

IT outsourcing as an innovative strategy for economic advancement: lessons from Malaysia

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Abstract—IT outsourcing is seen as an innovative strategy for organizations to leverage on its several major benefits. The motivations for ITO can be in forms of technological, economic and business benefits. Moreover, ITO generates income for the nation economy. This is possible in onshore and offshore outsourcing activities. This study explores the literature and our previous studies on ITO in banking and public healthcare sector in Malaysia. We aim to answer the motivations for, risks and challenges in and how ITO contributes towards nations' economies. The study finds that ITO benefits can be mainly categorized into strategic, economic or business and technological benefits. Risks and challenges faced by the organizations under studies are many which can be grouped into financial, information, technical, human resource, project management, risk management and relationship management. Developing countries can tap on her cost effective and innovative proposals to attract potential clients to outsource their IT services and functions to them.

Keywords—IT outsourcing, innovation, strategy, offshoring, Malaysia

I. INTRODUCTION

IT outsourcing (ITO) research has been done since 1989. Though some practice of facilities management has been found in the 1960s, ITO has only become famous after the Eastman Kodak "Kodak effect". It has been suggested that ITO is a multi-billion dollar industry. Malaysia has seen its potential and began promoting her as a hub. International Data Corporation noted that the actual global ITO spending was USD40 billion in 1996 and reached USD71 billion in 2003, representing a growth rate of 12.2% per annum [16]. Dataquest reported that the ITO industry revenue was USD194 billion in 1999 and grew to USD531 billion in 2002 [31]. In addition, it is also estimated that USD500 billion or RM1.9 trillion global industries will be created by 2008 [31]. The local ITO market in Malaysia was expected to grow by 17.7% to USD107.80 million (RM410 million) in 2003, from USD92 million a year earlier. This was because Malaysia was seen as an attractive location for offshore outsourcing contracts due to our strong infrastructure and our multilingual skills [17]. According to Outsourcing Malaysia, Malaysian outsourcing industry is predicted to be worth \$1.9 billion by 2013 .

In the global scene, Malaysia is ranked as the third most attractive destination for Shares Services and Outsourcing (SSO) closing behind on India and China, who are the world's premier outsourcing spots, according to the latest study reports by AT Kearny, a management consultancy. Establishing a presence, the recent World Congress on Information Technology (W.C.I.T) 2006 held in Texas, USA, saw Malaysian Prime Minister Dato' Seri Abdullah Ahmad Badawi, in his keynote addresses the launch of 'Outsourcing Malaysia'. He further expressed the motivation as an initiative to pool the resources and expertise of all the players within the Malaysian SSO industry to promote Malaysia's global visibility in the outsourcing industry [1].

With the advent of ITO practices, organizations have become more demanding on benefits of ITO. In addition, 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. They often carry out feasibility studies before engaging in ITO decisions. Once, a contract is awarded to the selected service provider, more risks are attached to its implementations. The challenges and difficulties can vary between ITO types and arrangements.

This study analyses previous researches findings in Malaysia as well as the researchers' studies of ITO in Malaysia banking and public healthcare sectors.

- a) Why organizations adopt IT outsourcing?
- b) What are the risks and challenges of IT outsourcing for Muslim developing countries?
- c) How IT outsourcing contributes towards economic growth?

The paper is organized as follows. It begins with introduction and literature review. Then, we describe on the methodology used in the study. In part four, the findings will be described and discussed in detail. Finally, the paper ends with a conclusion and future work.

II. LITERATURE REVIEW

In this study, we refer to the definition of ITO articulated by Dibbern, et al. [10] which describes it as “the organizational arrangement instituted for obtaining IT services and the management of resources and activities required for producing these services”. IT services refer to the manner in which IT products are delivered and the provision of IT functions.

Generally, ITO researchers commonly cited three strategies in attaining optimal IT outsourcing success even though the focus may vary from one company to the next [24]. It is observed that taking benefits into considerations during the implementation of outsourcing will increase the possibility of success. ITO is motivated by the promise of strategic, economic and technological benefits [14]. Strategic benefit is defined as ‘the ability of a firm to focus on its core business by outsourcing routine IT activities’ [23]. Economic benefit is ‘the ability of a firm to use expertise and economies of scale in human and technological resources of the service provider and to manage its cost structure through unambiguous contractual arrangement’ [18]. Finally, technological benefit is referred to as ‘the ability of a firm to gain access to leading-edge IT and to avoid the risk of technological obsolescence that results from dynamic changes in IT’ [23].

A. Reasons for IT Outsourcing

ITO is a practice of transferring IT assets, leases, staff, and management responsibility for delivery of services from internal IT functions to third-party vendors [21].

Although companies outsource for many reasons, ITO is growing due to two primary phenomena [22]. First, interest in ITO is largely a consequence of a shift in business strategy. Many companies have recently abandoned their diversification strategies to focus on core competencies. Senior executives have come to believe that the most important sustainable competitive advantage by concentrating on what an organization does better than anyone else while outsourcing the rest. Second, the growth in ITO is a function of the value delivered by IS. In many companies, senior executives view IS as an overhead which is an essential cost but one that is to be minimized nevertheless.

Many companies outsource their IT functions because of cost, customer service, management, IT performance, IT resources and corporate strategy [7, 27]. Meanwhile, Lacity and Hirschheim [24] assert that the ITO phenomenon evolves from two trends. Firstly, IT is evolving into utility thus it is easy to obtain good services from specialized vendors and moreover prices are lower due to the economy of scales. Secondly, there is a bandwagon effect on outsourcing due to the fact of early success by “Kodak Effect” [22]. Moreover, many IT firms around the globe have setup facilities to offer a broad range of ITO services ranging from IT infrastructure, data center, helpdesk, web hosting, application development and management. Forrester Research Inc. [7] has estimated that the ITO business is worth about USD4 billion in year 2000 and will grow to USD136 billion and provide 3.3 million jobs by year 2015.

McCarthy [26] has pointed primary reasons for companies to consider outsourcing. He described them as follows:-

- Outsourcing allows companies to refocus their resources on their core business.
- Corporations can buy technology from a vendor that would be expensive for them to replicate internally.
- Outsourcing lets companies re-examine their benefit plans, make them more efficient, and save time and money while improving efficiencies.
- Companies outsource to improve the benefit plan service level to their employees by making the information more consistent and more reliable.
- A final possible reason is to reduce costs, certainly over longer term.

B. Risks and challenges in IT outsourcing

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. IS offshore outsourcing is more complex than onshore as some political, social and cultural issues are invoked along with techno-commercial and personnel problems. IT 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 ITO decisions have been analyzed and issues raised in IS/IT outsourcing process are synthesized [15].

Many studies highlight that ITO involves complex arrangements spanning more than 10 years for long-term contract with different types of outsourcing arrangements [2, 5, 10, 11, 29, 32]. Hence, many failures are reported as a result. Thus, ITO decisions and implementations entail any possible risk element and challenges that both service receiver and provider must acknowledge and manage well.

Earl [11] 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 ITO. Emphasizing careful analyses of risk factors and making conscious decision the adverse effects IT outsourcing can be minimized. Bhattacharya et al. [6] 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.

C. IT outsourcing as an economic source and hub

Malaysia ITO practices have been around after the Kodak effect but were not widely publicized until massive public sector computerization projects and automation of financial

systems after Asian financial crisis in 1997. Thus, many service providers, including world-class firms, providing ITO business models can be found operating in Malaysia. ITO models evolve from traditional to innovation phase in 2010 onwards. One of the innovative models in Malaysia is the global offshore service delivery model which is based on four pillars, namely: Experienced Leadership; Global Best Practice; Human Capital and Domain Knowledge. To be able to compete globally, Malaysia has equipped its companies with higher capabilities and competencies via international certifications and continuous skills developments. Several advantages proposed by Malaysia include: economic stability, political stability, multi-lingual, world-class infrastructure, affordable lifestyle, value propositions and many others [1]. Malaysia is ranked third as outsourcing hub in Asia by AT Kearney. The business generated by outsourcing help contributing towards Malaysia economic growth.

Furthermore, offshored IT service work is a global issue impacting firms and nation-states around the world. The magnitude of change introduced by IT offshoring in the location of where and how work is performed brings with it significant economic consequences in terms of (1) wages received by workers and multiplier effects within countries where funds are spent and national taxes collected, (2) impact on firms' profitability, efficiency, and service quality, and, more broadly (3) country level economic welfare and world standing. These implications are illustrated in countries such as India that has been a major recipient of offshored service works in the IT industry and whose economic fortunes have changed substantially as a result. Thus, offshoring of work affects firms and the nations in which these firms operate [28].

III. METHODOLOGY

The study employed qualitative content analysis from literature. In addition, we also report on the researchers' doctoral and other relevant ITO studies' findings since 2000 until to date. The author's doctoral studies were based on multiple case studies in Malaysian banking and public healthcare sectors. The analysis methods used in the doctoral studies were thematic and grounded theory analyses. Other studies by the researchers involved supply-side perspectives whereby we interviewed a few IT service provider managers and directors to gain insights from their experience in ITO practices in Malaysia. One study investigated on ITO in a large petroleum company in Malaysia. In addition, we also analyze the findings from other Malaysian researchers relevant to the topic found in the literature.

IV. FINDINGS

This section describes and discusses the findings from the study. We deal with them in three subsections according to the research questions.

A. Key motivations for IT outsourcing

The motivations for ITO could be attributed to many reasons suitable for the organizations at the time. The main reasons are tabulated in the Table 1 below.

TABLE I. MOTIVATIONS FOR IT OUTSOURCING IN MALAYSIA

No	Reasons	Author(s)
1	Cost reduction and savings, central bank initiative, computerization of banking systems, strategic IT plan, upgrade systems, centralized system and banks merger.	Ahlan [2, 4]
2	Cost effectiveness and competitiveness by focusing on its core business operations while allowing a third party to focus on providing supports for IT.	Ahlan & Shittu [3]
3	Focus on core competencies, turning non-profit activities into profit-generating activities, central bank initiative and cost reduction.	Suhaimi et al. [29]
4	Value propositions, cost savings, global service delivery level, offshore clients.	Ahlan et al. [1]
5	Lack of IT expertise, many IT projects, focus on core business, computerization an upgrade of current systems.	Arshad & Ahlan [5], Arshad [32]

The above reasons fit some of the points mentioned by McCarthy [26] which are:

- Outsourcing allows companies to refocus their resources on their core business.
- Corporations can buy technology from a vendor that would be expensive for them to replicate internally.
- Outsourcing lets companies re-examine their benefit plans, make them more efficient, and save time and money while improving efficiencies.
- Companies outsource to improve the benefit plan service level to their employees by making the information more consistent and more reliable.
- A final possible reason is to reduce costs, certainly over longer term.

In the case of public healthcare sector, it concurs with the assertions by Lacity and Wilcocks [22] that ITO is growing due two primary phenomena. First, interest in ITO is largely a consequence of a shift in business strategy. Many companies have recently abandoned their diversification strategies to focus on core competencies. Senior executives have come to believe that the most important sustainable competitive advantage by concentrating on what an organization does better than anyone else while outsourcing the rest. Second, the growth in outsourcing is a function of the vague value delivered by Information Systems (IS). In many companies, senior executives view IS as an overhead which is an essential cost but one that is to be minimized nevertheless.

The potential for cost savings has led many senior managers to enter into various types of contracts with ITO service providers [26]. Contrary to this, findings from a study conducted by Cullen et al. [8] suggested amongst others, that savings were not significantly associated with satisfaction with outsourcing for either larger or smaller firms. The main reason for outsourcing was to access better or acquire more skills.

Another driving force for ITO is management's perception that by surrendering control of company's IS functions to external service providers, management can better focus on its core business [14]. ITO can quickly bridge the gap of IS inadequacies since the perennial slogan of computing is faster, better and cheaper.

B. Challenges in IT outsourcing

Financial and banking sectors involve complex diversified organizations and fast paced environment. Therefore, ITO engagements face more risks and challenges based on the nature of the organizations as well as the ITO arrangements. Ahlan [2] categorizes his findings into three main themes: strategy, structure and technology. Evidence from the findings suggests these themes are factors that have impact on the IT system implementations in the Malaysian banks. The nature and interaction of these factors were found to affect the IT system implementations in the way that would facilitate or impede the implementation process.

Furthermore, Suhaimi et al. [29] find that managing the partnership and handling the staff transition and motivation are the main risks and challenges in one large bank ITO arrangement. There was a concern whether the strategy brings the desired results. These include better sales and marketing functions, better service, superior processing capability, deriving income stream from non-bank activities and the desired 20 per cent reduction in IS cost. The effect of the ITO on human resource management was also a big worry among staff who was involved with the transfers or redundancies.

Arshad [32] interviewed respondents who were directly involved in ITO in public healthcare agencies. Among the risks and challenges mentioned by them are:

- Difficult to organize and manage service receiver’s team in a meeting due to each staff’s commitment with his own daily routines and schedules.
- Not enough competent and capable IT resources in the agencies.
- Had to rely on service providers’ capabilities and competences mostly.
- Changing of service receiver chairpersons at Implementation committee level to monitor and ensure the project was carried out as planned.
- One project did not follow tender process since it was directly negotiated.
- A challenge to identify a suitable monitoring team at headquarters level to explain the importance of the system to staff or users and to identify any overlap systems with proposed system that produces redundant information.
- There was a concern on the readiness of the division to set up a technical team to take over responsibilities from service provider after handover so that the system is fully optimized in terms of usage and maintenance.
- Short project duration was a big limitation for matters raised in meetings such as interface with other systems, local content, finance module and others that could not be implemented and satisfied.
- Inadequate competent and capable resources from SR and SP.
- The original specification was not adequate and therefore resulted in variation order which increased the scope and cost.

- Users were preoccupied with prioritized daily routines and schedules. This caused delays in User requirement specification exercise and endorsements from users.
- SR technical team did not involve with users’ business processes and workflows in the beginning.

In the petroleum industry, the major challenges posed in outsourcing were that of refocusing, reanalyzing, re-engineering and re-assessing. These challenges were recently pushed both by the oil business executives and technology executives in their struggle in attempting to implement increasingly complex systems in the face of rapid change in business and technology [3].

TABLE II. RISKS AND CHALLENGES FOR IT OUTSOURCING FROM MALAYSIA LITERATURE

No	Challenges	Author(s)
1	Inadequate technology expertise and lack of proper top level strategy to guide the implementation. No clear and long term IT strategy. Absence of implementation strategy. Lack of authority in strategy formulation, poorly defined structure and IT leadership had little influence in top level decisions. Inadequate structure in the IT unit resulted in the lack of system control. Top management not well exposed to viable technology and not well guided to formulate long term IT strategy. IT center was not mandated to dictate the IT requirements of the bank. Perceived as highly risking its technology dependency by totally outsourcing all areas of its IT functions and IS management.	Ahlan [2, 4]
2	Refocusing, reanalyzing, re-engineering and re-assessing. Human resource issues.	Ahlan & Shittu [3]
3	Managing the partnership and handling the staff transition and motivation. Whether the strategy brings the desired results. These include better sales and marketing functions, better service, superior processing capability, deriving income stream from non-bank activities and the desired 20 per cent reduction in IS cost.	Suhaimi et al. [29]
4	Mostly depend on service providers expertise, clients’ teams committed with daily jobs, problems in technical proposal, service providers not up to expectations, lack of IT staff in clients’ teams, project delays, changing of both providers and clients’ staff during projects’ life, short project duration was a big limitation for matters raised in meetings, projects start late due to formal contract signing.	Arshad & Ahlan [5], Arshad [32]

One key activity in implementing ITO is managing the resulting relationship [29, 32]. One key aspects of ITO implementation is building and structuring the ITO relationship which is constructed around two main elements:

- (1) the formal contract; and
- (2) the psychological contract [10].

These elements lead to anticipation and expectations that in turn impact how the parties interact with each other. The term “partnering” is generally used to describe a trust-based relationship that parties attempt to engender, but does not describe the specific relationship structure. According to Cullen et al. [9], there are four types of commercial relationship that summarize the high-level nature of relationship structure: arms-length, value-add, co-sourced and equity.

Another issue pertinent to the implementation of ITO is the issue of human resource management. The management of service receiver should also consider the long-term effect of the outsourcing decision on its own staff development, especially in regards to IS management. There is the issue of moral hazard where the staff of service receiver may over-rely on service provider even for small problems which can be solved rather easily. This may lead to “spoon fed” situation when it comes to IS management. Over-reliance on outside assistance may also kill the creativity of end-users, especially in systems development.

Another challenging point is related to the staff transition. It is imperative for service receiver to monitor the employee competency and motivation. No matter how best a system is, if employees are not motivated the management is unlikely to optimize its organizational effectiveness [29].

C. Contributions of IT outsourcing to the economy

In our studies and literature, ITO proves to bring in money to any country providing the services. Besides the domestic economy generated from ITO, offshoring also creates income from outside the country. Offshoring is defined as locating an activity to a wholly owned company or an independent service provider in another, usually a low cost country [25]. Offshoring can occur through varied mechanisms including (a) creating a subsidiary in another country and moving work between organizational units, (b) contracting directly with individual workers in another country, (c) contracting with a service firm in another country, (d) contracting with a multinational organization having offices in the offshoring firm’s home country with sources of labors across nations, and (e) acquiring a subsidiary in another country.

It is important to point out that offshoring can refer to a very wide range of production and service delivery activities that cross borders. These activities may range from the offshoring of an entire IT department and function to offshoring more routine activities such as data entry and call centers. This range of activities may vary greatly in asset specificity and related operational and managerial requirements.

However, such activities hold in common the extensive inclusion of IT such as computer hardware and software as the target of production (for example new systems, maintenance of systems), as the means of production (for example tools include development suites and communication media), and as the focus of service (for example hardware or software troubleshooting). As such, this set of activities may be viewed as having required technical skills, a particularly fast rate of technology change, and a relationship with information economics (e.g., issues of intellectual property preservation and product valuation). Dynamics affecting the decision making and execution of offshoring in this domain can be expected to have distinct if not unique properties relative to other sorts of offshored work [28].

Offshoring creates value for both firms and nations [12, 13] and has flourished as an activity out of initiatives taken at both firm and country levels. Firms exploited low-cost solutions in the wake of the dot.com bust, while countries invested in human capital and infrastructure to facilitate offshoring practice [25]. Some nations are seen competing to

serve as hosts for offshoring ventures and have already demonstrated superior ability in the IT offshoring domain. At the same time, certain home country firms are the largest consumers of offshoring work. This competition – and the industrial location decisions that follow – has direct impacts on economic and social welfare, besides nations’ international rankings on various dimensions such as market size, level of infrastructure development and human capital. These rankings, in turn, influence the attractiveness of offshoring locations, creating a dynamic process of global changes in production. Thus is observed an interaction of home country firms’ propensity to offshore projects and host nations propensity to attract offshore work [1, 28].

In short, we feel that it is important for head government, ITO service providers and researchers to understand the impact of the above-mentioned interaction on the respective propensities of home nation firms to go for offshoring and host nations to attract offshore projects.

V. CONCLUSION AND IMPLICATION

This paper has shown that ITO is an important innovative strategy for organizations to achieve several benefits such as cost savings, access to superior external competence and capabilities as well as latest and advanced technologies and focus on core businesses. While ITO arrangements vary depending on the nature and type of organizations and project specifications, risks and challenges involved in any ITO cannot be overlooked. Studies have shown that many ITO met failures due to many reasons. A careful due diligence, feasibility study and risk management technique can help reduce any possible risks and challenges.

ITO is a trillion dollar industry. It can be seen that organizations are tapping on the best deal from ITO especially on cost savings and superior services. Countries which can provide added value services at affordable costs will win ITO projects. While Malaysia has been trying to promote itself as an outsourcing hub in Southeast Asia, any country which can compete to provide better deals compared to her competitors will win the projects.

The implication for the next decade is for competing countries to prepare themselves with more innovative ITO packages to acknowledge the advances in information and communication technology. Innovative researches need to be carried out to develop a creative outsourcing models and framework of deliveries in this century.

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