists between what committed and delivered products/services. The learning points identified include staffing for relationship dimension of technology supply outsourcing and development of healthy relationship with technology supplier can lead to more opportunities for enhanced benefits.

**Issues:** Cost should not be the only criteria in selecting an IT outsourcing partner. Development of long term relationship should be the focus of the IT outsourcing partner selection. Professional relationship managers should be involved along with technology managers while negotiating an outsourcing contract.

Quinn (2000) recommends not just outsourcing products or systems but outsourcing of innovation and innovation capabilities. He outlines four important forces for outsourcing innovation as increasing demand for innovative products and services, increased supply of scientist, technologists and knowledge workers, improved interaction capabilities, and economic incentives in lower tax rates, privatization and relaxation in trade barriers.

**Issue:** Can innovations and innovation capabilities be outsourced?? What could be the primary objectives behind this thinking?? Techno-commercial strength of an

organization can help improve business performance by outsourcing innovations and commercializing it quickly. This can even help outsourcing organization to consolidate its position on technology front.

A framework applicable to the generic outsourcing process has been presented by Momme and Hvolby (2002) which runs in six phases. Competence analysis, assessment & approval, contract negotiation, project execution & transfer, managing relationship and contract termination are identified as different phases of the outsourcing process. Key activities, performance measures and expected output have been identified for each phase to know the progress of the process. Six phases have then been synthesized in four strategic phases to be called as strategic outsourcing process.

**Issues:** Competence analysis and mutual evaluation has to go hand in hand and the outcome of these two phases will form the basis for negotiation. Relationship management phase is all pervasive and runs through all the phases like a common thread. Outsourcing project development, execution and completion will pave the way for new projects. Outsourcer's growth is linked with the growth of client companies.

#### 4. IT OUTSOURCING AND RELATIONSHIP MANAGEMENT

Currie (2003) suggests under the uncertain economic conditions, small and medium business (SMB) firms continue to seek ways to enhance business performance through application outsourcing which helps in maintaining low cost of ownership of IT resources. This application-on-tap or pay-as-you-go approach of outsourcing is convenient to SMBs as they have little or no experience of application outsourcing and do not make use of complex risk assessment tools. This approach does not involve issues related to relationship management on the long term basis.

Heckman (1999) concluded in an exploratory survey of 518 large organizations that most of the companies manage their relationship with IT suppliers in a relatively informal manner. Formalization of the relationship with IT suppliers was found to be a function of size of the customer organization and number of suppliers it uses. It is also observed in his study that the companies may practice both formal and informal strategies for managing business relationship with suppliers.

**Issue:** In large companies where IT resources are distributed, both from business development and customer service perspective, formal relationships with IT suppliers are crucial. With the size of organization dependence on IT also increases. Large organizations need to have more than one suppliers of IT solutions and need to maintain formal business relationship with them.

Lee (2001) assessed impact of knowledge sharing, organizational capability and partnership quality on IS outsourcing in Korean public sector organizations and concluded that knowledge sharing between the two organizations is key factor for success. Organizational capability to learn and acquire required knowledge from service outsourcer organization is the key factor for motivating people to share knowledge. Partnership quality was found to be a significant intervening variable between knowledge sharing and IS outsourcing success.

**Issues:** Organization's willingness to learn and acquire knowledge motivates people to share knowledge with service provider organization. Knowledge sharing is the key to quality of partnership between the service receiving and providing organizations. Effective knowledge sharing also has a bearing on quality of partnership which decides the success of IT/IS outsourcing success. Figure2 shows the impact of organizational factors on quality of partnership and eventually on IS/IT outsourcing success.



**Figure 2: Organizational factors and IS/IT Outsourcing Success**

### 5. RISK FACTORS IN IT OUTSOURCING

Zucchini (1992) presents Four-S cognitive model to help assess the outsourcing decision in a managerial context. Organizational objectives are mapped against the utility of decision. On organizational objective spectrum economics and expertise have been mapped as two extremes while on utility of decision functional and dysfunctional nature of decisions are mapped as two extremes. The model suggest that an outsourcing decision falls in one of the four quadrants which are functional-economics as scale, functional-expertise as specialty, dysfunctional-economics as sale and dysfunctional-expertise as surrender. The model suggests that best

advantage of outsourcing is taken when expertise of the outsourcer is taken into functional areas.

Behara et al (1995) another cognitive model taking extent of innovativeness and dispersion/organizational foot prints to axes. Functional and cross-functional applications are taken as two extremes of Dispersion/organizational footprints and established and innovativeness as that of extent of innovativeness. The authors have proposed in sourcing for applications which are falling in highly innovative and cross functional quadrant as they are likely to be more crucial for the long term survival of the organization.

Earl (1996) suggests possibility of weak management, inexperienced staff of outsourcer, outdated technology skills, lack of organizational learning, loss of innovation capabilities and technological invisibility as key risk factors which a firm needs to analyze before making a decision on IT outsourcing. Emphasizing careful analyses of risk factors and making conscious decision the adverse effects IT outsourcing can be minimized. Bhattacharya et al (2003) present a framework for business risk management for effective IS outsourcing. The framework provides mapping for assessing business risk exposure of outsourcer and the client organizations. It is suggested that when both outsourcer as well as client organizations are at high risk exposure of capabilities then the emphasis has to be on capabilities building. In sourcing has been suggested for low risk exposure capabilities of client organization.

**Issues:** IS/IT outsourcing is not risk free and chances of failure of the process are abound. But this is true for all business processes. Success can be ensured by mutually evaluating capabilities and competencies of each other. One sided evaluation of risk factors is no more applicable in the current scenario. IS/IT outsourcing is now for mutual benefits and survival as many to many relationship exists between outsourcer and client organizations.

### 6. SYNTHESSES

Based on the issues identified from the literature, an exploratory Idea Engineering exercise was undertaken involving 15 clients and outsourcer organizations based in UAE which has helped in crystallizing and clustering the issues in six critical guiding factors which are presented in Table one.

**Table 1: Clustering Critical Guiding Factors**

Relational & Cultural Factors	Economic Factors
Business Environments Management control of the outsourcing process Vendor Selection Management of outsourcing	Value added outsourcing strategies Cost control Capital Budgets Economic

Nature of the relationship between the parties Intangible factors (strategy, quality) Strategic Alliance	Greater Flexibility Global competition
<p><b>Legal Factors</b></p> Political Relationship with countries of origin of outsourcer. Business Relationship with countries of origin of outsourcer. Economic Relationship with countries of origin of outsourcer.	<p><b>Risk Factors</b></p> Reduce capital cost Reduce transaction cost Strategic Sourcing Coast of hardware Expense of software development Support for vertical integration Total or partial outsourcing Management responsibility and risk
<p><b>Organizational Factors</b></p> Aim to achieve best practice Improve service quality Enhance capabilities to develop new product/services Strategic Quality Lack of knowhow and specialist Tangibles factors (Cost, Facilities, Human resources) Effects on outsourcing Strategies Downsizing Effects on organizational structure Overall Business Strategy Outsourcing Decisions Process Desire to concentrate on core competencies	<p><b>Technological Factors</b></p> Achieving the best practice Access to new technologies/skills Technology Rapid changing and complex technology

Relationships of the critical guiding factors contributing to IS/IT outsourcing success have been depicted in Figure 3 for deeper understanding.

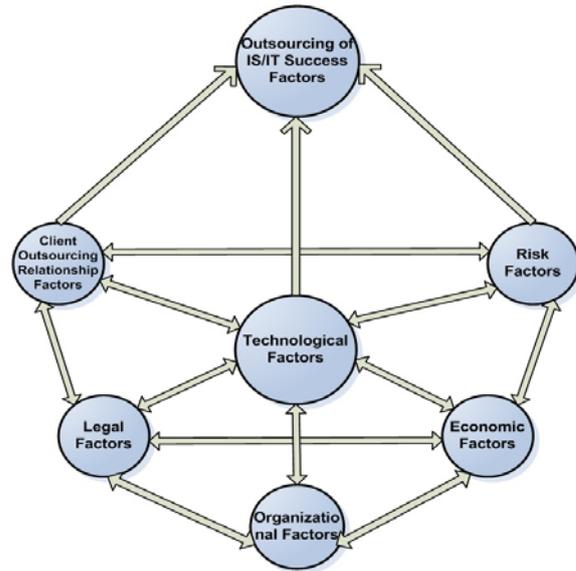


Figure 3: Critical Guiding Factors Contributing to IS/IT Outsourcing Success

## 7. CONCLUSION

There is no one size fits all approach in information system outsourcing. IS/IT outsourcing consolidating itself as a strategic action on which depends the performance of the firms. Corporate firms perform information system outsourcing for various reasons which they think are critical to them. What we need to make sure that our vendors have the right mix of competencies which gel most appropriately with our current requirements and strategic business goals. Like physical products IS/IT solutions also have effective work life after that they need to either changed or drastically updated or modified which leads to recurring process. Due to shrinking technology life-cycle in general and information technology in particular, the process and practice of IS/IT outsourcing is also fast changing. Extensive and continued research in outsourcing IS/IT solution for strategic advantage in business is the need of the hour.

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