

2006

## Theoretical and Pragmatic Framework For Outsourcing Of IT Services

Haidar M. Fraihat

*King Fahd University of Petroleum and Minerals*

Follow this and additional works at: <https://scholarworks.lib.csusb.edu/jitim>



Part of the [Management Information Systems Commons](#)

---

### Recommended Citation

Fraihat, Haidar M. (2006) "Theoretical and Pragmatic Framework For Outsourcing Of IT Services," *Journal of International Technology and Information Management*. Vol. 15: Iss. 1, Article 4.

DOI: <https://doi.org/10.58729/1941-6679.1161>

Available at: <https://scholarworks.lib.csusb.edu/jitim/vol15/iss1/4>

This Article is brought to you for free and open access by CSUSB ScholarWorks. It has been accepted for inclusion in *Journal of International Technology and Information Management* by an authorized editor of CSUSB ScholarWorks. For more information, please contact [scholarworks@csusb.edu](mailto:scholarworks@csusb.edu).

## **Theoretical and Pragmatic Framework For Outsourcing Of IT Services**

**Haidar M. Fraihat**

**King Fahd University of Petroleum and Minerals**

### **ABSTRACT**

*Since previous research in the information technology (IT) field focused on successes and failures of IT outsourcing (ITO) by organizations, this paper investigates the critical success factors (CSF) for IT outsourcing in the existing global environment. It is intended to provide assistance for the consideration of business professionals and IT managers when they make, examine or evaluate ITO decisions. Fifty four IT outsourcing CSFs were identified through an extensive literature review research. Some of the factors were utilized more frequently than others, while some CSFs have been given more importance than other by IT researchers.*

*A 2-part theoretical framework (conceptual and pragmatic) was developed to aid the process of ITO decision making by IT managers in the global environment. The theoretical framework was developed based on existing research focusing on information technology, information systems, ERP, and IT outsourcing research.*

*The conceptual CSF theoretical framework developed was based on six broad factors of concern, namely: strategic, the organisational situation, information quality, work quality, IT management scope and user requirements & satisfaction factors. A general decision making cycle consists of seven stages has been proposed. The pragmatic CSF model (framework) developed in this paper consists of critical management factors important to manage the ITO relationship effectively and attributes that affects the ITO relationships of client and vendor. At the end of the paper, measures and metrics of IT outsourcing performance were discussed with some proposed examples and tools.*

### **INTRODUCTION**

Many organizations have gone through a series of stages of continuing efforts to sustain a competitive advantage over their competition. Outsourcing, in general, has been widely used as a business method and has become an accepted way of functioning business activities in organizations. In the December 2003 Institute of Management & Administration report titled "Keys to Outsourcing Success for Compensation & HR Managers", the authors have discussed six (6) critical success factors to have a good outsourcing agreement. The six CSFs are: 1. the dependence of company on vendor, 2. risk of information leakage to outsiders, 3. trusty relationship, 4. low-cost high-quality proficiency services, 5. focus on strategic core competencies, and 6. flexibility of business and commitment.

Organizations seek IT outsourcing (ITO) to perform an IT function when an external service provider (ESP) is contracted instead of executing the function internally. This ESP might be a third party, company division or subsidiary of a single corporate entity (Godenhielm, 1999; Lacity and Hirschheim, 1993; Ross et al., 2001b; Benedon, 2000; (McNurlin & Sprague 1999; Phillips, 1992). Increasingly, organizations are seeking ITO as means to minimize IT service costs and any pertinent taxations (Elmuti and Kathawala, 2000; Philips, 1992). IT Outsourcing is also a common option for start-up operations, reduce start-up time to new markets, and for organizations entering new business lines (Jakarta Post, 2002; DeLone and McLean, 1992, 2002; Juma'h and Wood, 2000; Currie 2000; Khandelwal and Ferguson, 1999; Hudson, 1999).

ITO is more than a simple procurement decision based upon economic or financial criteria (Overby 2002; Ross, et al., 2002c). It is a strategic decision by IT managers that encompasses long term relationship that can create

new sources of value for an organization (Peynot 2003; Klepper 1999). Many types of IT services can be outsourced selectively, the most prevalent being data centre operation, desktop support, help desk services, networking management, software development and support, disaster recovery and, more recently, web hosting and application management (Ensign and Akaka, 2003; Butt, et al., 2002; PriceWaterhouseCoopers 1999; Schmelz and Conley, 2003).

Information technology (IT) environment is expected to meet high standards of operation and processing integrity, while offering round the clock availability, security, and good performance (Elmuti and Kathawala, 2000; Cross, 1995; McNeil, 2003; Ross 2001). In today's environment, organizations must deal with rapid and regular changes in IT (Beulen and Ribbers, 2002; Pierre, et al., 2002; Overby, 2003b), the performance demands of the e-economy (Yallop and Morgan, 2003; Liola and Kotwica, 2002) and pressure to deliver competitive IT functionality (Parthenios, 2001). To meet these challenges, organizations are increasingly considering outsourcing of their information processing activities as an attractive option in one form or another (Datz, 2003b; Wipro Report, 2003). Outsourcing is not a new concept and has existed for many years in one form or another (Rockart, 1979).

This paper addresses the factors leading to a successful outsourcing decision. The aim is to provide a pragmatic model that identifies and classifies these factors in order to improve the managerial decision making with regarding to Information Technology Outsourcing.

## LITERATURE REVIEW

In order to research into IT outsourcing (ITO) critical success factors (CSFs), a thorough and intensive literature review has been conducted with a focus being made on CSFs of IT outsourcing which have been found to have potential links with almost every area of IT. Previous articles and papers (over 170) about IT outsourcing agreements, projects and relationships have been reviewed, focusing on successes and previous failures factors of those actions. There were claims in the 1980s and early 1990s (Cross, 1995; Field, 1999; Pierre, 2002) that information technology (IT) could change the way people and organizations perform business. This has been proven to be the case as economics and competition interact with IT.

The remaining part of this section aims at surveying literature review in search for recognized CSF's in ITO. Towards the end of the paper, a table will summarize these factors and the research papers addressed them. There have been numerous cases of ITO failures reported in the literature (Cecere et al, 2003; Giera, 2003; Martorelli, 2003b; Butt et al, 2002; Costa, 2001; Udo, 2000; Elmuti and Kathawala, 2000; Barthelemy, 2001; Sondergaard, 2003; Casale, 2002; Gibbons, 2001; Ensign and Akaka, 2003; Overby, 2003b; Overby, 2003c). Therefore a considerable quantity of research papers in the 1990s and 2000s were published attempted to study the CSFs and causes for ITO failures and how to ensure its success.

In a white paper titled "To Outsource or Not to Outsource? Zantaz.com e-BUSINESS ARCHIVING has discussed the advantages and disadvantages of outsourcing in general and outsourcing of the e-business archiving systems in particular. One of the competitive advantages and CSFs of ITO is that organizations can save a huge amount of wasted time and resources on structured small functions (i.e. e-mail tasks). Therefore, ITO can do work to be more time and cost-effectively than internal IT workforces and IT managers can rely on it to obtain their operational and strategic needs.

DeLone and Mclean argued that there is no consensus in the IT literature on the measure of IT success and it is even hard to define IT success (DeLone and McLean 1992, 2002). It has been hard to define a set of success factors that fit specific and individual IT outsourcing, because each project can have unique characteristics (Kakabadse and Kakabadse, 2000; Bowtell et al., 1999; Koch, 1998; Garnick et al, 2003; Barthelemy, 2001; Pring, 2002; Giera, 2003) in which they disagrees with DeLone and McLean's findings. Their models had no problem to identify several factors for IT success, rather than the six fixed broad factors that DeLone and McLean (1992) developed.

The popularity of outsourcing as a business technique is increasing rapidly, especially as large parts of IT are grown to be looked at as commodity-like. The application service providers (ASP) model and competition

between IT organizations has become more mature (Symons, 2003). As per the Forrester Research report, the market for applications outsourcing will be growing to more than 114% in 2004 than was in 2003 as a strategy to cut cost and turn over responsibility to external service providers (ESPs) (Ross, et al. 2003h; Ross, et al. 2002c). The same report forecasted expenditure of applications outsourcing services will jump to over than \$15 billion in 2004 from \$7 billion in 2003 and the market of IT services will grow at a 50% compounded annual growth rate through 2007.

As per Kakabadse and Kakabadse (2000), ESPs nowadays are capable of taking over administrative functions such as billing, payroll processing and financial and managerial accounting and not far beyond running only information systems. According to the Gartner Group, 1999, Business Process Management (BPM) is a growing element of the outsourcing market. It was \$6.1 billion in 1997 and \$14.7 billion in 2002, which led to further market redefinition. There is increasing evidence that costs increases with outsourcing, and it does not decrease costs as expected among the organization who adopted ITO. Only 5% of the organizations revealed and achieved cost saving according to the survey of 1,000 managers conducted world wide by the "PA Consulting Group" (PACG), but 39% have achieved moderate results.

Well prepared strategies such as understanding cost savings, benefits and risks of investing time and resources at each stage of the outsourcing life cycle, implement and centralize vendor management, retain a portfolio of ITO partners, consider the use of benchmarking throughout an ITO engagement, encourage vendors to pass on cost savings of ITO, work with outsourcers to focus on reporting and operational metrics, and construct longer contracts to deliver better pricing could lead to a successful outsourcing engagements (McNeill, et al. 2003; Elmuti and Kathawala, 2000; Kumar, 2003).

Merriman and Giera (2002) have discussed the quality service value by the outsourcer that depends on two key factors: the way in which the outsourcer impacts the business and whether the provider is merely developing and deploying IT capability or fully operating it over time. Availability of metrics and use them as integral part of the outsourcing contract is a CSF as per Merriman and Giera (2002), and can be classified into three categories: Commitment Metrics, Bonus Metrics, and Improvement Metrics.

In the absence of vendor trust, or substantial synergies between the business process and IT enablement, Martorelli and Moore (2003) says that companies will generally be better off pursuing a best-of-breed strategy when looking to outsourcing IT-related services and BPO services. The vendor must have the best of breed business process skills and the specific IT automation skills, and the outsourced business process that is tightly coupled with the outsourced IT systems. The organization must have faith in its existing outsourcing agent to address sets of requirements. (Martorelli and Moore, 2003)

One of the success factors of ITO is the use of a formal systematic approach to establish a successful outsourcing relationship decision (Chen and Soliman, 2002). Pring (2002) stated that one of the imperatives for outsourcing and critical success factors is to understand the subtleties of outsourcing contracts in the different industry sectors, although outsourcing has become a non-continuous, mainstream approach to manage IT in the last decade. The characteristics of outsourcing obviously differ among different industry sectors, while reliance on outsourcing providers such as ESPs has increased rapidly.

Seabrook, et al. (2003) have conducted a study to measure trust in ITO relationships. They have come up with Confidence Index model that enables enterprises to measure and track the confidence both parties have in a relationship. The model has two aspects. Trust is one aspect of the confidence that each party have in the outsourcing contract. The other aspect is the controls that govern the contract. The right mix of trust and control set up the requirement of successful outsourcing relationships, which are essential for the long-term success of outsourcing deals.

From a strategic point of view, the firms may furnish value-creating deals to obtain narrow segments services of a process from outside sourcing. Ross, et al (2000) have raised the issue of limited outsourcing to create value from the outsourcing agreement and found out three CSFs of limited outsourcing which are well-defined contracts, top management involvement in decisions and improvement of internal skills through exploiting outsourcing activities. Jitpaiboon and Kalaian (2005) argued that the more support from top management in dealing

with the IT project (including the outsourcing projects), the higher the chance that the project will survive. They argued that the level of support varies from one management level to another.

Ross, et al. (2001b) has discussed the agility and agile operations that are requested and hunted by most of the modern international firms. Agility can be achieved by contracting third parties to manage their applications that may lead to achieve the desired flexibility. The critical factor that ensures the success of the agile IT outsourcing is to outsource based on individual applications' needs that require a greater level of flexibility than others.

Butt, et al. (2002) noted down that one of the today's CSFs of the outsourcing agreements is the use of neutral or third parties for measurement of ITO results. Successful companies, such as Pfizer, obtain data from neutral third parties whenever possible, and practically, relied upon systems to assess the uptime and the performance of its web site hosted by the external provider, Qwest. Small number of firms, such as Pfizer, has mastered the art of relying on external technology (exT) suppliers to obtained outsourced services. If the outsourcing organization chose the wrong vendor, then outsourcing is probably would not become the right thing to do, and they would not reach the right results.

Five CSFs have been used by companies who attempted the ITO methods (The October 2003 report of "Supplier Selection & Management Journal"). They are Standardizing outsourcing procedures, coordinate outsourcing decisions across the enterprise, establish procedures and intelligence for cost calculations, utilizing advanced analytical tools, and automating the global outsourcing decisions. Garrad (2003) articulated that the success of the ITO rely on the following CSFs: well-defined projects to allow professionals to work cooperatively, define functions candidate for outsourcing, availability of the right vendor, availability of the right resources, providing the right vendor support, and finally, well-defined escape procedure in case of vendor failure and bringing it back in-house.

Selecting an optimum ITO vendor is one important factor; it may or may not lead to a successful ITO relationship (Akomode, et al 1999). Another success factors mentioned by Akomode, et al. (1999) which are the commitment by both partners including managers and IT professionals to "mutually" achieve success and share the minimized anticipated and unanticipated risks; the assignment of the responsibility of ITO agreement to a single contract manager to handle it from start until completion; and setting or identifying statistical measurements to achieve quality improvement and reach the ITO success. Similarly, as per Juran and others, quality improving as a fourth success factor to enhance the ITO decision that can be emphasized by the involvement and commitment of top management. Increased flexibility, better quality service, access to state-of-the-art technology and not to mention the cost savings are among many of the benefits that can be achieved by a well-drafted IT outsourcing relation. (Akomode, et al. 1999)

From the ESPs point of view, Forrester Research conducted a field survey to identify the top CSF a service provider must acquire to have a successful ITO relationship (Ross, et al., 2002c). Fifty Five (55) different companies replied with the following 10 CSFs: 1) knowledge of business (40%); 2) quality of people (38%); 3) solid references (36%); 4) deep experience (31%); 5) competitive cost (25%); 6) quality of product (24%); 7) strong methodology (22%); 8) reliability (20%); 9) other (51%); and 10) don't know (4%). The previous conducted studies showed that price is the most important purchase element considered by 50% of the companies when outsourcing any service, roughly half of the respondents, the provider's knowledge of the work wasn't a key factor. Ross, et al. (2002c), in their recent study, the study respondents ranked the knowledge of business as the top CSF.

As per intensive interviews by Beulen and Ribbers (2002), three (3) important CSFs related to the ESPs (vendors) are determined. They are contract management, service delivery and human resources management. Contract management is required for managing the IT outsourcing relationship with the outsourcing company. Service delivery is required to provide the contracted services to the outsourcing company. Human resources, which are in shortage, are required to manage the IT outsourcing partnerships.

## TYPES OF IT OUTSOURCING

Outsourcing is often seen as an all or nothing proposition, or that outsourcing constitutes the covering of a significant portion of IT budget (Pierre, et al. 2002; Akomode, et al. 1999). According to Lacity and Hirschheim (1993), there are four basic types of outsourcing arrangements, general ITO, transitional ITO, business process outsourcing (BPO) and business benefit contracting. In general, ITO can be classified into the following broad categories:

1. **General IT outsourcing** consists of three alternatives: selective ITO (Barthelemy, 2001; Claver et al., 2002; Kakabadse and Kakabadse, 2000; Costa, 2001; Ekanayaka et al., 2003; Currie, 2000) where one particular task of IT activities is contracted, value added ITO (Ekanayaka, 2003; Chen and Soliman, 2002) for an internal activity that could not be cost effective, and mutual ITO (Lee, 1996) in which an activity is performed mutually by a vendor and internal IT unit. To make specific IT functions powerful, then selective IT outsourcing is the right business method to provide better competitive service level and contract flexibility (Field, 1997).
2. **Transitional outsourcing** is involved to migrate from one IT platform to another and it is considered as partial IT outsourcing, where the provider may take responsibility for selected IT services, processes, or resources. Business process outsourcing (BPO) is a new ITO concept that will be discussed in another part of this study, refers to performing an entire business function by the contracted vendor for the client organization and handing all activities and IT resources over to the external service providers.
3. **Business benefit contracting** is another new concept where a contract is furnished between the parties and share specific benefits from the business (Lacity and Hirschheim (1993). Hudson (1999) has defined the three types of outsourcing in a different way: traditional suppliers, quality vendors, and value-added partnership. The last type is based on mutual benefits, sharing strategic planning, long-term, flexible and adaptive. The value-added ITO also allows the company to reduce capital expenditure, get restructured, focus on core business, share ideas and technology, leverage infrastructure, re-engineer IT value chain, increase productivity, and quick service delivery.
4. **Offshore outsourcing.** In a recent practice, there is a special type of IT outsourcing called offshore outsourcing (Garrad, 2003; Babaie, 2003; Koch, 2003). Offshore Outsourcing, simply put, is IT development at another location or vendor facility connected with the client's location using a high speed data communication links at a real time basis. Offshore IT Outsourcing is a rapidly growing practice, because companies are under pressure to get products and services at high quality levels than internal resources. Reasons for offshore outsourcing includes focused staff, reduced operational costs to very low levels, get to market quickly, and obtain required expertise (Kleinhammer, et al., 2003; Strande, 2003; Overby, 2003b, 2003c)

## RESEARCH METHODOLOGY

The strategy of this research paper consists of providing extensive literature review, definition of IT outsourcing, attempting to spot, determine and list the IT outsourcing critical success factors employed by organizations and building a framework for outsourcing decision making. Outsourcing patterns will be studied and detected in the international market. Recent literature and research conducted over the past five years has been reviewed and investigated to determine the IT outsourcing critical success factors and find out why outsourcing may lead to a success or to a failure situation.

The critical success factors related to IT outsourcing will be depicted and then classified into few major categories. A model will be developed to demonstrate the relationship of these spotted critical success factors to the organization decision-making process. The resultant model will be examined through analysis for suitability to ITO managerial decision. Finally, the research paper will contain a final section to summarize the main research conclusions.

## RESEARCH OBJECTIVES

The objectives of this paper are:

1. Provide a background of existing studies related to IT outsourcing critical success factors.
2. Determine and enumerate and list the main and the most discussed critical success factors of IT outsourcing from an intensive literature review.
3. Classify the predetermined critical success factors into few main categories to simplify the business and research analysis.
4. Develop a theoretical framework for CSFs based on the existing literature.
5. Build a business model to show the significant relationships between the different critical success factors.
6. Examine the relationships within the resulted critical success factors and their effects on the ultimate IT outsourcing decision-making process.
7. Provide decision makers with a conceptual framework and a pragmatic model (if possible) that will help them to deal with critical issues related to managing IT outsourcing.
8. To advance the research in the area of managing IT outsourcing.

## IT OUTSOURCING CRITICAL SUCCESS FACTORS

Critical Success Factors were analyzed by Earnshaw (2000) as required for the ESPs and Applications Service Providers (ASP) to succeed. He has provided some market general information for ASPs and discussed their threats and opportunities. Six (6) CSFs have been identified and suggested to be mastered by a prospective ASP to gain and retain customers. They are: 1. well-defined customer needs and targeted applications to be offered, 2. establish good market credibility by having the good qualifications and selective projects, 3. build an acceptable systems development infrastructure, 4. have strong security measures in place to monitor and detect systems, 5. provide quality customer service and consider customer continuous contact, 6. own a viable business model to identify costs and to enable ASP to serve its customers at a profit.

Hurley, (2001) said that "In the same way that a successful manufacturing organisation understands its supply chain and material sources, a successful service provider understands the sources and uses of its people's knowledge and skills. Keeping the required IT-staff by vendors and maintain the access to the variety of skills during shortages is a CSF for any outsourcing agreement to accomplish any defined job. If the vendor is short of people, then he is in short of capacity. Mike Kear, VP of Computer Network Systems of Maryland, mentioned some factors of ITO success like: price, references, and scope of resources, plus subjective qualities like commitment to quality, cultural fit, contract terms flexibility, and location of service (Yudkowsky, 2001).

Since IT outsourcing partner is considered as strategic alliances, Lee, (1996) has suggested that a well-defined contract is a CSF and the best mechanism or effective ITO management to ensure vendors share the same success and may be "profit motives" as their customers. As per Lacity and Hirschheim (1993) survey, the key success factor for a successful relationship agreed by all respondents is the well-defined contract (Lacity and Hirschheim, 1993). Based on the internalization of human and technical resources discussed in previous literature, ITO contracts were classified into three types: complete outsourcing, facility management outsourcing, and systems integration outsourcing. The assignment of the responsibility of ITO agreement to a single contract manager to handle it from start until completion has been also emphasized by the author as a post contract activity CSF.

As per Kakabadse and Kakabadse (2000), the lack of understanding ITO by both parties could lead to increase unrealized hidden costs. Understand business and its processes by the IT department in the outsourcing organization before turn it over to ESPs is a CSF, otherwise the ITO contract manager will not successfully understand the rising problems out of this relationship. Even the locally, regional and global ESPs have a greater

need to understand client's current and future business and related processes to provide the right support. For example, Sears, the known retail group, had mutually cancelled its 10-year ITO contract with Andersen Consulting just 2-years after due to the strategy changes and lack of understanding, (CA Magazine, 1999).

The practice of ITO and accepting its risk as a wide usage has been discussed thoroughly by Leamus (2003). Accepting the risk especially with the IT outsourcing is typically done without fully identifying relevant risks. The practice of ITO is a way to transfer the risk to others and reduce or eliminate the threat of managing IT. This high-level approach must be adapted to each program that manages risk. Assessment of value, cost, and risk of all ITO contracts to each other and against absolute measure can be done by portfolio analysis of those contracts. This assessment help to predict that services will or will not be delivered on time, on budget, on function, or on value by the ESPs (Leamus, 2003).

As per a presentation provided by the Material Supply Organisation (MSO) at Saudi Aramco, MSO is realizing that outsourcing is a world phenomenon, but it is not a necessity or a must to run business. In some cases, outsourcing is identified as a "business-survival imperative" that should be explored. Professional departments' managers and division heads are the people who have to explore and examine outsourcing, evaluate alternatives, and report results honestly to top management. Requirements of the company and the ESPs have to be assessed through a certain criteria and with several site visits. Some of the CSFs in evaluating potential ITO partners are: fair and objective assessments, focus on the scope of the function to be outsourced, provide management and decision makers with professional opinions.

Khandelwal and Ferguson (1999) have classified CSFs as either ongoing, or temporal. For example, The Year 2000 problem is a temporal issue and the proper management for this problem is a CSF. While strategic IT planning is an example of an ongoing CSF due to periodic and continuous updating on a timely basis. Structured interviewing, focus groups, the Delphi technique, and the group interview are the major administrative techniques widely used to determine the CSFs. Each of these techniques has its strengths and weaknesses.

In the structured interviewing technique interviews are applied by an analyst to focus on the CSF of individual IT managers through one or more meetings. The next technique is focus groups where a group of managers are involved by a facilitator to discuss and decide. The Delphi technique, although it is a slow process, requires a group of managers and through several rounds can determine the CSFs and related information. The Delphi technique due to its slow application is considered inefficient process. Finally, the group interview technique requires a number of prepared CSF constructs to start with to identify CSFs.

Through interviews conducted by Beulen and Ribbers (2002) in Asia, they provided an insight of the factors that have major impact on IT outsourcing relationships in Asia. There are three most important factors related to the outsourcing company are IT strategy, IT Management and IT budget. The strategy for IT has to support the business and related changes. IT Management is responsible for the implementation of the IT strategy and for managing any partnerships of IT outsourcing. The IT budget is to spend on IT services, which should be part of the total budget of any business unit.

Aubert, et al (2001) talked about the factors that affect the outsourcing contracts from being a successful operation. "You'll never have all the information you need to make a decision – if you did, it would be a foregone conclusion, not a decision" (D. Mahoney). CSFs related to five broad categories were studied. The five broad categories are the technological newness, application size, development team's lack of expertise, application complexity, and organizational environment. Risk assessment and management are two IT outsourcing CSFs similar to any business activity, but with great influence, as per studies conducted on ITO in general and on ITO risk management in particular. (Aubert, et al., 1998, 1999, 2001)

Godenhilms (1999) has determined nine (9) CSFs for the e-commerce business and outsourcing the tasks is one of them. Outsourcing IT and its tasks is a good way to ensure the success of the IT activities. Godenhilms has advised the Finnish companies about the importance of speeding the execution of ITO to speed the success of e-commerce success. Outsourcing is a way to overcome the traditional attitude of doing everything internally. "Companies that outsource will outrun those that don't" (Godenhilms, 1999).

Syntel is a global organization specialized in Applications development and e-Business solutions and provides solutions to many corporations. Through a white paper, titled "Successfully Implementing a Global Applications Outsourcing Strategy", Syntel have discussed few CSFs for IT outsourcing. To solve the shortage in IT professionals, organization can make use of outsourcing. This also will downgrade the IT project management by 20% – 50% of the cost. Careful attention is also a CSF during the transition phase from internal processes to external vendors. Effective communication of the ITO plan is also a CSF within the organization itself and between the organization and its vendors.

As per the Transition Partners Co. 2003 report "Achieving a Well-Managed Desktop-Server-LAN Environment", effectively and efficiently evaluating the working environment to have a well-managed environment is supporting the success of the IT businesses. The IT professionals should exert all their efforts to achieve this target. The Transition Partners Co. report also suggested key issues such as: 1. documented and reported relationships with vendors, 2. carefully reviewed, negotiated and detailed contracts, 3. vendor service, cost and productivity metrics, 4. regular scheduled vendor meetings and communications, 5. established, negotiated, and regularly updated service levels agreements are appropriate CSFs to achieve successful relationships with ESPs.

In another report titled "The Effective CIO – Success Criteria in the 21st Century", Transition Partners Co. has discussed very sensitive issues. In the 60's and 70's, the organization paradigm was different from today's environment or the environment that will be in the next century. In the past, almost everything was developed in-house with the organization's internal resources and outsourcing of any aspect of information technology was an indicator of a weakness that the IT center could not take responsibility.

Meckler and Shultis (2003) discussed few factors critically related to success of outsourcing in general. Successful assignments that exceed management expectations are due to involvement during the execution phase of work. The attributes of successful outsourcing relationships are the following four (4) common attributes: vendor commitment in client's project; well-defined and updated project expectations; efficient and effective communications; and timely reporting of problems and troubles.

Gibbons (2001) said that Outsourcing has been there for decades and pertinent contracts are the most important part of the outsourcing relationship. "If it's not in the contract, you'll find it hard to do," said Alison Smith, VP of infrastructure, Myspace Inc. (Gibbons, 2001). The essential requirement of the outsourcing relationship is the well-defined contract. Outsourcing provides a way to go around many constraints such as: limited alternatives, long SDLC times, unavailable internal IT professionals and no enough money.

Ensign and Akaka (2003) during their study of Department of Defence (DOD) commercial practices guide for outsourcing IT services have identified CSFs that were essential for implementing ITO. First, the strength of interaction between IT management and the vendor organization. Second, partnership alignment between the client and ESPs at the executive level to ensure similar objectives. Third, relationship management to strengthen interaction between client and provider at the operational level. The most important CSFs found in the study were the role of the executive leadership, flexible and trusty client/ provider relationship, defining and measuring current processes before outsourcing. DOD IT outsourcing phases framework is: 1. Determine sourcing strategy, 2. Define operational model, 3. Develop the contract, 4. Transition to providers, 5. Select providers (CSF), 6. Manage providers' performance, 7. Ensure of provided services. All the ITO phases are considered CSFs of successful ITO agreement.

The Jakarta Post (Indonesia) titled "IT business: Up and down" on April 08, 2002 stated that "the key success factors for ITO are known to everybody: "With IT outsourcing the ownership of skills, equipments, products and processes risks are not an issue any more." It has to be based on accepted standards, and it has to be scalable and secured (The Jakarta Post)." The word "outsourcing" became part of the daily chatting in the IT industry. It became a viable smart practice by small organizations to compete with big local and international service providers. ITO allowed all types of firms to have IT services externally they were not able to have them internally in the past.

Many CSFs are associated with successful ITO relationships. As per Datz (2003a), the main one is the top management vision and directions. The next key factors are the communication and trust, which have been critical

to the relationship's success. "Setting up ground rules and meeting with each other is the best way to overcome trust issues." Service level agreements (SLA) are other CSFs that assist to share vision and resources, but the informal communications are the catalysts to have effective relationships. "Individual entities trying to work together, they tend to want to be more autonomous." (Datz, 2003a)

Service Level Agreement is a new concept to understand requirements and was defined as an emerging in the filed of ITO agreements (Larson, 1998; Sarissamlis, 2002; Colburn, 2003; Koch, 1998; Liola and Kotwica, 2002). The service providers vary in their technical capabilities and this affects the quality of services to be provided to their customers. Furnishing a number of detailed SLAs between the vendor and his client is needed to have well-structured and well-detailed services. The key to set service-level objectives and establishing roles and responsibilities is to determining what to measure and why.

SLAs have to cope with the rapid change in the technology and the business market and be maintained periodically to match professional practices. Liola and Kotwica (2002) recommended the following 10 steps guide to construct good SLAs: 1. Assess the requirement of an SLA, 2. Get executive management commitment, 3. Designate SLA managers, 4. Train involved parties, 5. Assess current services, 6. Explore customer feedback, 7. Draft SLAs and ensure agreement, 8. Request parties feedback, 9. Complete al activities, 10. Implement and manage SLAs.

CIOs are carefully accepting "offshore outsourcing", said Koch (2003). According to conducted study survey, two out of twelve (16.6%) agreed to discuss the ITO subject as a business method, even though all agree that it will continue. In the past, offshore ITO was utilized only by large organizations due to their work size. The resulted coordination cost was high to have effective small projects. The maturity of offshore ITO may be is the critical success factor that may convince small organizations to adopt offshore IT outsourcing.

Many organizations consider outsourcing remote access functions to ESPs. Giga Research provided two (2) critical factors that lead to successful savings from outsourcing remote access functions to ESPs. They are: the user percentage accessing the system through a local call, and the incremental costs to support mobile users in an outsourced environment. The honest preparation for the ITO and its type will determine its success or failure. Finally, freeing up resources to allow better customer services are also a CSF that motivate IT outsourcing successfully. As per Narsu (1999) IT management usually get the top management approvals for ITO actions, because every body convinced that ITO saves money in the long run. By lowering recurring service fees that represent the big part of in-house remote access costs, it does not means that outsourcing can save money and become viably true.

DeLone and McLean IS Success Model is described as a multidimensional model with a broad scope. It was first published in 1992 and was based on theoretical and empirical IS research made by several researchers in the 1970s and 1980s. The model combines individual measures from the IS success categories to create a broad measuring instrument. The main purpose of the D&M IS Success Model is to synthesize previous research to provide guidance to future researchers. The model was developed based on the research of Shannon and Weaver (1949) and the information "influence theory" of Mason (1978), and other MIS research studies from 1981-1987. The model consists of six interconnected dimensions of success: system quality, information quality, system use, user satisfaction, individual impacts, and organizational impacts. (DeLone and McLean, 2002)

The DeLone & McLean IS Success Model has become a basis for comparisons for the justification of the measurement of the dependent variable in IS researches. The measurement of information systems success or effectiveness is so critical for the value and efficacy of IS management actions and IS investments. (DeLone and McLean, 2002) The multidimensional and interdependent nature of I/S success requires careful attention to the definition and measurement of each aspect of this dependent variable and measure the possible interactions among success aspects to let the effect of various independent variables segregated with one or more of these dependent success dimensions.

According to previous observations by Juma'h and Wood, ITO agreements have been embarked by both large and small-sized companies (Juma'h and Wood, 2000). Through ITO partnership, hard to imitate advantages can be created by joining business capabilities with technical and environmental factors. A critical factor, as per

Juma'h and Wood (2000), could be noticed in the long term decisions. The reduction of long-term obligations could be achieved by ITO. The reduction of employment cost, equipment expenditure, and research and development could lead in the long run to reductions in employee rights and pensions, capital investment in hardware and/or software, and their expenditure to solve future problems such as Year 2000 compliance (Y2K) or Euro-compatibility.

One import CSF in a good outsourcing action is to retain the appropriate functions such as: 1. Maintain overall management, 2. Maintain direction, 3. Maintain oversight and 4. Maintain continuity (Cecere, et al., 2003). Oversight was described as maintain the awareness and some level of control over how projects are executed. Continuity refers to the need to maintain relationships between customer groups and people within IT.

Meta Group in "Managing Outsourced Service Levels: Organizational Evolution" dated June 30, 1999, have considered the synchronization of Service-Level Management Group (SLMG) and Relationship-Based Management (RBM) as a CSF for effective service management. Solid project management capabilities, An internal company culture that is comfortable with adherence to fairly rigid processes and procedures, Very strong oral and written communication skills, A well-defined chain of command, escalation processes for problem resolution, and Mature SLAs monitoring and reporting are counted as characteristics of successful ITO relationship. (Giera, 2003)

The CSFs addressed by Claver, et al. (2002) are: 1. Understanding the client objectives, 2. The top management's support and involvement, 3. Choosing the right provider, 4. Well-defined and structured outsourcing contract, 5. Keeping frequent contacts with providers, 6. Clarity of outsourcing objectives, 7. Attention to clients' problems, 8. Provider's reputation and stability, 9. Provider's range of resources, and 10. Cultural proximity between partners. While Costa (2001) have spotted similar factors contributed to the ITO and affect its success: vendor's service quality, vendor-partner trust, partners co-operation and communication, partnership type, the degree of outsourcing (of two functions, systems operations and telecommunications), the tightness of contracts and arrangements, availability of evaluation processes, achievement of anticipated benefits (partially or completely), the realization of cost benefits, the strategic effectiveness of IT outsourcing as a business tool in today's competitive environment.

The service stability by the outsourcing contractor is another CSF provides focusing on main business issues (Phillips, 1992). Chen and Soliman (2002) have suggested the following three CSFs for any ITO agreement. Data security has to be taken in the consideration when communication with an ESP. The commitment of the top management and end users has to be achieved before and after taking the decision of ITO. Thirdly, the success can not last by itself, but require a continuing assessment to ensure its long lasting during the IT outsourcing relationship.

The organization's decision to outsource an IT function through ESP is affected by another seven (7) critical factors (Chen and Soliman, 2002). Beside the value that can be driven by bundling services from ESPs, production cost advantages, transaction costs, availability of internal IT-expertise are the three traditional dimensions that affect the outsourcing decisions. The next CSF is the "asset specificity" which refers to how the asset has been used by similar users. In today's environment, the rapid pace of technology evolvement has exceeded the IT departments' ability to go by smoothly. The "ESP value chain" implies the application of its components: software, hardware, implementation, data center/hosting, and connectivity in a seamless manner. Finally, the application media fit which means the feasibility to provide any specific application by a specific means. (Chen and Soliman, 2002)

ITO is considered a relationship with some unique characteristics. Accordingly, the critical factors considered by Garnick, et al., (2003) in this regard are: well-defined contracts, good communications, responsive partners, cultures and styles fits, time and cost reductions. The CSFs were have been discussed intensively by Garnick, et al (2003). The others are: operating costs reductions, service levels improvements, IT capital investments, standardized IT assets, IT and business alignment, and operational costs are more predictable. On the other hand, loss of control, expensive ITO agreements, give up IT is a core competency, terminating relationship difficulties, bringing back IT in-house difficulties, low personal interaction, unstable service quality are the considered as ITO restrictions.

As per Ekanayaka, et al. (2003), one main CSF of the ITO relationship is how the vendor develops and manages his agreement and turns it to a successful relationship. Even though organisational clients and vendors have different profits and benefits, partnerships are key element in the success of ITO relationship (Ekanayaka, et al., 2003; Currie, 2000). Casale (2002), the CEO of the Outsourcing Institute, has suggested ten (10) CSFs that should be followed by vendors to win IT contracts and get involved in successful relationships: Availability of IT resources, IT business specialization, business commitment, using modern marketing methods, screening opportunities, building reputable relationships, well-defined detailed contracts, defining influencer's requirements, partnering and subcontracting, and cost saving advantages.

LeClerc, (2003) have discussed software as a service and the role of Application Outsourcing Providers (AOP) in the deployment, management, maintenance and support of business software. ITO is becoming common practice in today's environment and among all types of businesses. However cost savings are success factors for ITO, they are not the only factors. 1. Reduced implementation time, 2. Better service and support for internal users, 3. Quicker and simpler system upgrades, 4. Focus on core competency, and 5. Customer service improvements are other benefits and added values of IT outsourcing. (LeClerc, 2003)

Barthelemy (2001) says that most of the time organizations ignore the hidden costs of IT outsourcing and the organization level of experience with IT outsourcing is a way to reduce those hidden costs. Successful IT outsourcing experiences is associated with time and resources invested in the early stage. The knowledge about outsourcing and its management will be crucial when organization become big, virtual and scattered all over the globe. (Barthelemy, 2001)

IT outsourcing should be developed as partnerships rather than just only service contracts with external service providers. Yalof and Morgan (2003) recommended four (4) critical success factors that include tactics, tools and processes for making external service providers relationships successful, satisfying, open and productive. The four CSFs are: 1. Contracts do not build partnerships, but SLA that do, 2. Well-known scope of work and know how to change it, 3. Periodic service review meetings with vendors, 4. Focus on important performance aspects.

Krahl (2003) reviewed and analyzed many write-ups on why and how to outsource and found out that the majority discussed why more than how to do ITO. Krahl (2003) suggested few factors that may affect the success of ITO decisions like: hiring IT consultants with good outsourcing experiences; treating outsourcing issues as critical business decisions with careful study (justification to outsource for one company is not adequate justification for another); Establishing the right team for performance evaluating from technical and business personnel; maintaining the good level of services compared to required cost reduction objective; and explaining the cost structure to vendor to assist understanding are real important elements that leads to success.

Field (1997) identified CSFs of successful ITO and they are: identifying core competencies, organization style to enable corporate strategy, required IT skills, service costs and applying the variable cost concepts, top management support, vendor and ESPs selection, vendor financial security, building vendor relationship, vendor commitment level, vendor service quality and vendor conflict management. Veal III (2001) recommended few major factors that lead to successful ITO actions. IT outsourcing requires a well-defined structured contract with the vendor. Managing the relationship with the vendor is also essential. Service level agreements, vendor compliance, performance monitoring and reporting, and vendor and client approval rights are critical success factors of an outsourcing contract (Veal III, 2001).

Ware (2002) have considered internal staff shortages, cost constraints, improve quality, and service delivery time as the CIO's four primary drivers of ITO decisions. The author, based on Gartner Researches recommendations, considered Five (5) factors that critically contribute to IT outsourcing success: 1. clear communication between organization and ESPs to ensure vision alignment, 2. well defined and frequently amended contracts to handle business adjustments, 3. considering change management, 4. furnish SLAs to meet service expectations, and 5. assign an IT manager to oversee the project and to manage the relationship with external service providers.

The study of Elmuti and Kathawala (2000) has tried to investigate what the organizations should make to succeed in their ITO relationships. The surveyed organizations have reported the following factors as critical success or failure factors: fear of change or job loss, choice of outsourcing partner; skills to deal with outsourcing alternatives;

adequate training skills; adequate comprehensive planning; cultural, legal, and economic issues; supporting infrastructure; clear objectives; clear expectations; organizational communications; hidden costs (such as travel, license transfer, and foreign taxes) and risks; adequate control systems; contract period and flexibility; cross functional political problems; and support and involvement of high level management.

To circumvent common pitfalls of the traditional ITO practices, Strande (2003) has provided suggestions to improve the outsourcing arrangements. He has provided a new approach of outsourcing to obtain IT services. Strande's (2003) approach model combines license model (vendors developing applications) and the ASP model (using prepaid ready-made applications). This approach will achieve success and provide value through critical factors like: eliminate or reduce risk through IT vendors, accomplish quick return on investment, obtain maintenance and technical support within the license agreement, commitment of both the client and the vendor, work collaboratively between vendor and end users, define business and end users requirements, deliver progress services or support as they are ready and incorporated testing mechanisms to ensure compliance with requirements.

Since success is an evaluative concept as per all authors wrote about the subject, then there is no specific definition for the ITO success. Costa, (2001) defined it, based on its research, as "the extent to which certain goals and benefits have been attained."

Substantially, the success of an ITO solution will critically depend on a number of key factors that include the choice of the subject of outsourcing (i.e. choice of services, processes, and resources to outsource), the extent of outsourcing (complete or partial), and a range of other factors. It is clear that ITO decisions cannot be made without understanding the significance of these critical factors in specific outsourcing situations.

Research made earlier on IT outsourcing critical success factors have determined a comprehensive list of main CSFs associated with IT outsourcing. Table No. 1 lists fifty four (54) critical success factors that previous papers and research have focused on. As a research attempt, this literature reviewed CSFs will assist to develop a theoretical framework to assess an ITO decision and lately will be linked to the findings of this paper.

**Table 1: Critical Success Factors as Depicted in Literature.**

Sr. No.	Critical Success Factors List	Key Authors
1	Access to technology	Aubert, et al., 2001; Akomode, et al. 1999; Ross, et al., 2003d; Khalfan and Gough, 2002.
2	Access to IT skills	Hurley, 2001; Syntel Inc. white paper, 2003; Gibbons, 2001; Field, 1997; Garrad, 2003; Yudkowsky, 2001; Claver, et al., 2002.
3	Automated ITO decisions	Supp. Mgt. Journal, 2003; Elmuti and Kathawala, 2000; Yalof and Morgan, 2003.
4	Available performance measures and metrics	DeLone and McLean, 2002; Merriman and Giera, 2002; McNeill, et al. 2003; Elmuti and Kathawala, 2000; Kumar, 2003; Chen and Soliman, 2002; Strande, 2003; Juma'h and Wood, 2000; Leamus, 2003; Spacek, 2000; Yalof and Morgan, 2003.
5	Availability of resources	Garrad, 2003; Yudkowsky, 2001; Casale, 2002; Khalfan and Gough, 2002.
6	Business continuity	Cecere, et al., 2003; Wein, 2003a; Overby, 2002.
7	Change management	Holland and Light 1999; Field, 1997; Ware, 2002; Elmuti and Kathawala, 2000; Udo, 2000.
8	Clear goals and objectives	Holland and Light 1999; Claver, et al., 2002; Elmuti and Kathawala, 2000; Butt, et al., 2002; Udo, 2000.

<b>Sr. No.</b>	<b>Critical Success Factors List</b>	<b>Key Authors</b>
9	Contract management	Beulen and Ribbers, 2002; Field, 1997; Elmuti and Kathawala, 2000.
10	Contract manager	Kakabadse and Kakabadse, 2000; Ware, 2002; Barthelemy, 2001.
11	Controlling system	Chen and Soliman, 2002; Elmuti and Kathawala, 2000; Butt, et al., 2002.
12	Controlled and shared risk	Strande, 2003; Yudkowsky, 2001.
13	Coordination	Supp. Mgt. Journal, 2003; Costa, 2001.
14	Cost savings	Ross, et al., 2002c; Earnshaw, 2000; Syntel Inc. white paper, 2003; Narsu, 1999; Juma'h and Wood, 2000; Chen and Soliman, 2002; Garnick, et al., 2003; Casale, 2002; LeClerc, 2003; Kakabadse and Kakabadse, 2000; Yudkowsky, 2001.
15	Cultural fit	Yudkowsky, 2001; Claver, et al., 2002; Garnick, et al., 2003; Elmuti and Kathawala, 2000.
16	Defined ITO functions	Garrad, 2003; Costa, 2001.
17	Documentation and reporting	Transition Partners Co. report, 2003; Meckler and Shultis, 2003; Veal III, 2001.
18	Effective communication and meetings	Transition Partners Co. report, 2003; Meckler and Shultis, 2003; Ensign and Akaka, 2003; Datz, 2003a; Garnick, et al., 2003; Ware, 2002; Elmuti and Kathawala, 2000; Udo, 2000.
19	Experience	Ross, et al., 2002c; Aubert, et al., 2001; Barthelemy, 2001.
20	Feasibility of IT outsourcing	Chen and Soliman, 2002; Costs, 2001.
21	Flexibility	Ross, et al., 2001b; Yudkowsky, 2001; Ensign and Akaka, 2003; Elmuti and Kathawala, 2000; Butt, et al., 2002; Godenhielm, 1999.
22	Focus on core competencies	LeClerc, 2003; Field, 1997; Garrad, 2003; Kakabadse and Kakabadse, 2000; Godenhielm, 1999; Yudkowsky, 2001; Adams, 2003.
23	Frequent contact	Claver, et al., 2002; Garnick, et al., 2003; Yallop and Morgan, 2003.
24	Improve internal skills	Ross, et al, 2000a; Chen and Soliman, 2002.
25	Informal communications	Datz, 2003a; Ulrich, 2001.
26	IT management support	Saunders, et al., 1997; Ensign and Akaka, 2003; Godenhielm, 1999; Peynot 2003; Klepper 1999.
27	ITO planning	Elmuti and Kathawala, 2000; Barthelemy, 2001; Garrad, 2003; Kumar, 2003.
28	Knowledge of business	Ross, et al., 2002c; Kakabadse and Kakabadse, 2000; Udo, 2000.

Sr. No.	Critical Success Factors List	Key Authors
29	Limited initial investment	Juma'h and Wood, 2000; Kakabadse and Kakabadse, 2000; Interland study, 2003.
30	Location and geographic proximity	Yudkowsky, 2001; Love and Roper, 2001.
31	Long-term ITO contracts	McNeill, et al. 2003; Elmuti and Kathawala, 2000; Kumar, 2003; Chen and Soliman, 2002; Elmuti and Kathawala, 2000.
32	Maturity of ITO	Ekanayaka, 2003; Chen and Soliman, 2002; Baukney, 2001; Koch, 2003.
33	Measurement of results by third party	Butt, et al., 2002; Leamus, 2003; Krahl, 2003.
34	Procedures and policies	Giera, 2003; Supp. Mgt. Journal, 2003; Martorelli, 2003b.
35	Project management	Holland and Light 1999; Giera, 2003; Dragoon, 2003; Field, 1997; Krahl, 2003, Santosus, 2003.
36	Quality of service	Merriman and Giera, 2002; Ross, et al., 2002c; Earnshaw, 2000; Yudkowsky, 2001; Transition Partners Co. report, 2003; Krahl, 2003; Field, 1997; Beulen and Ribbers, 2002.
37	Reduced hidden costs	Barthelemy, 2001; Barthelemy, 2001; Kakabadse and Kakabadse, 2000.
38	Reduced time to market	LeClerc, 2003; Kakabadse and Kakabadse, 2000.
39	Relationship management	Beulen and Ribbers, 2002; Ensign and Akaka, 2003; Giera, 2003; Costa, 2001; Ekanayaka, et al., 2003; Currie, 2000; Casale, 2002; Field, 1997; Veal III, 2001.
40	Security	Chen and Soliman, 2002; Butt, et al., 2002; Elmuti and Kathawala, 2000; Cross, 1995; McNeil, 2003; Ross 2001.
41	Selective and limited ITO	Ross, et al., 2001b; Costa, 2001; Ross, et al, 2000a.
42	Service level agreements	Larson, 1998; Sarissamlis, 2002; Colburn, 2003; Koch, 1998; Liola and Kotwica, 2002; Datz, 2003a; Transition Partners Co. report, 2003; Giera, 2003; Yalof and Morgan, 2003; Veal III, 2001; Ware, 2002.
43	Service stability	Phillips, 1992; Kakabadse and Kakabadse, 2000; Ross, et al. 2002c.
44	Short-term ITO contract	Juma'h and Wood, 2000; Elmuti and Kathawala, 2000.
45	Systematic approach & ITO Methodology	Ross, et al., 2002c; Chen and Soliman, 2002.
46	Top management commitment	Ross, et al, 2000; Datz, 2003a; Claver, et al., 2002; Chen and Soliman, 2002; Casale, 2002; Field, 1997; Strande, 2003.

<b>Sr. No.</b>	<b>Critical Success Factors List</b>	<b>Key Authors</b>
47	Trust	Martorelli and Moore, 2003; Seabrook, et al., 2003; Ensign and Akaka, 2003; Datz, 2003a; Costa, 2001.
48	Vendor commitment	Akomode, et al 1999; Meckler and Shultis, 2003; Casale, 2002; Field, 1997; Strande, 2003.
49	Vendor experience	Ekanayaka, et al., 2003; Yudkowsky, 2001.
50	Vendor reputation and stability	Claver, et al., 2002; Field, 1997.
51	Vendor Selection	Akomode, et al 1999; Ensign and Akaka, 2003; Claver, et al., 2002; Field, 1997; Butt, et al., 2002; Barthelemy, 2001.
52	Well-defined contract scope	Lacity and Hirschheim, 1993; Garrad, 2003; Holland and Light 1999; Akomode, et al, 1999; Earnshaw, 2000; Lee, 1996; Transition Partners Co. report, 2003; Meckler and Shultis, 2003; Claver, et al., 2002; Garnick, et al., 2003; Yallop and Morgan, 2003; Veal III, 2001; Ware, 2002.
53	Well-defined escape procedure	Garrad, 2003.
54	Well-prepared strategies	Martorelli and Moore, 2003; Elmuti and Kathawala, 2000.

It can be observed that while some of these factors were introduced by one researchers, most of them was re-used by many researchers. The more these factors were cited in research, the more we deem it has legitimacy and recognition. Now that an exhaustive list of factors is generated, the following sections will try to taxonomize and classify these factors in a model useful for ITO decision makers.

### **THE CONCEPTUAL CSFS FRAMEWORK**

After this extensive analysis of research conducted in the filed of IT outsourcing critical success factors, none of these researches covered all the CSFs or found comprehensive, which is the objective and the main contribution of this paper. In the same way, none of these models were found practical enough for decision makers who make strategic and tactical decisions in the filed of ITO.

To research the critical success factors of IT outsourcing and to have a guidance framework, a theoretical framework is developed to support the research process. Therefore, this paper develops a theoretical framework and a pragmatic model based on the existing literature review of information systems/ technology critical success factors to address the short comings of previous models and provide CIOs and other IT professionals with a management tool regarding potential ITO actions.

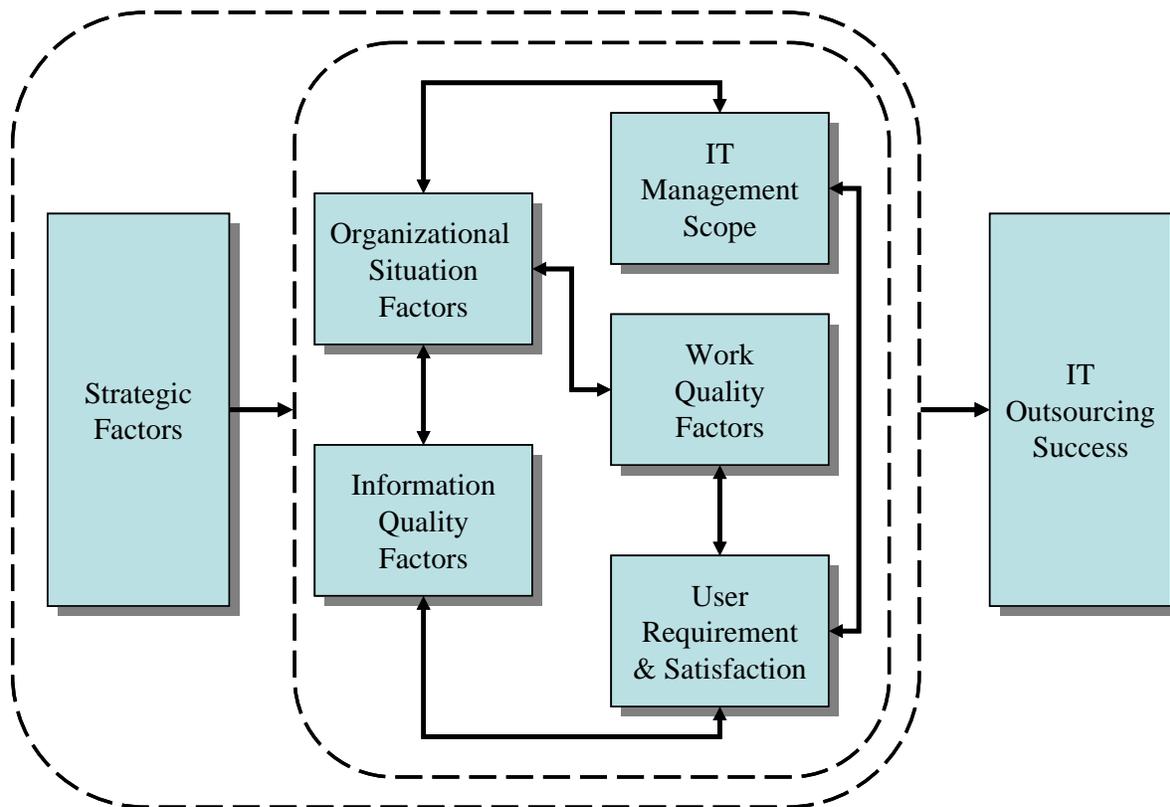
The development of the theoretical framework is part of the research methodology and objectives. The framework consists of six (6) main categories, namely the strategic factors, organisational factors, work quality, information quality, IT management scope/ sponsorship, and user requirements & satisfaction. The strategic factors are represented as influencing the whole IT outsourcing Conceptual CSFs theoretical framework and thus it is interpreted by an arrow affecting into the defined boundary that the reminding five factors are grouped in. Within the theoretical framework inside boundary the five remaining factors are presented. The theoretical framework provides the possibility even to cover complex CSFs in a more manageable overview.

The CSFs interdependency will not be discussed in depth in this paper and further researches may handle these issues although the significance of the relationships between the factors, thus the proposed arrows (interdependencies) are presented. ITO decision success is represented at the other side of the framework which represents that all of the factors will be considered when evaluating the success of ITO actions. The different critical success factors involved in the theoretical framework will be discussed in the next part.

**The Strategic Factors**

ITO gives the organization the chance to focus on business strategic issues and other core competencies (Phillips, 1992; Kelly, 2003; Love and Roper, 2001). Considering the strategic needs such as the strategic plan, IT resources, core competencies and performance measures is the early step in the decision making cycle, because it sets framework for ITO activities. This category factor was chosen based on Holland and Light’s (1999) and Lacity and Hirschheim (1996) frameworks, as identified previously, which affects ITO decision taken in order to select functions to outsource or proper vendors to perform work activities. Those CSFs concerns the organization plan, its adjustments, and any anticipated reactions of those who will be affected by the plans, such as competitors, customers and the organisation itself including employees.

**Figure No. 1: The Conceptual CSFs Theoretical Framework.**



Naturally in strategic factors are considered to improve competitive advantages for the organisation (Elmuti and Kathawala, 2000; Ross, 2000; Khandelwal and Ferguson, 1999). IT should be considered as a portfolio when selecting which IT activities to outsource and which to retain in-house. Successful outsourcing begins with an analysis of the business contribution of various IT activities (Lacity and Hirschheim, 1993; Lacity, et al., 1996). By treating IS as a two-dimensional portfolio, it is easier to identify IT activities which are valuable outsourcing candidates. Careful thinking should be made before making the decision of whether to outsource services or obtain them internally (Benedon, 2000).

The contribution of IT activity to business positioning is either commodity or differentiator. Some IT activities differentiate a company from its competitors, while others provide basic necessary functions for the business. Most IT activities are viewed as commodities. Although they do not distinguish a company from its competitors in business offering and performance terms, these activities need to be performed with competence. Contributions of IT activity to business positioning and operations are either critical or useful. Some IT activities are critical contributors to business operations, whereas others are considered only useful to operations.

**The Organisational Situation Factors**

Managers should consider and identify services to be provided, cost savings issues, the IT outsourcing ROI, geographic and proximity issues, other legal and financial factors while evaluating ITO possibilities and they should state benefits from expected IT outsourcing developments (Davison and Hudnall, 2003; VeriTest white paper: Global outsourcing: How to minimize risk and maximize ROI, 2003). Once the organization attempts its first time outsourcing activity, it will face new legal and financial implications which did not experience before or like other organizations who applied ITO for some time. Understanding the geographic area issues in which the IT operates affects the reliability of IT strategy, and then organization can benefit and achieve the IT success (Love and Roper, 2001; Khandelwal and Ferguson, 1999).

**Figure No. 2: Selecting IT activities for outsourcing (Lacity, et al. 1996).**

<b>Contribution of IT Activity to Business Operations</b>	Critical	<b>Best Source (Buy in)</b>	<b>In-source</b>
	Useful	<b>Outsource (Contract out)</b>	<b>Eliminate or Migrate</b>
		Commodity	Differentiator
		<b>Contribution of IT Activity to Business Positioning</b>	

The organizations who like to outsource their IT functions should consider many important aspects such as well-defined scope of work, price and pay items, and performance measurement issues. This factor is necessary to include in the theoretical framework when evaluating critical factors for success of any ITO actions. In some cases, ITO can support organization imperatives. In other cases, ITO is negatively affected operations and customer services, which are the two priorities of any organization, says Jerry Gross, CIO of Washington Mutual who was involved in drafting many contracts and related legal issues. He was also involved in terminating some of outsourced services. Due to complexity to keep accountability, Overby (2003a) recommends organizations not to sign long term ITO contracts.

**The Work Quality Factors**

It has been seen that quality factors have broader perspective than other issues discussed or tackled within the IT industry. Different factors of quality may be of different importance to different individuals or organizations (DeLone and McLean, 2002; Martorelli and Moore, 2003; Cross, 1995; Ross et al., 2002; Lee, 1996; Garnick 2003). The quality of work provided by ESPs is a critical factor of ITO and contributes to its success. ITO work

have been found in the literature as different than normal IT work, but it should be treated differently in how they are managed.

Coping and tracking the change in business and IT technology can be much easier with outsourcing information technology to external service providers (Cramm, 2001). The distinguishing of core and non-core functions by the IT management to know what to give away to ESPs is the first step in IT outsourcing. Examples of core activities that could not be given away are strategic applications; technology planning; Investment, financial, project and vendor management; qualified personnel knowing existing business, applications and technology infrastructure; Senior and customer relationship managers.

### **The Information Quality Factors**

Information quality of IT outsourcing actions concerns the real information produced by the external service providers and their ability to streamline the information flow in the outsourcing organisation (Ross, et al. 2003g; Claver, et al. 2002; Ross, et al. 2003i; Costa 2001; Ekanayaka, et al. 2003; LeClerc 2003; Barthelemy, 2001; Garrad, 2003; Yudkowsky, 2001; Parthenios, 2001; Overby, 2003c; Overby, 2003d; McNeill, et al. 2003). The organisational factors category is influencing the real information quality, while the user satisfaction will be influenced by the quality of the information provided by the IT outsourcing agreement.

### **The IT Management Scope and Sponsorship**

The existing literature has focused on top management support (Akomode et al., 1999; Ross et al., 2000; Benedon, 2000; Ross et al, 2003i; Khandelwal and Ferguson, 1999; Kelly, 2003; Transition Partners Co. report, 2000) and the actual risk of developing IT outsourcing agreements. Top management support described as the commitment of senior executives to support contracting ESPs and local or international vendors. Outsourcing parties do not pay enough attention to structures and procedures of outsourcing governance common pitfalls (Martorelli, 2003b). Standards and procedures are essential requirements must be considered by IT department managers. These are important CSFs should be taken in mind prior to contracting ESPs.

Overby (2003e) presented the experience of two CIOs. Many executives consider ITO as part of their business activities to achieve operative results. Some are bringing IT work back in-house, while others are turning it to ESPs, but many combine the two business techniques to meet requirements of the business. Jim Burdiss informs how "Smurfit-Stone Container Corporation" outsources its IT functions. Cost-effectiveness is the basis for Smurfit's to select non-core IT functions, such application and PC maintenance, to outsource to ESPs. The ITO procedure used by Smurfit is: 1. determine the level of staffing, 2. measure the costs and compare prices, 3. establish well-defined SLAs, 4. apply risk assessments before outsourcing, and 5. evaluate the outsourcing decisions frequently.

Michael Palmer, the COO and former CIO, says that Allied Office Products have slashed its IT budgets by no less than 39% by bringing outsourced IT functions in-house and provide these services internally. Palmer says: since good, talented people are available at reasonable prices, and then we can do it in-house by around 85%. ITO was kept limited to no more than 15% and for upgrading legacy systems such as CRM system. Palmer's guide for insourcing decisions is: 1. examine existing outsourcing relationship, 2. measure the costs and benefits, 3. define and search resource needs, 4. keep timely communication with employees, 5. organize and balance between outsourcing and insourcing.

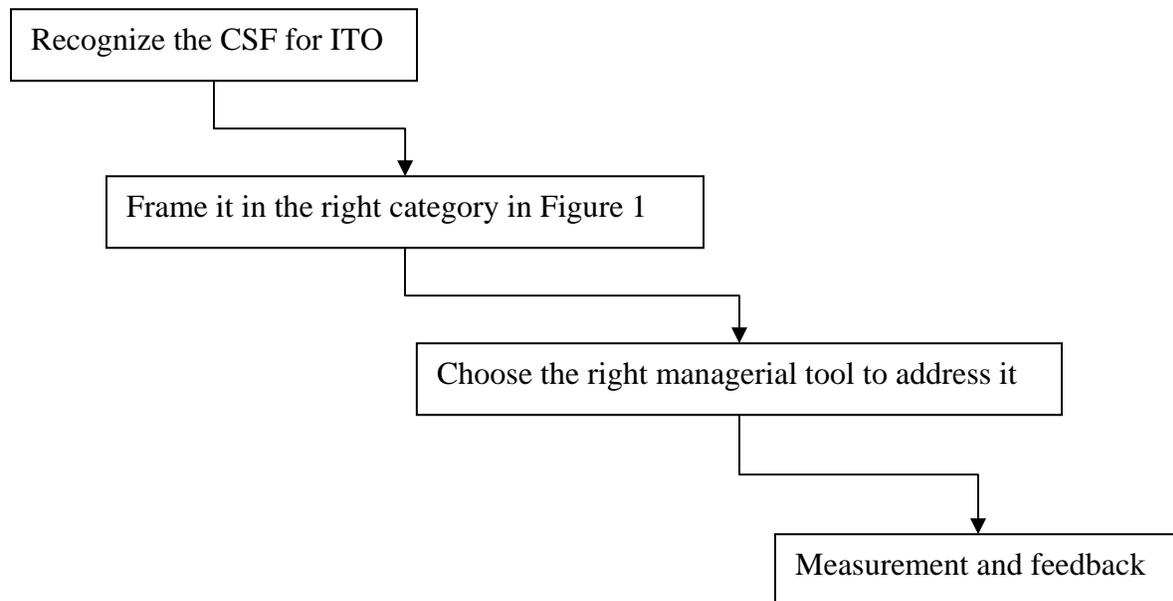
### **The User Requirements and Satisfaction**

The normal end users have the right to explain their requirements and to be provided with enough information to understand the services that will be provided by the awarded ESP. To reach a good level of satisfaction with ITO agreement, the organization should develop and enhance the internal administrative procedures to support every action, for example, who called whom for what and when. This will turn the relationship to an operational success. Defining the user requirements before transfer it over to the vendor, as per

Robbins-Gioia white paper titled “Outsourcing: A New Approach to Vendor Management”, could lead to successful IT outsourcing relationship with the vendor.

The user requirements and satisfaction factor is viewed as a potential category for achieving an ITO relationship success. User satisfaction can be viewed as the extent of which end users appreciated the information provided to them meets or exceeds their expectations and requirements. Measuring the information technology outsourcing success is a key issue for researchers, managers, and top executives as well.

**Figure No. 3: Steps to utilize the framework.**



The model in Figure 1 provides a handy tool to decision makers to frame a particular CSF in its appropriate category, which means that managers can address the factor in a more effective and efficient manner. For example, if a particular CSF was framed in the category "Strategic Factors" in Figure 1, it implies that managers may have to concentrate on dealing with the corporate strategy (General or IT) in order to increase the chance of success of the IT project via this factor. Similarly, if the factor was framed in the "work quality category" (see Figure 1), it implies that prudent managers may need to address the factor via dealing with the quality control and quality assurance tools in their organization or department, and so on.

Such analogy represents the essence of the model depicted in Figure 1 and represents the distinctive feature of the model. In other words it provides IT and procurement managers with a tool to better frame the CSF and, subsequently, better address it.

Such analysis is provided in the following Figure (3) which shows the steps the manager need to take to utilize the previously stated model (Figure 1).

## **CONCLUSION**

This paper enumerates the critical success factors of IT outsourcing and offers a theoretical framework and a pragmatic model to improve the ITO decision making process and reach successful strategic and tactical

outcomes. A literature review has been done with a focus on CSFs of IT outsourcing. Researchers have addressed some factors more frequently than others and considered important. Previous research have paid general attention on ITO, while this paper is involved into CSF study for ITO to provide assistance for IT professionals and managers to make, examine or evaluate ITO decisions. Extensive literature review research was applied to identify IT outsourcing CSFs and encouraging or discouraging ITO was not the intention of this paper.

The introduction of CSFs as a concept by Daniel and Rokart has been highlighted. A synopsis of IT outsourcing history has been given. Different types and definitions of IT outsourcing have been found in the covered IT literature were discussed. What is IT outsourcing, why, when and where are critical questions have been also discussed and different reasons, motivations, drivers and ITO restrictions were reported? Failure of ITO due to complex strategic and tactical variables involved in this type of decision making was discussed.

The 2-part theoretical framework was developed based on an extensive literature review in order to aid the process of ITO decision making. The conceptual CSF theoretical framework consists of six broad factors, namely: strategic, the organisational situation, information quality, work quality, IT management scope and user requirements & satisfaction factors. The pragmatic CSF model that consists of critical management factors and critical organizational attributes was suggested to enhance the ITO decision making process. The proposed 2-part framework displayed the need of critical management and organizational attributes and the importance of the CSFs categories of the conceptual framework to reach ITO success. The strategic and tactical measures have been discussed and addressed to ensure positive ITO outcomes and assess the degree of ITO success. Finally, a flowchart of successive steps was introduced to help managers utilize the theoretical framework of ITO CSF's in a practical manner.

## RECOMMENDATIONS FOR ITO DECISION MAKING

IT management should approach the ITO relationship as an alliance relationship, rather than partnering relationship. They should seek simple IT outsourcing agreement with flexible language to adapt environmental, technological inevitable changes in the IT business. They should seek shorter term contract with detailed SLAs within the main long term contract. Scope of work should be carefully defined to set the restrictions of the required services to avoid future misunderstandings and maintain strong vital client-vendor ongoing relationship. The qualities of the work, information and performance have to be measured from phase to phase and on timely basis. Rewards and penalties in the IT outsourcing contract SLAs have to be used carefully.

Service level agreement specifications and metrics have to be written and kept tied to IT outsourcing and business objectives to achieve required results. The well-defined IT outsourcing contract is the one managed under continuous improvement contract process. Assign an IT professional who understand the IT operations and business process in the pre-outsourced environment and understands the service requirements to be provided by the ESP as a member of the ITO governance team to manage the ITO contract. Finally, effective governance should be designed in the contract to handle contractual problems and resolve conflicts or provide proper escalation mechanisms.

## REFERENCES

- Akomode, O. Joseph, Brian Lees, and Christopher Irgens (1999). *Constructing customized models and providing information to support IT outsourcing decisions*. MCB University Press. Logistics Information Management, Volume 11 Number 2, 1999, 114-127.
- Aubert, Benoit A., Michel Patry, and Suzanne Rivard, (2001). *Managing IT Outsourcing Risk: Lessons Learned*. Cahier du GReSI no. 01-11, May 2001.
- Babaie, Ellie, Robert De Souza, Jacqueline Heng, and Rika Narisawa (2003). *Worldwide IT Services Market Definitions Guide, 2003*. Gartner Dataquest Guide Report, Note Number: ITS-V-WW-GU-0007, 6 August 2003.
- Barthelemy, Jerome (2001). *The hidden costs of IT outsourcing*. MIT Sloan Management Review, spring 2001, Volume 42 No. 3., 60-69.

- Benedon, William, (2000). *Outsourcing: The right decision?* Information Management Journal, Jan 2000; 34-41.
- Beulen, Erik, and Pieter Ribbers (2002). *Managing an IT-Outsourcing Partnership in Asia. Case study: the Relationship between a Global Outsourcing Company and its Global IT Services Supplier.* IEEE, Proceedings of the 35th Hawaii International Conference on System Sciences, 2002.
- Butt, Joseph L. Jr., Charles Rutstein, and Christian Buss (2002). *The Forrester Case Study: Pfizer's eXT Success.* Forrester Research, January 2002.
- Casale, Frank, (2002). *Ten Things Every Outsourcing Vendor Must Know to Survive and Thrive in the Current Marketplace.* The Outsourcing Institute. 2002.
- Cecere, Mark, Gene Leganza and Stephanie Moore (2003). *Organizing for Outsourcing.* Giga Research, October 1, 2003.
- Chen, Lei-d, and Khalid S. Soliman (2002). *Managing IT outsourcing: a value-driven approach to outsourcing using application service providers.* MCB University Press. Logistics Information Management, Volume 15 Number 3, 2002, 180-191.
- Colburn, Greg, (2003). *Outsourcing IT.* Compoundings, February 2003, Volume 53, No. 2., 32.
- Costa, Christina (2001). *Information technology outsourcing in Australia: a literature review.* MCB University Press. Information Management & Computer Security, Volume 9 Number 5, 2001, 213-224.
- Cramm, Susan H., (2001). *The Dark Side of Outsourcing.* CIO Magazine, Hot Seat, November 15, 2001.
- Cross, John (1995), "IT outsourcing: British Petroleum's Competitive Approach". Harvard Business Review, Reprint 95302, May-June, 1995
- Currie, Wendy (2000). *The supply-side of IT outsourcing: the trend towards mergers, acquisitions and joint ventures.* MCB University Press, International Journal of Physical Distribution & Logistics Management, Volume 30 Number 3/4, 2000, 238-254.
- Daniel, R.D. (1961). *Management Information Crisis.* Harvard Business Review, Vol. 5, 111.
- Datz, Todd, (2003a). *Winning Combinations.* CIO Magazine, the Resourceful 100, August 15, 2003.
- Datz, Todd, (2003b). *Merrill Lynch's Billion Dollar Bet.* CIO Magazine, the Resourceful 100, September 15, 2003.
- Davison, Dean (2000). *The Discipline of Successful Sourcing.* Service Management Strategies, Meta Group Reports, File: 916, 20 July 2000.
- Davison, Dean, and Michele Hudnall (2003). *Realizing Outsourcing ROI,* Service Management Strategies, Meta Group Reports, 26 February 2003.
- DeLone, W. H. and E. R. McLean (2002). *Information Systems Success Revisited.* Proceedings of the 35th Annual Hawaii International Conference on System Sciences, IEEE, 2002.
- Earnshaw, Alan C. (2000). *ASP Success Factors: An Analysis of the Critical Areas Required for Success as an Application Service Provider,* 2000.
- Ekanayaka, Yamaya, Wendy L. Currie, and Philip Seltsikas (2003). *Evaluating application service providers.* MCB University Press. Benchmarking: An International Journal, Volume 10 Number 4, 2003, 343-354.
- Elmuti, Dean, and Yunus Kathawala (2000). *The effects of global outsourcing strategies on participants' attitudes and organizational effectiveness.* MCB University Press. International Journal of Manpower, Volume 21 Number 2, 2000, 112-128.

- Ensign, John, and Daniel, K. Akaka (2003). *DOD Needs To Leverage Lessons Learned From Its Outsourcing Projects*. Middle Search Plus, FDCH Government Account Reports, Apr 25, 2003.
- Field, Tom (1997). *Caveat Emptor: An Outsourcing Buyers Guide*. CIO Magazine, CIO.com issue, April 01, 1997.
- Field, Tom (1999). *10 Years That Shook IT*. CIO Magazine, Trend-lines, October 01, 1999.
- Garnick, Richard, Bruce Caldwell, G. K. Prasanna, and Frances Karamouzis, (2003). *IT Outsourcing Options*. Gartner Research Group May 28, 2003.
- Garrad, Roy (2003). *Ten Criteria for Offshore Outsourcing*. White Paper from RCG Information Technology, Inc. April 29, 2003.
- Gibbons Paul, Lauren (2001). *Classic outsourcing Blunders*. Darwin Magazine, August 2001.
- Giera, Julie (2003). *Outsourcing Management: Align Management Techniques to the Outsourcing Model*. Planning Assumptions, Giga Research, Forrester Research, Inc. September 30, 2003.
- Godenhillem, Gustaf (1999). *Critical Success Factors in E-Commerce*. September 1999.
- Holland, Christopher P., and Ben Light (1999). *A Critical Success Factors Model for ERP Implementation*. wstrigel@spc.cs, IEEE Software Magazine, May/ June 1999.
- Hudson, K. M. (1999). *Outsourcing: A Decade of Deals*. Eastman & Kodak Inc. August 14, 1999.
- Hurley, Margaret, (2001). *IT outsourcing - managing the key asset*. MCB University Press. Information Management & Computer Security, Volume 9 Number 5, 2001, 243-249.
- Jitpaiboon, T. & Kalaian, S. A. (2005). *Analyzing the effect of top management support on IS performance across organizations and industries using hierarchical linear model*. Journal of International Technology and Information Management (JITIM). Volume 14 No. 2, 140-142.
- Juma'h, Ahmad H., and Douglas Wood (2000). *Outsourcing implications on companies' profitability and liquidity: a sample of UK companies*. Work Study Magazine, Volume 49 Number 7, 2000, 265-275.
- Kakabadse, Nada, Andrew Kakabadse (2000). *Critical review - Outsourcing: a paradigm shift*. MCB University Press. The Journal of Management Development, Volume 19 Number 8, 2000, pp. 670-728.
- Kelly, William P. (2003). *Can Business Survive a Major Technology Disruption: The Overlooked Achilles Heel?* A white paper provided by Transition Partners Co. 2003.
- Khalfan, Abdulwahed, and Tom G. Gough (2002). *Comparative analysis between the public and private sectors on the IS/IT outsourcing practices in a developing country: a field study*. MCB University Press. Logistics Information Management, Volume 15 Number 3, 2002, 212-222.
- Khandelwal, Vijay K., and Jeff R. Ferguson (1999). *Critical Success Factors (CSFs) and the Growth of IT in Selected Geographic Regions*. Proceedings of the 32nd Hawaii International Conference on System Sciences – 1999.
- Kleinhammer, Rod, Todd Nelsen, and Aj Warner (2003). *Balancing the Risks*. Darwin Magazine, June 2003.
- Koch, Christopher, (2003). *Offshore Outsourcing: The Politics*. CIO Magazine, September 01, 2003.
- Krahl, Robert W., (2003). *Outsourcing: The Decision Process*. A white paper provided by Transition Partners Co.

- Kumar, Shalabh (2003). *How Sustainable is the Cost Advantage of Offshore Outsourcing?* Global Management Consulting and Technology Services Company, September 2003.
- Lacity, M. and R. Hirschheim, (1993). *The information systems outsourcing bandwagon*. Sloan Management Review, Issue 35, 1, 1993, 73-86.
- Larson, Kent D. (1998). *The role of service level agreements in IT service delivery*. MCB University Press. Information Management & Computer Security, Volume 6 Number 3, 1998, 128-132.
- Leamus, Luis (2003). *Managing Risk and Security Across the Business and IT Portfolio*. META Group, Inc., June.
- LeClerc, Yves, (2003). *Outsourcing IT: Turning software into service*. Canadian Underwriter, June 2003, Volume 70, No. 6, 34.
- Lee, Martin (2002). *IT Professional Services: Lessons from the Marketplace*. Gartner Research, Note Number: ITSV-WW-EX-0123, 02 May 2002.
- Lee, Matthew K. O. (1996). *IT outsourcing contracts: practical issues for management*. MCB University Press. Industrial Management & Data Systems, Volume 96 Number 1, 1996, 15-20.
- Liola, Tara G., and Kathleen Kotwica (2002). *Service Level Agreements*. Executive Summaries, CIO Magazine, August 20, 2002.
- Love, James H., and Stephen Roper (2001). *Outsourcing in the innovation process: locational and strategic determinants*. Papers in Regional Science RSAI, April 11, 2001, 317-336.
- Martorelli, William (2003a). *Can Business Process Outsourcing Help Make IT Costs More Variable?* Giga Reports, June 30, 2003.
- Martorelli, William (2003b). *Common Pitfalls in Outsourcing Governance*. Giga Reports, September 25, 2003.
- Martorelli, William and Stephanie Moore (2003). *Outsourcing Business Processes and IT Services: A Best-of-Breed Approach Is Required*. Giga Research June 30, 2003.
- McNeill, Robert, Mike Dodd, and Julie Giera (2003). *Reducing the Cost of Outsourcing*. Giga Reports, March 6.
- McNurlin, Barbara C. and Ralph H. Sprague, Jr., (2003). *Information Systems Management in Practice*. Published by: Prentice Hall (S&M), NJ, 6<sup>th</sup> Edition, July 2003.
- Meckler, Harold, and Kenton Shultis (2003). *A Formula for Outsourcing Success*. Albany Molecular Research Inc., Contract Pharma. 2003.
- Merriman, Dan and Julie Giera (2002). *Managing Outsourcers Based on the Business Value They Enable*. Giga Reports, December 16, 2002.
- Narsu, Kiran (1999). *Remote Responsibilities*. CIO Magazine, the Resourceful 100, June 15, 1999.
- Overby, Christine S., John C. McCarthy, and Emily H. Boynton (2002). *US Outsourcing Decelerates*. Forrester Research, The Tech Strategy Report. March 2002.
- Overby, Stephanie (2003a). *When the Mission Changes IT Does Too*. CIO Magazine, the Resourceful 100, March 01, 2003.
- Overby, Stephanie (2003b). *Bringing IT Back Home*. CIO Magazine, the Resourceful 100, March 01, 2003.

- Overby, Stephanie (2003c). *Walk Like an Outsourcer*. CIO Magazine, the Resourceful 100, March 01, 2003.
- Overby, Stephanie (2003d). *The Vendor Strikes Back*. CIO Magazine, the Resourceful 100, March 01, 2003.
- Overby, Stephanie (2003e). *In or Out?* CIO Magazine, the Resourceful 100, March 01, 2003.
- Parthenios, Amalia D. (2001). *Living With a Perfect Stranger*. Telephony Magazine, Vol. 241, Issue 14, October 01, 2001.
- Peynot, Richard. (2003), *When European Companies Appoint Make-Or-Buy Managers*. Giga Reports, June 23, 2003.
- Phillips Jr., John T., (1992). *Outsourcing High Tech Services*. Records Management Quarterly, April 1992, Vol. 26, Issue 2.
- Pierre, Dominique, Gianvero Durly, and Manuel Jouachim, (2002). *Managed Services*. Alcatel Telecommunications Review - 4th Quarter 2002.
- Pring, Ben (2002). *The Varied Industry Perspectives of Outsourcing*. Gartner Inc., Note Number: LE-18-0527, 04 September 2002.
- Rockart, J. F. (1979). *Chief Executives Define Their Own Data Needs*. Harvard Business Review, Volume 2, 81-93.
- Ross, Christine F., Bobby Cameron, Elizabeth Schneider, Christopher Dawe, and Emily Jastrzemski (2001b). *Picking the Right ASP*. The Forrester Report May 2001.
- Ross, Christine F., Tom Pohlmann, Marli Porth, and Ryan Hudson (2002c). *Services Market Sizing Through 2007*. Forrester Research, the Tech Strategy Report. December 2002.
- Sarissamlis, Stratos X. (2002). *Managing Outsourcing Service-Level Agreements: Part 1*, Service Management Strategies, Meta Group Reports, 20 June 2002.
- Schmelz, Ryan P., and Dennis R. Conley (2003). *Managing Information Technology Costs: Effective Disciplines and Processes*. A white paper provided by Transition Partners Co. 2003.
- Seabrook, David, Roger Arthur Cox, and Ian Marriott (2003). *Trust and Control: The Key to Optimal Outsourcing Relationships*. Gartner Inc. Reports, Note Number: R-19-7677, 9 April 2003.
- Sondergaard, Peter (2003). *Gartner Predicts: The Future of IT*. Pacific Crest Keynote Presentation. Gartner Research Group, 2003.
- Strande, Jon (2003). *Get Creative Outsourcing*. Darwin Magazine, July 2003.
- Symons, Craig (2003). *Taking the 'I' Out of IT*. Planning Assumptions, Giga Research, Forrester Research, Inc. September 19, 2003.
- Udo, Godwin G. (2000). *Using analytic hierarchy process to analyze the information technology outsourcing decision*. MCB University Press. Industrial Management & Data Systems, Volume 100 Number 9, 2000, 421-429.
- Veal III, Ruffin (2001). *Private Lessons for the Public Sector*. CIO Magazine, the Resourceful 100, May 15, 2001.
- Yalloyf, Jesse, and Curt Morgan (2003). *Beyond Performance Standards: How to Get the Most From Your Outsourcing Relationship*. Benefits Quarterly Magazine, 3rd Quarter 2003.