

Adoption and Use of E-Procurement: A Case Study in HM Sdn. Bhd.

Marhaiza Ibrahim*

*School of Accountancy, College of Business,
Universiti Utara Malaysia*

Abstract

The adoption and usage rate of electronic-procurement (eP) in Malaysia has been relatively slow since the beginning of eP implementation. This highlights the need to understand the inhibitor factors of eP adoption and usage among suppliers in Malaysia. This study examined the adoption and use of eP by the HM Sdn. Bhd. construction company (HM), and its contribution to the Management Information System (MIS) planning strategy in the organisation. An in-depth case study approach was employed in this study. The respondents consisted of 21 individuals from middle and top management levels of HM using purposive sampling procedure. The data were collected via interview and analysed using narrative analysis method. The finding of this study highlighted that complexity and compatibility are the key inhibitor factors in the adoption and use of eP among middle management and top management in the company. Failure to maximise eP advantages can reduce the competitiveness of HM in the market. Furthermore, the management had spent a huge investment to make the eP system become reality.

Keywords: e-Procurement, complexity and compatibility

1.0 Introduction

The advent of the personal computer can be seen as the starting point in economic transformation, that is, from the industrial era to the information era. This information revolution can be traced back to the 1950s when the transistor was invented and the first commercial computer was put to use. The latest invented Information and Communication Technology (ICT) is the Internet which has significantly changed the economic, market, and industrial structures (Beulen, 2009; Kaliannian & Awang, 2010; Liu, Sun, Wang, & Zhao, 2011).

The global Internet works every second, signifying that it can be exploited every time and everywhere in the world. This simplifies the growth of Internet or electronic transactions. In other words, ICT dramatically influences the way an organisation undertakes its business (Bertot, Jaeger, & Grimes, 2010; Norzaiddi, Chong, Murali, & Intan Salwani, 2007). Small, medium, and large firms cannot ignore the need to integrate information networks into their strategies, operations, and performances (Liu et al., 2011; Saeed & Abdinnour-Helm, 2008). Companies that exploit ICT have the ability to get closer to their customers than their competitors (Bertot et al., 2010; Liu et al., 2011).

*Corresponding Author: Tel: 04-9287261
E-mail Address: marhaiza@uum.edu.

Currently, governments around the globe, including Malaysia have started to bring into play the Internet to electronically deliver services to the people. To achieve this, Malaysia launched the Multimedia Super Corridor (MSC) project in August 1996. The main strategy is to accelerate Malaysia's entry into the information economy, while gearing itself toward the status of a developed nation by 2020. The MSC's seven flagship applications are electronic government (e-government), e-business, smart schools, multipurpose card, tele-health, research and development clusters, and technopreneur development (Malaysian Administrative Modernisation and Management Planning Unit, 2010).

Malaysia's e-government applications are e-Procurement (Ministry Of Finance/ MoF), e-Court (Prime Minister's Department), Project Monitoring System (Prime Minister's Department), e-Servicers (Ministry of Transport), e-Land (Ministry of land Development and Coop), e-Syariah (Prime Minister's Department), Electronic Labour Exchange (Ministry of Human Resource), Generic Office Environment (Prime Minister's Department), and Human Resource Management Information System (Public Services Department) (MAMPU, 2010). The focus of this study was on e-Procurement because it is one of the critical elements under the Government Transformation Programme (GTP).

In recent years, e-Procurement has been utilised to reduce paperwork and lower administrative costs, reduce costs as it allows better quantity purchases, encourages a wider selection of purchasers and suppliers, advances delivery as well as enhanced quality (Calipinar & Soysal, 2012; Panda & Sahu, 2011).

There are various definitions of eP, but in this paper, eP is defined as the automation of the buying and selling process, providing an efficient and effective way for firms to obtain goods and services to ensure that the supply of purchased items is delivered in full, on time, and to specification (Calipinar & Soysal, 2012; Ketikidis, Kontogeorgis, Stalidis, & Kaggelides, 2010; Teo & Lai, 2009). The development and implementation of the eP system is completed in stages and discussed in the next section.

This paper sought to find the determinant inhibitor factors of eP adoption and usage among the middle management and top management by a Malaysian company named HM Sdn. Bhd. The HM case study is exploratory in nature due to the lack of knowledge in the field of eP system adoption. The remainder of the paper is organised as follows. The following section illustrates eP developments in the Malaysian environment followed by significance of eP. The third section presents research methodology, followed by research findings and discussion in the fourth section of the paper. The final section provides the conclusion of the paper.

2.0 E-Procurement Developments in Malaysia

"Malaysian government takes an advance value for money action under ePerolehan system. Every procurement transactions will be managed through open tender or limited tender. ePerolehan will increase the transparency in e-government procurement," said Y.A.B. Dato' Sri Mohd Najib bin Tun Abdul Razak, the current Malaysian Prime Minister in his "Ucapan Pembentangan Pakej Ransangan Ekonomi kedua" speech on 10 March 2009.

eP is the official and secure online electronic-market platform, especially for suppliers and government agencies (Calipinar & Soysal, 2012; Colesca & Dobrica, 2008). It provides a link between buyer and seller in secured transactions (Kaliannan & Awang, 2010). eP enables suppliers to directly register and renew their registration with the Ministry of Finance (MoF) via the Internet. In addition, suppliers can submit their application, check their application status, and pay registration fees through eP (CDC, 2010).

The eP project started in 1999. On 6 October 2000, two eP modules were launched, which are Supplier Registration and Central Contract. Then, the Direct Purchase module was launched on 10 May 2002 (CDC, 2010). Next, the Quotation and Tender modules were launched on 27 May 2003. The e-Bidding module was implemented in September 2006 as well as the latest module, Ministry Contract (CDC, 2010).

Altogether there are seven eP modules and a pilot test was done in a few government ministries, such as MoF, Ministry of Defence, and Ministry of Internal Security to determine their applicability. The main portal is Supplier Registration module that enables suppliers to register with the MoF. It consists of activities such as new application, renewal, field addition, profile update, and electronic application for Bumiputera status.

The second module is Central Contract that is purposely for the procurement that involves specific products from selected suppliers for the MoF within a specified time frame. The third module, Ministry Contract is purposely for the procurement that involves specific products from selected suppliers direct to the specific ministry involved. The fourth module is Direct Purchase, which is for the procurement of products and services with the value amounting up to RM50,000. The fifth module is Quotation that focuses on the procurement of products and services with the value amounting between RM50,000 to RM200,000. The sixth module is Tender that is for the procurement of products and services with the value amounting at above RM200,000. The final module is e-Bidding that deals with the procurement of products and services with the value amounting to more than RM200,000. It is a procurement application where suppliers compete interactively (CDC, 2010).

eP system supports all government procurement activities via Central Contract, Ministry Contract, Direct Purchase, request for Quotation and Tender, and e-Bidding. In short, the vision of eP is to ensure an effective and efficient eP management system as well as to make eP as the main procurement device used by government agencies, suppliers, and citizens (CDC, 2010). The government highlighted that the objectives of eP are to give the best value of money for government procurement, to ensure the suppliers receive faster and more accurate payment, to ensure accountability and transparency in all government procurement activities, and to increase collaboration between the business sector and government (Bertot et al., 2010; CDC, 2010).

eP allocates the suppliers to present their products on the website whereby it enables them to receive, manage, and process government purchase orders, and receive payment from government agencies through an online system (Bertot et al., 2010). In other words, the eP system supports online product catalogue presentation, order taking, order fulfilment, electronic payment, quotation, and tendering. This in turn enables eP to contribute to the reduction of operational cost, the reduction of turnaround time of procurement process, the attainment of best value procurement deals, and directly increase of accountability and transparency in all government procurement activities.

The suppliers are defined as private owned business that responds to calls for bids indicating their intention to sell their products or services (Carayannis & Popescu, 2005). The company will lose the opportunity to do business with the government if they are eP unable which is due to the instruction from Secretary General of Treasury (MoF, 2002). To be qualified as eP enabled, the suppliers have to follow the following five steps:

1. Register with MoF via eP system.
2. Purchase equipment for ePXS/MyKad/MyeP eP system and Smart Card Reader.
3. Provide infrastructure.

4. Attend eP workshops.
5. Provide e-Catalog.

Unfortunately most suppliers failed to be eP enabled because most of them only fulfil the first three steps (provide infrastructure) and fail to attend eP workshops and provide e-Catalog (CDC, 2010). Normally, the cost for being eP enabled is about RM1,500 per business. Most observers conceded that more talk than transaction has flowed via Internet enabled “supply chain of the future”. The saving opportunities are still there, but the evolution has been slower than expected, and this has been borne out in Malaysia.

3.0 Significance of e-Procurement

There are many positive benefits and advantages of eP for HM. The company will gain value significantly from eP in terms of new market creation, additional revenue opportunities, competitive advantage, cost savings, customer satisfaction, and operational efficiencies (Calipinar & Soysal, 2012; Ketikidis et al., 2010; Kaliannian & Awang, 2010; Mills-Senn; 2012; Panda & Sahu, 2011; Walker & Harland, 2008). The efficiency and effectiveness of buying and selling are realised through the automation of the entire procurement cycle.

Other benefits of eP are that it removes repetitive manual tasks and reduces paperwork (Calipinar & Soysal, 2012; Colesca & Dobrica, 2008; Panda & Sahu, 2011; Soares-Aguiar & Palma-dos-Reis, 2008). This enables other resources to be used on high value tasks, such as contract management and compliance between buyers and suppliers (Calipinar & Soysal, 2012). The use of web based eP also results in fewer transmission errors compared to paper based methods, enables electronic invoicing and payment, revolutionise the procurement process, and leverages technological infrastructure (Calipinar & Soysal, 2012; Khalid, Ahmad, & Irshad, 2011; Soares-Aguiar & Palma-dos-Reis, 2008).

4.0 Research Methodology

The case study methodology was utilised for the following motivations; the case study’s unique strength is in dealing with a full variety of evidence, including documents, interviews, and observations (Yin, 1994; Yin, 2013). This holds the key to a better understanding of the forces influencing eP implementation in HM.

This study utilised in depth case study focusing on HM due to its new eP implementation, adoption, and usage among the middle management and top management. HM Sdn. Bhd. is a private limited company registered in Penang, Malaysia and operates in the construction industry. The HM business operations are specialised in construction, relating to infrastructure, building, procurement, engineering, and consultation. This construction company was chosen because the company deals directly via eP for tendering processes and also one of the early companies to use eP in their operations. The company was eP enabled since 2004. By subscribing to eP in their daily transactions, the company’s readiness and capability to compete in the global market, particularly eP, has been recognised as its significant component of e-business (Calipinar & Soysal, 2012; Kaliannian & Awang, 2010). The excellence is in the form of cost saving and operational efficiency (Calipinar & Soysal, 2012; Panda & Sahu, 2011). Failure to be eP enabled can reduce the competitiveness of HM in the market.

The 21 staff members from middle management and top management levels in HM were selected using a purposive sampling procedure. The respondents were chosen using purposive sampling procedure due to the fact that they are involved and familiar with the eP system. During the data collection process, semi-structured and open-ended questions were applied during interview sessions with the respondents. The interview session took about 15 to 20 minutes for each respondent during a normal working day. The data were transcribed by assigning category names and merging into similar categories, and then grouping the categories to form themes. The data were analysed using narrative analysis method.

5.0 The Use of e-Procurement by HM Sdn. Bhd.

As mentioned previously, the company was eP enabled since 2004. HM became eP activated after re-evaluating their operation and procurement processes, and detected new types of e-procurement tools that would meet their needs in the current environment. Failure to be eP enabled can reduce the competitiveness and success of HM in the challenging market in Malaysia. The case methodology is practical when contemporary events are the focus of the research and the phenomena is not supported by a strong theoretical foundation.

6.0 Findings and Discussion

In spite of huge of benefits, the middle management and top management in HM are reluctant to adopt and use the eP system in their daily business when dealing with customers because of the complexity of the eP system. They feel burdened and difficult to use eP in their daily transactions, which contributes to the low adoption and use of eP among middle management and top management of HM. Excerpt from one respondent:

“I feel difficult when dealing with eP system and make me lack of confidence to use the system in daily transactions in business” (Mr. B).

The complexity of an innovation generates greater ambiguity for successful implementation and then increases the reluctance in the adoption and use of eP technology (Al-Hudhaif & Alkubeyyer, 2011; Malek & Nik Kamariah, 2011). In other words, when the level of complexity is high, the middle management and top management may decide not to adopt and use the eP system. According to Premkumar and Roberts (1999), the difficulty in utilising IT and training among users contributed to less probability to adopt IT. The complexity perception is involved when HM’s staff members were to conduct eP transactions. Response from a Marketing Executive was that it “look like eP as straightforward and self-explanatory”, while others noted that it was complicated since many forms needed to be completed and this appeared an overwhelming task. Thus, the perception of complexity seems to be related to previous experiences.

“I’m not comfortable ... I mean eP is fine, I mean it’s good if you know where you’re going. It’s the most frustrating thing if you don’t know where you’re going. I mean I like the facility but I couldn’t find out how to do it” (Mr. C – Senior Marketing Executive).

Although there are different views of complexity level across all the HM’s staff members, clearly their concerns are about the complexity to become eP users.

Furthermore, the complexity has been analysed to be one of the main factors middle management and top management may decide not to adopt and use eP system. There are low practices with the eP adoption and use of eP, in terms of customer-based inter-organisational systems (Grover, 1993). Additionally, complexity contributes to the low Information Technology (IT) adoption and decreases the possibility in the adoption decision (Malek & Nik Kamariah, 2011; Premkumar & Roberts, 1999). The eP adoption engages knowledge and understanding to apply the new system, which is highly, distinguished from the prior procurement traditional method of preparing transaction papers (Calipinar & Soysal, 2012).

Furthermore, the lack of compatibility of current IT system of HM with eP system contribute bad perceptions in term of employee's needs among middle management and top management towards eP system (Al-Hudhaif & Alkubeyyer, 2011; Malek & Nik Kamariah, 2011). Excerpt from one of respondent:

“The eP system usually makes the process of key in data or information slower than before. I prefer using previous system compare to new ones” (Miss L). If an innovation is compatible with the employee's needs, the uncertainty will decrease and the adoption rate will be increased (Malek & Nik Kamariah, 2011). An innovation which does not conform to the values and standards of the existing system will diffuse more slowly than a compatible one (Roger, 2003). Several studies have revealed similar findings and theme of compatibility findings toward technology adoption and usage (Goodhue & Thompson, 1995; Malek & Nik Kamariah, 2011; Moore & Benbasat, 1991; Grandon & Pearson, 2004).

Due to huge investments on eP and the need of eP system being compatible and accepted across several functional areas, the support and commitment from middle management and top management is vital for successful implementation of eP (Wei & Wang, 2010). The employee's ability to accept and learn about the innovation can extend technological adoption (Ifinedo, 2011).

7.0 Conclusion

This paper discussed about the adoption and use of eP by HM Sdn. Bhd. The key finding of this study, complexity and compatibility, was highlighted as main inhibitors and barriers of eP adoption and usage by HM. As demands from Ministry of Finance increases, every company needs to adopt and use eP in the process of the transactions and business agreements. Currently, HM's management faces many new realities never before encountered which need to be tackled, and eP will assist HM to improve their strategies, operations, and performances (Liu et al., 2011; Saeed & Abdinnour-Helm, 2008). The top management trusts that by exploiting eP, they have the ability to get closer to their customers than their competitors (Bertot et al., 2010; Liu et al., 2011). The researcher believes that by providing extra training and eP workshops among the staff, this may increase the capability and eP literacy towards eP system by HM Sdn. Bhd. Among the limitations in this case study approach; firstly, because the phenomena or case being examined may be too complex, reality may become conflated and oversimplified (Hodkinson & Hodkinson, 2001). Other points of view; the objectivity of case study research are compromised because the researcher functions as the main instrument in the data collection and analysis process (Hodkinson & Hodkinson, 2001). For future research, this researcher hopes that this case study can be extended to multiple case study approach focusing on construction companies for the better findings and exploration of knowledge.

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