



## **The Benefits and Challenges of E-procurement Implementation: A Case Study of Malaysian Company**

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### **ABSTRACT**

Traditionally, procurement covers the sales and purchase activities between two entities, which covers various aspects from searching, sourcing, negotiating, ordering, and receipt, to post-purchase review. In line with the advancement of information and communication technologies, as well as with the rapid growth of the Internet, more and more people and organisations are becoming connected. In order to move with the times, many governments around the world have looked into implementing e-government systems, part of which is the e-procurement system. This paper presents the advantages as well as challenges faced when implementing an e-procurement system based on results of a case study, from the perspective of a Malaysian company (Telekom Research and Development Sdn. Bhd.) implementing an e-procurement system that has been developed internally, rather than installing an off-the-shelf software application. Internally developed e-procurement systems covers four important dimensions, namely information collected, type of application, contract negotiation, and intelligence analysis, all of which are analysed in view of e-procurement performance. The outcome of this research yielded pertinent information for the company in identifying the strengths and weaknesses of the internally developed e-procurement system, as well as enabling the organisation to highlight the practices and performance as a benchmark to measure the level of success of their own e-procurement system. Thus, due to the potential cost savings and highlighted benefits in this paper, e-procurement requires more attention from the government as related entities for greater expansion and adoption in order to ultimately contribute to the growth and well-being of the country's economy.

**Keywords:** Procurement, E-procurement, Case Study, E-government, Malaysian Industry, Internally Developed Software

**JEL Classifications:** F23, M10

### **1. INTRODUCTION**

Electronic procurement, commonly referred to as e-procurement, can be defined as the automation of an organisation's procurement processes using web-based applications. E-procurement refers to the purchase of goods and services for organisations (Turban, 2006). Procurement usually represents one of the largest expense items in a firm's cost structure (Lennon, 2002). Organisations in the public sector use e-procurement for obtaining contracts to achieve benefits such as increased in efficiency among their

employees and to save cost by getting faster and cheaper services and goods. Besides, it also helps to improve transparency and reduce corruption in procurement services among the employees and managers in the organisations.

The Malaysian government has implemented an e-procurement system (known as "e-Perolehan") and online tendering, as well as the online registration of companies and businesses in Malaysia. The e-procurement system streamlines government activities and helps improve the quality of services it renders. By subscribing

to the e-procurement system, suppliers are able to participate in the procurement exercise offered by government agencies. E-procurement converts the traditional manual procurement process in the government machinery to electronic based procurement on the Internet. As a result, it helps the business to simplify regulatory processes and cut the red tape, while still fully complying with the laws. This system benefits the government from the perspective of business' online experiences in areas such as e-marketing strategies. The government to business G2B is as useful as the G2C system, enhancing the efficiency and quality of communication and transactions with businesses, while increasing the equality and transparency of government contracting and projects (Moon, 2005).

The e-procurement system enables government agencies nationwide to procure goods and services from their suppliers electronically. E-procurement transforms the manual procurement practice into an electronic, Internet-based practice. Suppliers in turn benefit from being able to present their products on the World Wide Web; suppliers can receive, manage, and process government purchase orders, and receive payment from government agencies online by using the e-procurement system. With the automation of the entire procurement cycle within e-procurement framework, suppliers benefit significantly from the opportunity to reach a broader base of buyers than ever before coupled with lower operating costs, shorter turnaround time, additional revenue, and increased customer satisfaction.

## 2. LITERATURE REVIEW

Previous studies identified e-procurement as representing a priority e-government agenda around the world. One of the definitions stated that the implementation of e-procurement is a compliment of e-government system of a country (Schedler, 2007). It parts of the new an integrated procurement approach that has been introduced towards improving sustainability and project delivery performance (Nawi et al., 2014). Theoretical understanding of e-procurement has been defined as a general model of the system. Another more accurate definition of e-procurement is by understanding the roles of information technology (IT) through using the software and hardware in running the procurement process, while knowing very well that the role of the software and hardware will make the concept of e-procurement easier to understand (Borins, 2002).

E-procurement is the modern way of using electronic tools, such as the Internet and e-mail for business-to-business purchases online. Besides, it also helps to supply and provide services for sales online using Internet-based technology. Another definition is where supplier and buyer exchange goods and services using the Internet and IT applications. Kishor et al. (2007) defined e-procurement as the use of Internet-based Information and Communication Technologies (ICT) in order to carry out one or more transactional or strategic procurement activities.

As more and more users become connected via the Internet, a software application would facilitate transactions or procurements between different entities over the Internet. E-procurement is the use of integrated IT for part or all the procurement functions,

from the beginning to the end, that is from searching, sourcing, negotiating, ordering, and receipt, to post-purchase review (Figure 1). E-procurement has become popular among businesses, industries, and governments, and a powerful tool to improve effectiveness and efficiencies as well as improve service quality of its adopters.

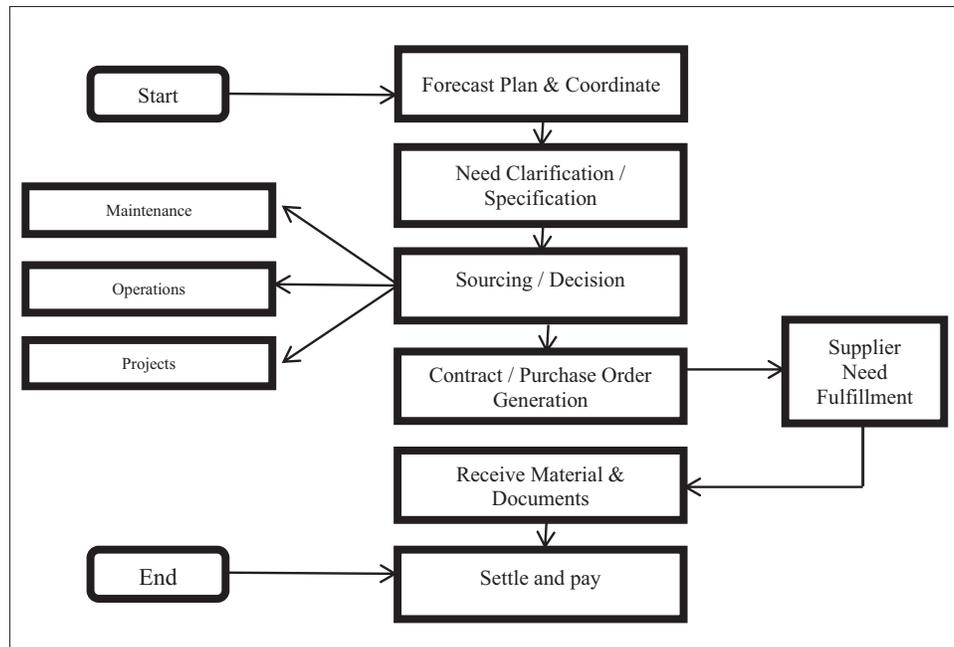
## 3. CASE STUDY

The e-procurement system in Malaysia was implemented in 2002. Nevertheless, there were 30,000 government suppliers who were registered with the Ministry of Finance, which has yet to have a complete infrastructure for accessing the e-government procurement system. Lack of commitment from top management in providing the appropriate technology infrastructure is among the problems faced by local companies to implement e-procurement. This was due to the commitment of top management to installing technology infrastructure, which give a significant impact on the willingness of organisations, especially Small and Medium Enterprises (SMEs) to conduct business electronically.

Among the obstacles faced by organisations to implement e-procurement is the difficulty of using existing software in the market. This is because most of these software packages are not compatible with the organisation's internal technology system. Another problem is that it would be time consuming for an organisation to design their own e-procurement system. Previous studies were conducted on e-procurement application in the industrial sector, but this paper presents a study more focused on an organisation which is developing its own e-procurement system. Telekom Research and Development Sdn. Bhd. (TMR&D) has taken a wise move to initiate the development of its own e-procurement system.

The study was conducted for the purpose of revealing the practice and performance of e-procurement in an organisation by identifying the differences in practice and performance of e-procurement based on demographic factors, as well as identifying any significant relationships between the practice and performance of e-procurement. Additionally, the approach used by the management is also investigated in their efforts to overcome problems and barriers related to the successful implementation of an in-house developed e-procurement system within the organisation. According to Subramaniam and Shaw (2002), to know and understand the value of the e-procurement system is the first step in motivating companies to implement the system. In order to evaluate the practice and performance of e-procurement within the organisation with their own internal e-procurement system, this paper shall identify how they deal with the problems that arise.

This study is limited to the electronic procurement practices based on e-procurement performance, as well as covering the identification of problems encountered by the organisation in the implementation of e-procurement developed internally, as compared to the purchased software from the market. This study was performed in TMR&D, which is a subsidiary of Telekom

**Figure 1:** An overview of procurement process

Malaysia Berhad. The study focused on the analysis of a three-tier management level, namely the top management, middle management, and the support level.

Theoretically, there are four dimensions in the practice of e-procurement developed internally by an organisation, which includes the information collected, type of application, contract negotiation, and intelligence analysis. E-procurement performance is viewed in terms of interest earned during the implementation of e-procurement. Demographic factors such as gender, education level, experience, and job category were used to see the difference between practice and performance of e-procurement as compared to the demographic factors of respondents.

The implementation of ICT in dealing with the various government agencies has become crucial. TMR&D has taken the initiative to develop its own e-procurement system within the company. Therefore, this study is conducted not only for the benefit of TMR&D but also other organisations which are looking for ideas to improve their e-procurement system.

The outcome of this research has enable TMR&D management to identify the strengths and weaknesses of their own internal e-procurement system based on feedback from their own employees. Besides, it also enables the organisation to identify the practices and performance of these systems and for them to set a bench mark to measure level of success of their own e-procurement system. This helped to identify the weaknesses in the system and to enhance the functions. Proper planning and implementation would assist in improving the efficiency and effectiveness of the system to the organisation.

Any other organisations developing their own e-procurement system for internal use within the company can refer to TMR&D to seek out advice and engage the expertise of the company. TMR&D is a good example that an internally developed

e-procurement system is capable and reliable, and could ultimately help organisations to improve efficiency, productivity, and gain competitive advantages in its own field.

#### 4. BENEFITS IN PRACTISING E-PROCUREMENT

Adopting an e-procurement system has brought great benefits to the government and it is also another way for the government to save on the management cost and at the same time become more efficient in the procurement process of goods online. The main advantages e-procurement can deliver include cost reduction, process reorganisation, improved contract fulfilment, increased spending under management, and many other benefits (Tiago, 2009).

The significant cost saving of e-procurement to the government is in the reduction of cost and effort of processing the purchase order which can be manipulated electronically, as well as the marked reduction in inventory costs and decreased order fulfilment time. Previous researchers (Ronchi, 2010) identified and measured four types of cost savings from using the e-procurement system, namely order cost, administrative cost, lead-time order cost, and opportunity cost of capital.

Meanwhile, other researchers (Thai, 2001) concluded that practising e-procurement will provide quality bidding, efficient timeliness, cost saving, minimising effort in doing business, reduce financial risks and technical risks, and finally increase supplier competition, which would lead to save cost of buying goods or services at high prices. Additionally, it was stated previously (Layne and Lee, 2001) that bidding for public sector projects is the best place to practise e-procurement of goods and services, and this is because of the high transparency of information resulting from electronic bidding.

The e-procurement system offers a more effective and efficient procurement process in line with the country's economic transformation to the knowledge based economy (K-economy). It is a way for the government to promote the widespread adoption of e-business in the country. E-procurement helps provide the latest product information and pricing to the government which is made available online. The system is supposed to be up to date with the latest information that will help the buyer to make a more accurate procurement decision.

## 5. CHALLENGES IN E-PROCUREMENT IMPLEMENTATION

E-procurement systems are a relatively recent development in the business application area and the lack of benchmark has enabled reference models to be developed, especially in new firms that are just beginning to learn of these systems' functionalities and their uses in their organisations. Based on previous researchers, there are factors contributing to challenges in the implementation of e-procurement such as technology, infrastructure and legislation, environment; besides, resource constraints, and organisational and management characteristics are also contributing factors to the success, or otherwise, of an e-procurement implementation.

External factors from the industry, market, government, and technological change are beyond the control of organisations. However, these barriers can be minimised and even completely mitigated through careful planning and research. The technology barriers to suppliers include understanding and commitment to specialist software and the start-up fee required by the vendors that is usually beyond the financial capabilities of SMEs or that they do not want to commit to such a high-priced system. The declared support of such systems is generally from the larger companies that would benefit more due to the large volume of trade and numerous transactions. The usefulness and security issues of the system are major concerns for potential adopters. The wide-spread use of e-procurement systems also depends on the availability of supporting infrastructures such as sufficient broadband coverage.

Inadequacies in government policies and legislation are areas to be highlighted in the system. The standard procedure for governmental tendering process which mandates the buying of printed tender documents in physical offices by interested parties in person is a good example. This prohibits the use of e-tendering system and presents a huge setback for the government attempting to establish an electronic government system. Lack of standards in the development of e-procurement systems results in users of one system being unable to communicate electronically with users of other different systems, creating a diverse but fragmented e-procurement environment.

## 6. CONCLUSION

E-procurement is more than just a system for making purchases online. The system has been implemented to achieve significant

benefits such as cost savings and increased efficiency. Other advantages in applying an e-procurement system are a faster government procurement process and higher transparency compared to traditional procurement and tendering methods. The system helps government agencies in making more informed and accurate decisions through providing easy access and relevant information about each bid and competitors. Awarding process would be very organised and precise because the decision-making committees will have better knowledge about the bids and they could obtain better pricing which would ultimately save a lot of unnecessary costs.

It is important for the government to pay more attention on the availability of infrastructure, such as IT and ICT, for a better e-procurement implementation. ICT tools are important to help increase effectiveness and efficiency. Business communications, business process, cost reduction and cycle time, explore new markets and business opportunities, increase transparency in contracts, and overall competitiveness, are major and pertinent areas to be given more focus in improving the e-procurement system in government agencies.

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