A Review on IT Outsourcing Approach and a Proposed IT Outsourcing Model for Malaysian SMEs in e-Business Adoption

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***Abstract*: Information Technology (IT) outsourcing has been identified as one of potential business services in the Malaysia Economic Transformation Plan. In relation to it, this research aims to investigate the requirements and key success factors of deploying IT outsourcing services among the Malaysian SMEs for e-Business needs. This research will also explore the potential and implication of implementing the IT outsourcing in Malaysia particularly among the SMEs. This paper discusses the literature review on IT outsourcing concept, practices and available models to identify the key success factors and research gaps in this area. The review also includes the e-Business development in Malaysia. This research uses quantitative approach for data collection and hypothesis testing. Outcomes from this research will be a proposed e-Business outsourcing model targeted for SMEs. However, this paper will only discuss findings from the literature review.**

Keywords-IT outsourcing, e-Business, SMEs

I. INTRODUCTION

Business services are one of identified potential area in Malaysia especially in providing a world class IT sourcing services[1]. Generally, the IT sourcing practices are being adopted mostly by the multi-nasional and large local companies [2]. However, for SMEs the practices are still limited to general office automation and non-core processes[2]. As business situation become more dynamic and moving towards e-Business, it creates needs for SMEs to enhance their competitiveness by extending their services such as by having data farm, storage, front and back-end applications. In line with the Malaysia Economic Transformation Plan, SMEs should reach customers globally through e-business [1]. However, it is reported that currently only 20% from 700,000 SMEs have websites[3]. Due to SMEs constraints such as lack of awareness and scarce resources in manpower and capital to develop IT applications[3]; becoming a full-fledged e-business is not their top priority. However, we believe with the right approach, SMEs can move forward and become competitive globally. Therefore, IT sourcing could be the answer to this problem.

IT services form a great part of the organization's strategy especially in developing the competitive advantage and supporting business operations, thus, any deliberation on sourcing the IT services will be part of strategic management elements [4]. In current practices, it can be seen that IT outsourcing was extended to abroad to get cheaper labour and globalization acknowledgement for the companies. Many corporations from all over the world such as banks are progressively using the method of third parties to perform services and activities. However, there are some issues and challenges in the implementation such as difficulties to control and maintain its network of communications inside the organization itself [5, 6]. This paper is organized as follows: First, we clarify the research in general. In the second section, we present an overview for IT outsourcing and IT outsourcing practices among the SMEs and the possibility of having both e-Business and IT outsourcing for initiating changes in current business processes and identifying IT outsourcing benefits, challenges and issues and IT outsourcing existing models. The third section presents the proposed model and in the fourth section, we present the conclusion.

II. IT OUTSOURCING: AN OVERVIEW

IT outsourcing is defined as "*the use of an external provider of goods or services instead of having recourse to internal resources to provide the same goods or services*"[7]. It is also described as a decision-making process that the management need to decide whether they would keep a specific activity in-house or buy it from an external subcontractor [8]. Outsourcing is supposed to be a part of an organizations overall strategy. It requires an organization to decide either to use or to buy one or a few activities from an external provider. The provider could be located within the same country (local provider) or somewhere else in the world (international provider) [9]. A few terms were referred to outsourcing implementation. For instance, it can be in a form of passing ownership that have control of functions that previously carry out in-house to an external contractor[10]. Another one is off-shoring, that can be

described as movement of business activities to a provider located in another country [13, 14].

A series of internal discussions and arguments normally will take place before any organization consider to outsource their IT projects and services [11]. As such, it is noteworthy to also mention that the order of arguments towards the motivations of IT outsourcing may vary depending on the service recipients. One of the arguments is to have business and IT strategies to focus on central competencies and decrement of the total cost of ownership of the IT services [12]. Another argument would be the difficulty to recruit qualified IT staff [11].

Among the motivations for organizations to opt for IT outsourcing are cost reduction, focus on core competencies, access certain level of expertise or skills, etc. The rest of motivations are summarized in Table 1. It can be seen that SMEs may have the similar motivations that could encourage them to consider IT outsourcing initiatives, especially for their e-Business transformation.

Table 1: Motivations for IT outsourcing

Motivation	Description
Cost reduction	A client organization's need or desire to use outsourcing to reduce or control IS costs
Focus on core capabilities	A client organization's desire or need to outsource in order to focus on its core capabilities
Access to expertise/skills	A client organization's desire or need to access supplier(s) skills/expertise
Improve business/ process Performance	A client organization's desire or need to engage a supplier to help improve a client's business, processes, or capabilities
Technical reasons	A client organization's desire or need to gain access to leading edge technology through outsourcing
Flexibility	The ability to adapt to change
Political reasons	A client stakeholder's desire or need to use an outsourcing decision to promote personal agendas such as eliminating a burdensome function, enhancing their career, or maximizing personal financial benefits
Change catalyst	A client organization's desire or need to use outsourcing to bring about large scale changes in the Organization
Commercial exploitation	A client organization's desire or need to partner with a supplier to commercially exploit existing client assets or form a new enterprise
Scalability	A client organization's desire or need to outsource to be able to scale the volume of IS services based on Demand
Access to global markets	A client organization's desire or need to gain access to global markets by outsourcing to suppliers in those markets
Alignment of IS and business strategy	The fit or congruence between a firm's business strategy (conceptualized as defenders, prospectors, analyzers) and its outsourcing strategy (e.g., arm's length, independent, and embedded)

A. IT Outsourcing practices for SMEs

Most of previous studies reported on IT outsourcing development and implementation for large (multinational) organizations [12]. For medium-sized enterprises, commonly, they are involved in open innovation more significantly than smaller enterprises. This is associated with higher discarding of resources and scale to establish a wider range of innovation activities. Furthermore, several SMEs try to take advantage from the knowledge and initiatives of their workers for technology operations[13].

For SMEs in Malaysia, it is observed that they have quite similar practices to the larger organizations coming from the same field, however, the scope of practices are difference such as type of contract, penalty clauses and termination clauses. For large organizations, they are having contract of services to secure the outsourcing services but the SMEs are seemed taking lightly the value of contractual requirements [14]. In Malaysian public sector for mass-modernization and automation projects, IT outsourcing can be considered as part of project requirements. This followed by a few world incidents such as in 1997 Asia economic crisis where all financial institutions were encouraged to merge and improve their businesses by adopting information and communication technology to assist in reducing costs and improving services. While, in private sectors which more concern on cost factor and technology advantage have also begun to adopt IT outsourcing [20].

B. IT Outsourcing Benefits

The benefits of IT outsourcing can be categorized in six strategic focus, namely *financial position improvement*, *technology catalyst*, *core competency*, *business innovation*, *business transition* and *new market* [21,22].

These expected benefits could be gained separately or in combination throughout the IT outsourcing life cycle. The descriptions are provided below:

- *Financial position improvement*- overall cost in executing business functions can be reduced thus help to improve the financial position of the company.
- *Technology catalyst*- accelerate the adoption of new technology for the company through external expertise

- *Core competence*– develops skills among internal staff to focus on given tasks and to be more strategic to offer better value.
- *Business innovation* - working toward business transformation and improving technology and skills to achieve competitive advantage.
- *Business transition*- employing vendors to assist with key changes in the current business processes.
- *New market development*- identifies new sales channels to extend company's products or services to a wider marketplace.

These benefits could be seen as key reasons that lead to large IT outsourcing deals being encouraged especially for SMEs [15].

Furthermore, in the developing countries such as Taiwan, the awareness and adoption of e-Business among the SMEs has been motivated by market demand more than in the west countries such as USA and Japan [16]. It can be observed that e-Business technologies adapted by the SMEs can be considered as part of their strategic planning to close the gaps with the big companies or having a competitive advantage over them. Another shared driver for western and developing countries is the need to exchange knowledge and information between the SMEs and their partners locally or all over the word in an electronic platform [17]. However, there is still lack of studies that discussing e-Business and the possibility of applying the IT outsourcing approach particularly in Malaysia, thus, gives an opportunity for this research to explore this area further.

C. IT Outsourcing challenges and issues

From the reviews, we have also identified a few risks that had been highlighted in the previous studies. Radu and Ramona [18] reported that among the main risks are the increment in dependence level on suppliers and loss of knowledge and know-how due to no knowledge transfer from service provider to service recipients. Whereas, Balogun [19] identified the highest risk in IT outsourcing is confidentiality risk. Table 2 summarizes other reported risks from previous studies.

Table 2: Risks of IT outsourcing

Risk	Description	Author
Confidentiality risks	The valuable information of the organization, such as strategic plans, competitive advantages and other important records.	[18]
loss of knowledge and know-how	IT staff may be transferred to the provider company. Thus, their know-how and knowledge have also transferred to the client company and it required a lot of effort to acquire them again. This may push the companies to keep their IT services in their own hands.	[20]
Increased dependency on suppliers	The movement of contracting IT services to third party vendors, giving all the responsibilities of the service delivery to being handed by the service provider. This is a big step for companies, as they have to wait or depend on the service provider.	[21], [19]
Higher costs	Service providers concerned mainly in making money. Thus, contracting to third party vendors may increase costs. Contract management is considered a vital need for IT outsourcing.	[19]
Difficulty in selecting the right service provider	The selection of a service provider should base on IT needs, outsourcing goals and opportunities. This places the client company in a difficult positionto forecast of future information as it may affect the selection process.	[18]

In e-Business context, previous studies reported that barriers in adopting e-business technologies among SMEs especially among the suppliers and buyers may differ. For instance, Commission [22] stated that the barriers for e-business adoption between suppliers and buyers have not been untangled yet in terms of cost and inactivity. Thus, the IT outsourcing approach could assist the companies to have systems that can help to streamline the processes among the suppliers and buyers.

D. IT Outsourcing existing models

A few IT outsourcing models such as *Relationship and Contract* dimension model [23], *Capability and Outsourcing performance model* [24] *Strategic Evaluation and Outsourcing Performance model* [25] were reviewed, and the components and key success factors were identified.

Results from this comparison of the previous models show that; model 1 focuses on two dimensions which are relationship and contract, and it used trust and commitment as important determinants for measuring the relationship dimension. This model also involves appropriate number of factors for determining each dimension. While, this model does not take account of capability dimension, further measured technological benefits only without measuring financial and strategic benefits of IT outsourcing success.

Model 2 also studied two main dimensions which are relationship and capability dimensions. Furthermore, this model measured the relationship management in a general manner without specifying any factors and only uses general items such as considering the organization's core competencies to measure the capability evaluation.

Finally, model 3 covered three determinants, *strategic evaluation*, *contract*, and *relationship*. In this model,

contract completeness is used as a main dimension to measure IT outsourcing performance. Two determinants, which are trust and commitment, were used to measure relationship and evaluate the IT outsourcing capability in general without any specific determinants or needs.

Table 3 summarized the comparison of the three models as follow:

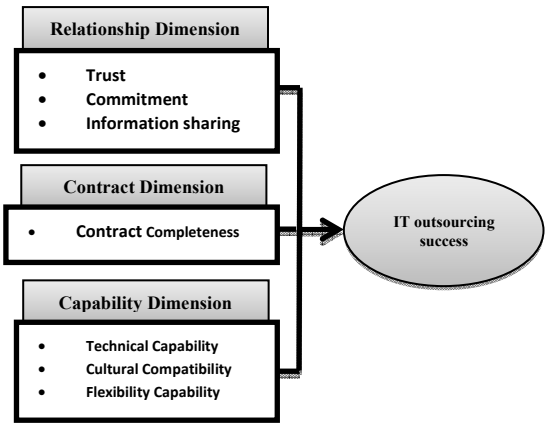
Table 3: Comparison of existing models

Model Name	Origin	Method/ Simple S.	Factors	Measures	Strength	Weaknesses	Author
(1) Relationship and Contract dimension model	China	Interview (2 case study)	Trust, commitment, knowledge sharing, contract complexity and contract management	IT outsourcing success	-focus on two dimensions: relationship and contract - measuring trust and commitment as an important determinants of relationship dimension - appropriate number of factors	-Studied relationship and contract dimension and ignored capability dimension - only measured technological benefits without measuring financial and strategic benefits of IT outsourcing success - limited to two case studies in China and Hong Kong	[26]
(2) Capability and Outsourcing performance model	United states	Survey (119)	Relationship management, capability evaluation and capability loss	IT outsourcing performance	- study two main dimensions: relationship and capability dimensions - appropriate sample size	- Ignored the contractual dimension - measuring relationship management in general without specifying any factors to measure it - use general items to measure capability evaluation instead of measuring specific determinants -limited number of factors to measure performance	[27]
(3) Strategic Evaluation and Outsourcing Performance model	United states	Survey (131)	Strategic evaluation, contract completeness, commitment and cooperation	IT outsourcing performance	-measuring three categories: strategic evaluation, contract, relationship - measuring contract completeness as a main dimension to achieve performance - appropriate sample size	- using only two determinants to measure relationship - study capability evaluation in general with ignore many specific determinants for it	[25]

III. THE PROPOSED MODEL

Based on the comparative study, we have identified the influenced factors, measures and roles of models as well as their advantages and disadvantages. This includes the issues that each model are focusing on and the purpose of each models. The analysis showed the previous models covered one or two dimensions such as relationship or contract dimension only. However, the gaps showed in the literature highlighted the importance to include other dimensions such as capability or to integrate the identified dimensions together to increase the usability and the successful of IT outsourcing arrangement. Therefore, this study explored the possibility of having these three dimensions together, to provide a better solution for the SMEs. Figure 1 shows the proposed model as follows:

Figure 1: The proposed model



In this research, both quantitative and qualitative approaches are involved within this research by using interview and structured questionnaire to provide breadth and depth to this research especially during the data collection process [28]. Qualitative research approach was chosen for this study to identify IT outsourcing key success factors, services and potentials among Malaysian SMEs in-depth. This required a series of interviews sessions and observation of SMEs to investigate their common practices with regards to IT sourcing. For quantitative approach, a survey technique was used to have more feedbacks that can complement the qualitative data to this research. SMEs in Malaysia were the sample populations in this research which consists of 113 enterprises. The outcome of this study is an integrated IT outsourcing framework for Malaysian SMEs their e-Business development.

A set of hypotheses was constructed based on the conceptual model and to be tested in the questionnaire. The results will be used to identify the right components and success factors for IT outsourcing implementation.

Table 4: Summary of Hypotheses

	Hypothesis
Hypothesis 1	Trust positively influences the level of IT outsourcing success
Hypothesis 2	commitment positively influence the level of IT outsourcing success
Hypothesis 3	Information sharing is positively influence the degree of IT outsourcing success
Hypothesis 4	contractual completeness is positively influence the level of IT outsourcing success
Hypothesis 5	Technological capability is positively influence the level of IT outsourcing success.
Hypothesis 6	Cultural compatibility is positively influence the level of IT outsourcing success.
Hypothesis 7	Flexibility capability is positively influence the level of IT outsourcing success.

IV. CONCLUSION

IT outsourcing could bring benefits to enterprises especially for the SMEs due to their limitation such as lack of technical knowledge, IT infrastructure, skills and low IT investment. On the other hand, there are some issues and risks that must be considered when applying IT outsourcing approach. The implementation of IT outsourcing and its processes may lead to main changes in the current business operation and may contribute to their competitive advantages. These changes could provide opportunities or may be new threats to the SME. It becomes crucial for SMEs to know and to have a proper framework that could assist them in adopting the IT outsourcing approach. Thus, this study investigates the current IT outsourcing practices among the SMEs in Malaysia to see the possibility to implement the same approach to accelerate the e-Business adoption among the Malaysian SMEs.

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