VOL. 10, NO. 23, DECEMBER 2015 ISSN 1819-6608
ARPN Journal of Engineering and Applied Sciences


www.arpnjournals.com

A COMPARATIVE STUDY ON IT OUTSOURCING MODELS FOR MALAYSIAN SMEs E-BUSINESS TRANSFORMATION

Syazwani Mohd Sabri, Rosnafisah Sulaiman, Azhana Ahmad and Alicia YC Tang
Universiti Tenaga Nasional, Selangor, Malaysia
E-Mail: wanni_05@yahoo.com

ABSTRACT

Today business state has become more dynamic and venturing into e-business is one of business requirements that promote business efficiency and opportunities. This has also affected the SMEs which are known to have limitations in terms of resources and skills to develop in-house IT applications. Information Technology Outsourcing (ITO) could be one of the solutions to accelerate the adoption process among the SMEs. Thus, the aim of this research is to investigate the factors affecting the decision to deploy ITO services among the Malaysian SMEs for e-Business implementation. A qualitative approach is used to explore the level of awareness, potential and implication of implementing the ITO among the SMEs. The focus of this study is companies that within Halal Industries. This paper discusses the comparative study on existing e-business and ITO models and current practices to identify factors and research gaps in this area. Findings from this comparative study are the reference model and the factors to being considered for this research. The considered factors will be used to construct data instruments and as a basis for the proposed model for this research.

Keywords: e-business, IT outsourcing, SMEs

INTRODUCTION

The growth of Internet technology plays a vital role in today's economy. It influences changes to the current business operations as well as the current IS/IT applications. In Malaysia, SMEs play a very important role and are considered to be the backbone of industrial development in the country. Malaysian SMEs is still lacking in manpower and capital to develop in-house IT applications or build an end-to-end e-business infrastructure. They are also reported to have limited capabilities like lack of awareness, resources and skills to develop IT applications that create barriers for SMEs to transform into fully e-business. Due to this, many SMEs are still unable to implement e-business (Siaw and Rani, 2012). A growing number of companies are already using the Internet to reorganize their business processes via e-business adoption. Although the benefits of e-business systems are attractive, but developing and managing these systems is not always easy. Thus, the involvement of the third party becomes crucial to the organizations, especially the SMEs (Hussin, Hasan, and Molok, 2010).

Business outsourcing that includes ITO services are now becoming prevalent practices worldwide (Hussin *et al.*, 2010). The services covered software development, maintenance and support (Hussin *et al.*, 2010). The approaches for SMEs are difference from large companies due to their business nature, such as size, structure, styles, strategies and type of challenges. In Malaysia, ITO has been identified as a potential business service which could benefit the SMEs in transforming themselves into e-business companies (Hamzah *et al.,* 2013). More considerations are required to understand the outsourcing approaches and practices specifically for SMEs. Thus, a proper or suitable model is required to assist the SMEs for their e-business adoption. This is for them to consider and apply the proper strategies before making decisions to acquire the suitable outsourcing approach for their businesses (Hamzah *et al.*, 2013).

The aim of this research is to identify factors affecting ITO decisions among Malaysian SMEs for e-Business implementation. A new model will be constructed based on the identified factors to assist SMEs moving towards e-Business via the ITO approach.

OVERVIEW OF E-BUSINESS

E-business was not only introduced a new way of doing business, but has become increasingly recognized as a main factor for the organizations' performances and has brought a significant impact on business practices such as performance improvement, visibility and revenue enhancement (Chen and Holsapple, 2013). E-business is defined in many ways. The earliest definition was coined by the IBM as "the transformation of key business processes through the use of Internet technologies." (Chaffey, 2011). It can be understood that through e-business implementation, it could enhance the quality of business processes by promoting a new way of doing businesses and easily connecting the stakeholders via Internet-based technologies. E-business has become an added value for the organizations in conducting business processes via the Internet that includes buying and selling products, managing business process, collaborating with business partners and sharing information.

E-business adoption is rapidly growing among business organization throughout the world and this includes the SMEs. Although Malaysian SMEs constitute 99.2% of the total establishments in the country, the survey findings from the Multimedia Development Corporation (MDeC), showed that 65% of SMEs do not use the Internet for e-business and 68% of them do not

have a website (Acccim, 2012). The adoption of e-business is comparatively slower compared to other countries. Among the reasons, Malaysians tend to be more cautions and conservative in adopting new technologies (Ang and Husain, 2012). In this paper a few models were reviewed to learn and evaluate the significant factors used that later can be relate to the current research.

A. TECHNOLOGY-BASED MODELS

Two technology-based models were reviewed that are Technology-Organization-Environment (TOE) and Technology Acceptance Model (TAM). These two models were reviewed due to two reasons; to give insights on how people or organizations perceive new technology into their current business environment and to see how these models can reflect to the current research context.

The TOE model was introduced by Tornatzky and Fleischer in 1990. This model provides essential factors like technological, organizational and environmental that a firm should consider when studying components that influence the integration of technological innovation (Sulaiman, 2011). The technological context comprises of the internal and external technologies that relate to the organization involved and includes both equipment and processes. The organizational context involves the characteristics and resources of the organizations such as size, managerial structure, human resources, the amount of slack resources and linkages among employees. For the environmental context, it includes the structure of the industry, the organization's competitors, the macroeconomic concept and the regulatory environment (Sulaiman, 2011). Zhu *et al*. (2006) has also applied this model in studying factors that influence e-business implementation stages in both developed and developing countries. Figure-1 shows the revised version of the model that covers the e-business context.

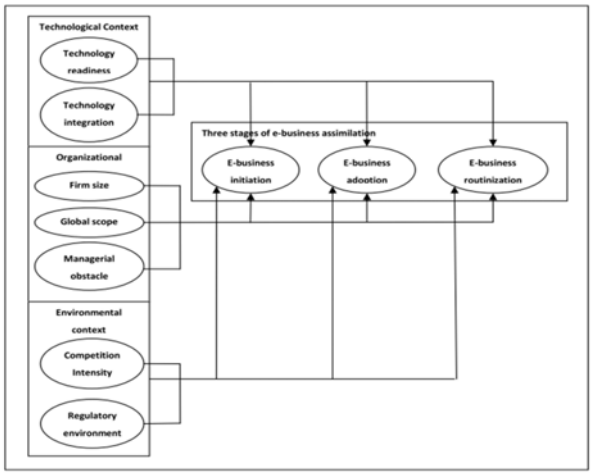

Figure-1. E-Business innovation model (Zhu et al, 2006).

The second model is the TAM model which is an information systems theory based model that describes how users come to accept and use a new technology. This model is an adaptation of the Theory of Reasoned Action (TRA) to the field of Information Systems (IS). The TAM model was based on the factors that relate to perceived ease of use of a system, perceived usefulness, attitude toward using, behavioral intention to use, and actual system use (Wu *et al*., 2008). Two shared beliefs (perceived ease of use of a system, perceived usefulness (PU)) influence the intention of the users to use the systems as well as the effect to the system usage. This model indicates that these shared beliefs significantly influence system usage either directly or indirectly. The PU was found to have a significant effect on the e-business usage (Zulkifli *et al*., 2012). PU is defined as the degree to which a person believes that using a particular system would enhance his or her job performance, while perceived ease of use is defined as the degree to which a person believes that using a particular system would be free of effort. Perceived usefulness has a direct effect on behavioral intention to use. However, perceived ease of use describes the direct effect on PU and behavioral intention to use the technology. Behavioral intention to use is defined as the individual's interest in using the system for future work (Wu *et al*., 2008). Nonetheless, the PU was not supported by the direct effect on actual usage. However, TAM on its theory has some limitations that include its questionable heuristic value, limited explanatory and lack of any practical value. In general, TAM focuses on the individual 'user' of a computer. It focuses on the concept of 'perceived usefulness'; with the extension to cover more factors to explain how a user 'perceives' 'usefulness', and ignores the essentially social processes of IS development and implementation. It does not evaluate which technology is actually better, and what the social consequences of the systems used (Bagozzi, 2007). Figure-2 shows the technology acceptance model.

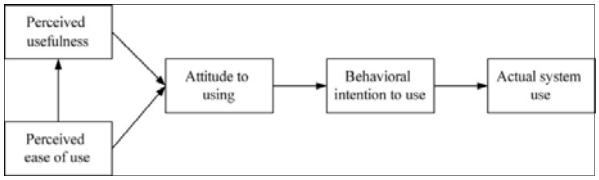

Figure-2. The technology acceptance model.

From the review, it can be found that the TOE model is more suitable to be used as a reference as it covers the e-business needs and is able to clarify the factors need to be prepared before adopting a new technology approach into the current business operation particularly for SMEs. The implementation of e-Business has shown that the required changes could be varied for the organizations and business sectors. Other factors such as size of organization, industry, type of product and

services may also influence the level changes. According to Zhu, *et al*., (2006), e-business adoption requires certain factors that influence the propensity to adopt and use the innovation, which is related closely to the specific technological, organizational and environmental contexts of an organization.

MALAYSIAN SME IN HALAL INDUSTRY

Halal in a Quranic word means a lawful or permitted item to consume or activities undertaken that must conform to the parameters set by the Quran and Sunnah, and to avoid those which are haram or forbidden. In this research context, the chosen companies are selected within this Halal industry. This is to study their character, behavior and awareness in accepting new technology or business approaches. The halal industry does not restrict to food sector but covers a wider scope that includes production and services (Nawai *et al*., 2007).

The market for Halal products and services are approximating at a global rate of 2 billion Muslim consumers all over the world (Machfud and Dahlan, 2011). Based on this fact, the e-business strategic approach could provide various opportunities for SMEs in this particular industry. This is also to align with the Malaysia's plan to be a global hub for the Halal industry. Thus, it is crucial to find out why and how the ICT can be leveraged further to increase the competitiveness in the current Halal market as well as to prepare the SMEs for future needs. Companies in this industry are used as case studies as this industry has become one of the growing industries in Malaysia but yet lack of study can be found on e-Business or IT outsourcing issues (Tan *et al*., 2012).

OVERVIEW OF IT OUTSOURCING

Outsourcing is defined as "a decision-making process where the management of the organization has to decide whether they should keep a specific activity in-house or buy it from an external subcontractor" (Johnson *et al*., 2008). This outsourcing term was commonly used within a business environment. However, in certain circumstances, the term does not provide a clear definition and may consist of various business activities that depending on business nature and type of operation involved. In this research, it focuses on IT applications. ITO is defined as "an effort that using third-party service providers to effectively deliver IT enabled business processes, application services and infrastructure solutions for business outcomes" (Dibbern *et al*., 2004). It involves various types of services for core processes such as procurement, and support business processes such as office automation, utility, service and cloud-enabled outsourcing, and sourcing strategies (Gartner, 2014). It can be understood that ITO is well defined as a top-down approach. It involved a decision-making at the management level to engage a third party to conduct selected business processes based on their expertise and also due to lack of internal capability to handle those processes. This research defines ITO as "a process of contracting out business activities to external party that involving decision-making by the management in the context of e-business needs".

The rapid advances in the technology have created a new brand of outsourcing, which shifted the measure of success, driving companies to rethink on how they could acquire and deliver the products and services effectively and efficiently. These types of strategic relationships with business partners, suppliers and customers could leverage the most expertise required in every area of the operation rather than depending on local resources (IBM, 2008). Currently, the common practices are to outsource non-core business functions (usually back office functions) to help companies to cut costs and improve quality of services (Pateli and Giaglis, 2004). However, the complexity of IT projects is one of the main factors that make IT among the most popular functions to outsource. IT becomes much more complicated functions due to system integration with other business functions in the organization to fulfill e-business requirements especially for SMEs. IT could also be even more difficult to pin down as it is generally described by business practices to involve development, installation, implementation and maintenance of computer systems and applications (Stresman and Lentine, 2011). As a result, this approach has become well-known to the industries as it helps to develop business focus and expertise for the companies, the service providers and the companies (Laplante *et al*., 2004). Now's day, IS/IT outsourcing businesses have become one of a well-established and fast growing industries (IBM, 2008).

In Malaysia, ITO falls under business services sector, which has been identified as a new potential catalyst in the Malaysia's transformation plan in becoming into a knowledge economy country. However, for SMEs, the ITO practices are still limited to general office automation and non-core processes. Furthermore, lack of studies can be found on ITO especially for SMEs and e-business context (Siaw and Rani, 2012). It can be observed that SMEs in Malaysia have similar practices of the larger organizations in the same field, however, the scope of practices are different especially in terms of type of contract, penalty and termination clauses (Hamzah *et al*., 2013). This could also become one of the reasons why ITO was not considered by the SMEs as it may cause some complexity in fulfilling the terms and conditions.

A. IT outsourcing practices for e-business transformation

We also investigate how ITO could assist in e-business adoption. ITO is one of the common solutions used in most of the developed countries and in various industries such as manufacturing and services to increase business efficiency, services and product quality, and helps the companies for e-business transformation. It is predicted that both IT and business process outsourcing market will

continue to grow in global markets. For example, in China's market, this sector grows up to 38% annually (Kapurubandara and Lawson, 2007). In the era of e-business, ITO has transformed into high demand that not only involves basic IT but also the conception of innovative ideas and the creative forging of critical and limited resources (Ainin and Noorismawati, 2003; Hussin *et al*., 2010). It is reported that the frequency used of ITO involves a much greater range and depth of services than in the past. The increasing number of IT functions being transferred to IT service providers are among the evidences (Hussin *et al*., 2010).

Many organizations are looking to ITO to get a quality of information services that are important to the future prosperity of an organization. ITO through external service providers can be resulted less burden to the organization due to in-house development (Hussin *et al*., 2010). In e-business, ITO has become one of the essential elements to be considered and implemented within or together with new or existing business processes (Hongxun *et al*., 2006). Findings from the previous study on social and economic benefits showed that e-business is expected to improve business processes and communication efficiency within the organization and stakeholder (Hamzah *et al*., 2013). It is also difficult for the SMEs to decide on IT outsourcing approach due to financial constraints and IT knowledge (Hussin *et al*., 2010). Findings show that Malaysian SMEs E-business lacks suitable IT outsourcing models for implementing the transformation.

B. IT-outsourcing benefits and motivation

A number of ITO benefits from various perspectives in previous studies have reported, particularly in finance, resource, strategic, management and culture concerns (Ang and Husain, 2012; Liao and Reategui, 2002; Djavanshir, 2005; Kremic *et al*., 2006; Vilvovsky, 2008). In this research, these benefits and motivation were reviewed to see whether the similar factors could affect the Malaysian SMEs in considering the ITO approach for their e-business adoption. Summary of the previous studies is provided below.

1. Financial Concerns include cost reduction, improve reduce total assets and number of employee involve in IT project. This can reduce cost of labor specialization and also improve the financial performance index and cash flow (Ang and Husain, 2012; Liao and Reategui, 2002; Djavanshir, 2005; Vilvovsky, 2008).

2. Resource Concerns include the access to external expertise and technologies that have the skills needed (Djavanshir, 2005; Kremic *et al*., 2006; Vilvovsky, 2008). This will help the companies to focus on their core businesses than IT development (Ang and Husain, 2012; Liao and Reategui, 2002; Djavanshir, 2005; Vilvovsky, 2008).

3. Strategic Concerns include the mergers and acquisitions, and business transitions and reduction in project delivery lead time. By having IT resources and expertise will assist in shorten the delivery time and allow companies to form a better strategic partnership (Ang and Husain, 2012; Liao and Reategui, 2002; Djavanshir, 2005). The company can focus on its core businesses that increase effectiveness and business performance and ease of global outsourcing that can increase the firm's strategic flexibility, such as by having standard operating procedures and documentation (Ang and Husain, 2012; Liao and Reategui, 2002)

4. Management Concerns include legal contracts that can achieve project goals and create positive competition (Liao and Reategui, 2002; Djavanshir, 2005).

5. Cultural Concerns include better image and branding to stakeholders by improving its operating efficiency (Liao and Reategui, 2002).

From the review above, it showed that the financial concerns were discussed and mostly highlighted in the previous studies. Majority highlighted on the same concerns, except Liao, who pointed to cultural concerns as part of ITO benefits. Findings from this review help to determine the most influential factors that had been considered in the previous studies. The findings will also be used as a basis to develop data collection tools for this research.

C. IT-OUTSOURCING BARRIERS AND RISK

A few barriers were identified from this review such as financial concerns, loss of control, selecting outsourcing provider, difficulty clearly defined specifications and failure to manage the existing team. Among the issues arise from the financial concerns are uncertainty budget for the contract; significant investments require from both client and vendor in a certain period of time; and uncertainty about the contract. (Liao and Reategui, 2002; Kremic *et al*., 2006; Vilvovsky, 2008)

Secondly, the loss of control over the technology and the current project status to the vendor or to a consultant who manages the relationship will result to overdependence on the outsourcing vendor which will expose to any possible opportunism such as giving other clients higher priority; failing to perform required tasks; and loss of data and accessibility of data (Liao and Reategui, 2002; Kremic *et al*., 2006; Vilvovsky, 2008).
Thirdly, it is difficult to find a good outsourcing provider who can fulfill all the requirements in terms of expertise, experience, and quality of services. On the managerial side, it is difficult to get a clear defined specification, requirements, and procedures in IT outsourcing contract. The changes of procedures and needs are difficult to make due to these constraints (Liao and Reategui, 2002).

Another barrier is failure to manage the team. This is likely to affect the company and the projects involved. Based on the review above, it can be observed that the ITO approach can be considered as a complicated process that required an extensive strategic planning, timely decision making and knowledge as well as assistance to ensure the success of ITO projects (Liao and Reategui, 2002). Thus, it is important for SMEs to realize all the barriers and to have a proper guide to assist them in considering the outsourcing services.

D. IT-OUTSOURCING MODELS

Four existing models were reviewed: i) model 1 - IT Outsourcing by Hamzah et al., (2013), ii) model 2 - Information Technology Outsourcing (ITO) by Arshad, et al., (2010), iii) model 3 - IT Outsourcing Process by Zhang *et al*., (2008) and iv) *model 4* - Business outsourcing process by Handley and Benton, (2009). This comparison was conducted to review the existing models and to rectify any components or variables that can be learned and extended further to suit with the research scope.

Results from this comparative study show that model 1 focuses on three dimensions which are relationship, contract and capability, and it used trust, commitments and information sharing for measuring the relationship dimension. This model also involves appropriate number of factors to determine each dimension. It also takes into account the capability dimension within technical, cultural and flexibility categories. But this model was not measured for financial and strategic benefits of ITO success. This model was designed based on SME environment and needs which includes the decision-making process. E-business requirements were also considered in this study but was not included in the model (Hamzah *et al*., 2013).

Model 2 focuses a model based on the concepts of dynamic capabilities and benefits of management for evaluating and managing customers' IT capabilities that need to be applied to outsourcing relationships over time. It was used to support decisions on the distribution of limited human resources between IT capabilities of contract monitoring and service delivery in ITO scenarios of varying internal-external sourcing partitioning. But this model was not measured for managing risk and benefit of ITO process (Arshad, *et al*., 2010).

Model 3 focuses on ITO decision and it is classify the decision process into four stages: pre-decision, selection, implementation, and outcome. It combines two theories, transaction cost theory (TCT) and resource-based theory (RBT). This model highlighted certain factors such as asset specificity that refers to the degree of uniqueness of the assets of the software, hardware, or human skills required by the company. A combination of both theories can verify the outsourcing scope and degree. However, this model was not measured in managing risk, cost in term of money and benefit of ITO process (Zhang *et al*., 2008).

Model 4 consists of strategic evaluation, contractual completeness and relationship management. It also includes capability evaluation, which the outsourcing team will be evaluated based on the strategic value and resources associated with the business activity and strategic risk assessment. Contractual completeness is the extent to which the outsourcing firm and chosen provider develop a contract which effectively coordinates resources and addresses identified inter-organizational risks. Lastly relationship management represents the degree to which the outsourcing firm has strived to establish and maintain a mutually beneficial relationship with the supplier. However, this model needs specific outsourcing environments where the contract plays a significant role in determining performance outcomes, risk and organization issues (Handley and Benton, 2009). Table-1 shows the summary of this review.

Table-1. Comparison of existing models.

No	Model	Method	Factors	Strength	Weakness
1	IT Outsourcing	Quantitative and qualitative approaches	Relationship, contract and capability	Consists of three dimensions of factors to provide a better solution for the SMEs	Use general terms to measure IT outsourcing success instead of using specific determinant such as financial
2	Information Technology Outsourcing	Dynamic Synthesis Methodology (DSM) which combines System Dynamics Simulation Modeling (SDSM) and Case Studies.	Financial, demand, capabilities, and contract	Provides detail factors in the relationship between the IT Outsourcing and the company.	Not measured for managing risk and benefit of ITO process
3	IT Outsourcing Decision Process	Theories	Firm strategy, IT assets specificity and Internal IT capability	Provides detail in the decision process from the pre-decision, selective decision, implementation decision, and outcome decision.	Not measured in managing risk, cost in term of money and benefit of ITO process
4	Business outsourcing process	Two-stage structural equation modeling (SEM) and questionnaire	Strategic evaluation, contractual completeness and relationship management	Provides detail factor for the management to consider for BPO.	Need specific outsourcing environments where the contract plays a significant role in determining performance outcomes, risk and organization issues.

Based on this study, it can be seen that the existing models are focusing on different needs such as IT tools or one specific business process such as selecting supplier or marketing. These models are still lacking in guiding the companies to adopt ITO and e-Business elements. Thus, it is significant to have a model that specifically assists Malaysian SMEs to use ITO approach for e-business adoption. The outcomes of this review will determine a suitable model to be used as a reference to assist in constructing a new IT outsourcing model.

THE REFERENCE MODELS

For this research, two models were used as a reference model, the first one is IT Outsourcing model by Hamzah *et al.* (2013) and another model is the extended TOE model by Zhu *et al* (2006).

The IT Outsourcing model was chosen because of a few reasons as below:

1. It consists of five factors; trust, commitment, contract completeness, technological capabilities and culture compatibility that can ensure the IT outsourcing success (Refer to Figure-3).
2. It also provides a detail ITO decision process with factors that need to consider at each stage.
3. The factors in this model based on SME environment.

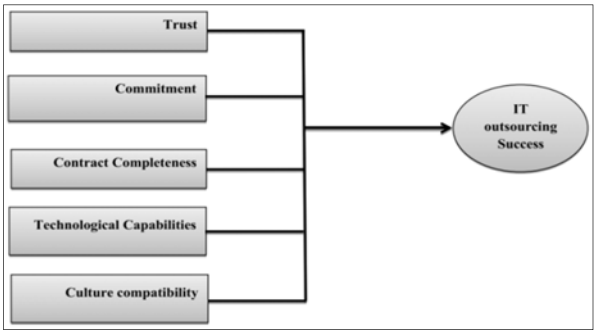

Figure-3. IT outsourcing model (Hamzah *et al*., 2013).

The adapted model by Zhu *et al*. (2006) was chosen because of a few reasons as below:

4. It consists of three main factors; technological, organizational and environmental that can ensure the entire factors are considered. (Refer to Figure-1)
5. This model was designed based on the organizational needs with the consideration for the e-business adoption factors.

Factors such as technological readiness, under the technological context, and culture, under the environmental context, are the most relevant factors in the innovation assimilation process especially for developing countries. It is related to the technological capabilities and culture compatibility factors in determining the success of IT Outsourcing process. The organizational context which involves elements such as firm size and managerial

obstacles has been verified through the model which provides evidence of significant relationships of firm size and firm scope to IS/IT adoption and usage (Zhu *et al*, 2006). Organization size is seen as an important organizational attribute for innovation diffusion including SMEs. The managerial barrier factors are including the organization's lack of managerial skills and efficiency in handling change management and ineffectiveness in managing technology adoption and adaptation. This then requires firms to possess relevant managerial skills and overcome barriers in adopting and assimilating new technology by outsources the technology. It is related to trust and commitment between management and IT Outsourcing provider to produce a good contract and success in IT Outsourcing process.

Therefore, in line with the research, a few factors from the TOE model and the referred IT Outsourcing model, such as firm size and managerial obstacles will be used to measure the suitability and the success of e-business adoption for the SMEs. Moreover, both models can support the SMEs limitation in a various aspects for e-business adoption via IT Outsourcing and formulation of ITO new models that achieve research needs. Thus, it can be summarized that most of the main factors presented relationship and similar factors for both models for e-business adoption in terms of technological, organizational and environmental especially for SMEs scope. The understanding that e-business adoption can be readily developed or implemented with what is readily available, and change as the IT Outsourcing approach becomes more defined is what needs to be shown to SMEs.

METHODOLOGY

This comparative study was conducted on several models within the area of outsourcing and e-Business. Out of eight models of ITO, four were selected to be reviewed further based on these criteria; the decision making process for outsourcing and relevant factors or components that suit the e-Business needs and Malaysian SMEs. To meet these criteria, a model from Hamzah *et al*. (2013) was chosen as a reference model. Another model is from the technology-based model. As a result, relevant factors that influence the decision making process, acceptance levels and perception towards ITO approaches for e-business implementation were identified. These factors will be used as pre-considered factors for the development of data collection tools to assess the e-business adoption via ITO approach.

CONCLUSIONS

This paper presents a comparative study of existing ITO models to review the considered factors and components used in each of the models. This paper also reviewed technology based models to study the influenced factors with regard to technology acceptance by the organizations. The finding of this research could help to develop an understanding of ITO and e-business adoption among Malaysian SMEs. Future works may introduce more detailed information on the factors and the proposed model. These factors will be investigated further using a qualitative approach by conducting a series of interview with respected SMEs in halal industry. In this research, the SMEs in Halal industry is chosen as case studies as this industry is relatively new but has high potential and huge global market that it can offer.

ACKNOWLEDGEMENT

This research is fully funded by the Ministry of Education under FRGS Scheme "20140104FRGS".

REFERENCES

[1] Acccim. 2012. The Associated Chinese Chambers of Commerce and Industry of Malaysia (ACCCIM) Report of SMEs Survey. ACCCIM Report, 1-17.

[2] Ainin, S., and Noorismawati, J. 2003. E-Commerce Stimuli and Practices in Malaysia. 7th Pacific Asia Conference on Information Systems, (July), 552–566.

[3] Ang, S., and Husain, W. 2012. A study on implication of adopting e-business technology by SMES. Proceedings of the ICCIT 1st Taibah …, 366–369. Retrieved from http://www.taibahu.edu.sa/iccit/alliccitpapers/pdf/p366-ang.pdf.

[4] Bagozzi, R.P. 2007. "The legacy of the technology acceptance model and a proposal for a paradigm shift.", Journal of the Association for Information Systems8 (4): 244-254.

[5] Chen, L., & Holsapple, C. W. 2013. E-Business Adoption Research: State of the Art. Journal of Electronic Commerce Research, 14(3), 261–286.

[6] Dibbern, J., Goles, T., Hirschheim, R., and Jayatilaka, B. 2004. Information Systems Outsourcing: A Survey and Analysis of the Literature. SIGMIS Database, 35(4), 6-102. doi:10.1145/1035233.1035236.

[7] Hamzah, A. K., Sulaiman, R., and Hussein, W. N. 2013. A review on IT outsourcing approach and a proposed IT outsourcing model for Malaysian SMEs in e-Business adoption. International Conference on Research and Innovation in Information Systems, ICRIIS, 2013, 521-526.

[8] Handley, S. M., and Jr, W. C. B. 2009. Unlocking the business outsourcing process model, 27, 344-361. doi:10.1016/j.jom.2008.11.002.

[9] Hongxun, J., Honglu, D., Xiang, Y., and Jun, S. 2006. Research on IT outsourcing based on IT systems management. Proceedings of the 8th International

Conference on Electronic Commerce: The New E-Commerce: Innovations for Conquering Current Barriers, Obstacles and Limitations to Conducting Successful Business on the Internet, 533-537. doi:10.1145/1151454.1151455.

[10] Hussin, H., Hasan, M. R., and Molok, N. A. 2010. Exploring the perception and practices of IT outsourcing among Malaysia SMEs: Receivers perspective. Proceeding of the 3rd International Conference on Information and Communication Technology for the Moslem World: ICT Connecting Cultures, ICT4M 2010.

[11] IBM, The Outsourcing decision for a globally integrated enterprise: from commodity outsourcing to value creation, 2008.

[12] IT outsourcing, http:www.Gartners.com. Assessed on 10 July 2014.

[13] Kapurubandara, M., and Lawson, R. 2007. SMEs in Developing Countries Need Support to Address the Challenges of Adopting e-commerce Technologies : SMEs in Sri Lanka. 20th Bled Conference eMergence: Merging and Emerging Technologies, Processes and Institutions, 485–499. Retrieved from http://domino.fov.uni-mb.si/proceedings.nsf/2007.

[14] Laplante, P. A., Costello, T., Singh, P., Bindiganavile, S., and Landon,M., The who, what, why, where, and when of IT outsourcing. ITprofessional, 6(1), 19-23, 2004.

[15] Liao, K. G., and Reategui, L. A. 2002. IT Outsourcing in Emerging markets.pdf.

[16] Lumpur, K., Arshad, N. H., Sciences, M., Alam, S., Hanapi, R., Alam, B. P., Alam, S. 2010. IT Outsourcing and Knowledge Transfer in, 16-21.

[17] Machfud, A., and Dahlan, A. 2011. Collaboration, Wealth and Value Creation, Smes'Halal Products Communities, and Information Systems. International Journal of …, 1(2), 510–518. Retrieved from http://sdiwc.net/digital-library/collaboration-wealth-and-value-creation-smes-halal-products-communities-and-information-systems.

[18] Nawai, Mohammad, Noorizzuddin, N. B. 2007. Halal Certification: What the SME Producers Should Know. Islam Zeitschrift Für Geschichte Und Kultur Des Islamischen Orients.

[19] Pateli, A. G., and Giaglis, G. M. 2004. A research framework for analysing eBusiness models. European Journal of Information Systems, 13, 302-314. doi:10.1057/palgrave.ejis.3000513.

[20] Siaw, C.-L. and Rani, N. S. A. 2012. A Critical Review on the Regulatory and Legislation Challenges Faced by Halal Start-up SMEs Food Manufacturers in Malaysia. Procedia - Social and Behavioral Sciences, 57, 541-548. doi:10.1016/j.sbspro.2012.09.1222.

[21] Stresman, D. D. and Lentine, W. C. 2011. A Primer on IT Outsourcing: What to Look for Before You Leap, (July), 38-41.

[22] Sulaiman, H. 2011. Healthcare Information Systems Assimilation: The Malaysian Experience Doctor of Philosophy Hidayah Sulaiman, (July), 208.

[23] Tan, M., Razali, R., and Desa, M. 2012. Factors influencing ICT adoption in halal transportations: a case study of Malaysian halal logistics service providers. International Journal of Computer Science …, 9(1), 62-71. Retrieved from http://www.ijcsi.org/papers/IJCSI-9-1-2-62-71.pdf

[24] Wu, J.-H., Shen, W.-S., Lin, L.-M., Greenes, R. a, and Bates, D. W. 2008. Testing the technology acceptance model for evaluating healthcare professionals' intention to use an adverse event reporting system. International Journal for Quality in Health Care : Journal of the International Society for Quality in Health Care / ISQua, 20(2), 123–129. doi:10.1093/intqhc/mzm074.

[25] Zhang, P., Zeng, Z. X., and Huang, C. P. 2008. A framework for IT outsourcing decision process. 5th International Conference Service Systems and Service Management - Exploring Service Dynamics with Science and Innovative Technology, ICSSSM'08.

[26] Zhu, K, Kraemer, KL and Xu, S 2006. 'The Process of Innovation Assimilation by Firms in Different Countries: A Technology Diffusion Perspective on E-Business', Manage. Sci., vol. 52, no. 10, pp. 1557-76.

[27] Zulkifli, N., Hashim, R. G., and Ahmad, J. 2012. Information mining capabilities in Malaysian SMEs: Specific use of enterprise resource planning system. 2012 IEEE Symposium on Business, Engineering and Industrial Applications. 431–436. doi:10.1109/ISBEIA.2012.6422921.