

THE IMPLEMENTATION OF E-TENDERING: THE CLIENTS' PERSPECTIVE

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ABSTRACT

In construction industry, the most critical phases throughout the project life cycle is tendering phase. The traditional tendering method is often costly which involved paper intensive, expensive and tedious process that eventually cause possibility of errors in the documentation. This leads to the emergence of using the e-tendering system in the construction industry. E-tendering is a system that shift manual paper to fully electronic system to enable means of communication. In line with the Sixth Strategic Thrust of the Construction Industry Master Plan (CIMP) 2006 – 2015's, Ministry of Works launched the electronic tender management system, called e-tendering. The Public Work Department (PWD) highlighted that the system is launched to develop communication between parties in a project, to increase government and tenderers productivity and to provide a save, trusted and efficient works. The focal point of this paper are the factors and strategies of e-tendering implementation based on the client's perspectives in Malaysian Construction Industry. A quantitative method was applied and the data were analysed using the average index analysis. The reduction in time of printing, compiling, sorting tender price and received the tender document on time are among the factors influence the client's decision to apply e-tendering system. The respondents agreed that the top management had played the most significant roles by providing the opportunity for the employee to attend the training related to implementation of e-tendering system. The financial support by the government and guideline notes are also important to ensure the system can be fully applied in the construction industry.

Keywords: e-tendering; e-procurement; Procurement; Strategies; Tendering

1.0 INTRODUCTION

Traditional tendering system has gradually being replaced by the implementation of electronic tendering (e-tendering). It was widely accepted by public and grown significantly in international community. The procurement processes become more efficient and transparency by e-tendering in the private organizations and public jurisdictions around the world.

The e-procurement was introduced in Malaysian since 1999 by Commerce Dot Com (CDC) in line with the promotion of electronic government (e-Government) together with the aims to streamline public procurement process and improve the quality of services (Kassim and Hussin, 2013). The implementation of e-tendering is coordinated with the objectives of Malaysian government procurement which emphasize the sustainable supply of goods and services, high value of money, promoting the local industries and as a way to achieve the National Development Goals. Thus, National e-Tendering Initiative (NeTI) is introduced and undertaking by the Ministry of Works (MOW)

NeTI was initiated in 2011 in order to integrate and greatly improve the tedious and multi-faceted tendering process into a streamlined, progressive and 'intelligent' one by one use of procedural streamlining and technology empowerment (Alsagoff, Lou and Zainon, 2006). It is an effort to promote and develop the tender process by using internet and web as a medium of instruction.

The e-tendering has been identified for some time as being one of the potential tools to assist in changing the construction industry's culture and improving its processes (Lavelle and Bardon, 2009). The purpose of e-tendering in the construction industry is to increase the use of information technology across the industries, increase the effectiveness of exchanging the information between various parties in the project and minimizing the usage of paper (Patil, 2015). However, there are challenges to the adoption which comprised of lack of awareness, no quantifiable measurements or indicators of success, lack of computer literacy, limited skilled workers; and security and legislation. Furthermore, the largest barrier of the adoption of collaborative environments is the people as opposed to the technology (Choen, Lou and Alshawi, 2009).

This paper focuses on the perspective of clients in the adoption and implementation of e-tendering in Malaysian construction industry. The objectives of this paper are to evaluate the factors that influenced the decisions of e-tendering's implementation and to develop the strategies of implementing e-tendering.

2.0 E-TENDERING

The traditional tendering process started when the client would like to invite the contractors to join in their projects. The client will advertise in the website or newspapers for inviting the tenderers. It requires the employees to coordinate vast amounts of paperwork (Noraizah et al., 2016). The qualified tenderers will start to purchase the tender documentation, filling it and submit back to the client before the closing date.

Accordingly, e-tendering changed the process from dial up model-to-modern computer access to elaborate the internet based tendering system. It has been recognized quite some time because it is a useful tool which may help to shorten the tendering process and change the culture of the construction process.

2.1 Factors Influenced Decisions of E-Tendering Implementation

Generally, the construction industry is well known as being a traditional and fragmented industry; an information and communication reliant industry (Lou, 2007). The tendering phase is the most important phases where it shape the contractual and legislative agreement between the client, consultant team, contractor and other members of the project (Choen, Lou and Alshawi, 2009). The time taken for preparing the tender documents can be reduced through the adoption of e-tendering (Sulankivi, 2004).

E-tendering system may also decrease the number of manpower hours that involved in the estimating stages and tender enquiries stage (Choen, Lou and Alshawi, 2009). Through e-tendering system, the process of preparing the tender documentation is similar but the paper based documents had change to the softcopy documents so that it can shorten the completion time.

Traditionally, the preparation of tender document requires the client to spend high cost on the printing. 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 marked reduction in inventory costs and decreased order fulfilment time (Nawi et al., 2016). Thus, through e-tendering system the clients are able to reduce spending high cost in producing and preparing the tender documents while all documents can be uploaded and share via the internet.

Implementation of e-tendering can also help in improving the communication between the parties who joined in the project and developing better business relationships (Cherian and Aravindh Kumaran, 2016). The information in the system can be shared to all parties who allowed to participate in the project. Hence, it can help to reduce the potential risk, ensure the information is well distributed and the project can be delivered on time.

E-tendering is welcomed by the employees because it may improve the productivity of work, ensure the effectiveness of work and the data and information may not be repetitive in the system (Choen, Lou and Alshawi, 2009). Organizations who applied e-tendering had enjoyed better productivity, efficiency and accuracy in the overall tendering processes. E-tendering can also help in improving the productivity of work and ensure the effectiveness of work (Eadie et.al, 2007; Everingham, 2006)

The clients may accelerate their evaluation process and may also enhance its defensibility through e-tendering system subsequently it is an automated system whereby it can help to evaluate the information automatically in the system. The connecting collaborative environments in the organization can provide a competitive advantage through improved efficiency, speed, data accuracy and effectiveness in everyday business processes and management (Choen, Lou and Alshawi, 2009). The system may reduce the risks that possibly generated when eliminates the mountain of paper which created by physical evaluations.

2.2 Strategies for Implementing E-Tendering

There are many concerns that coupled with the statistic proved that the current construction industry is slow in accepting changes. Part of challenges in adopting e-tendering in construction industry are low awareness of customers and suppliers, huge implementation cost, lack of expert professionals, reluctance from management and hesitant to change the way of working being (Cherian and Aravindh Kumaran, 2016).

There are several strategies that can help to increase the adoption of e-tendering system in the construction industry. Based on the literature, the strategies highlighted as the need to provide sufficient training for the employees, the system itself must be well-tested, providing the reference and guideline notes, and support from the top management and local government.

Other than that, it is significant for an organization to hire expertise personnel, ensure that the system is well-organized and simplified and also the need of involvement of a project manager in implementing the e-tendering system for a project are also the strategies which may provide the opportunity of successful implementation of e-tendering in a project. The most often cited strategies for implementing e-tendering are summarized in Table 1 as follows;

Table 1: The Strategies for Implementing E-Tendering

Strategies	Sources
Provide training for employees	<ul style="list-style-type: none"> • Choen, Lou and Alshawi (2009) • CRC Construction Innovation (2006) • Kjewski and Weippert (2014) • Shu Hui <i>et al.</i> (2011)
System tested	<ul style="list-style-type: none"> • Lou (2007)
Provide reference and guideline notes	<ul style="list-style-type: none"> • RICS (2005)
Support from the top management and local government	<ul style="list-style-type: none"> • Choen, Lou and Alshawi (2009) • Kaliannan, Awang and Raman (2009) • Kaliannan, Raman and Dorasamy (2009) • Daud <i>et al.</i> (2013)
Employed expertise personnel	<ul style="list-style-type: none"> • Choen, Lou and Alshawi (2009)
Simplified and organized the system	<ul style="list-style-type: none"> • Choen, Lou and Alshawi (2009) • Kjewski and Weippert (2014)
Involvement of project manager in the system	<ul style="list-style-type: none"> • Shu Hui <i>et al.</i> (2011)

3.0 METHODOLOGY

The methodology of this research is quantitative method through questionnaire surveys. The questionnaires were distributed to professionals of randomly selected developer's organizations in Kuala Lumpur and Selangor. The survey was conducted in order to obtain data in relation to the factors that influences the client's decision to implement e-tendering system for their construction projects and the strategies to be applied to assist the implementation of e-tendering in construction industry.

The questions of survey were designed in multiple choices format using Five-Points Likert Scale (1=not important, 2=less important, 3=moderate, 4=important and 5=very important). The outcome from the questionnaire are made based on the ranking of average index analysis for each research objective to evaluate the most significant factors and strategies affecting the implementation of the e-tendering system.

4.0 FINDINGS

The results collected from the questionnaire survey are analysed and interpreted accordingly in order to achieve the research’s objectives by using histogram and bar chart.

Table 2: Respondents’ Responses

Descriptions	Percentages of response (%)	
	Yes	No
Responses received	72.0	28.0
Respondents’ awareness towards e-tendering	83.0	16.7
Respondents’ implement e-tendering	64.0	36.0

According to Table 2, it shows that through the questionnaire surveys conducted, the response rate is 72%. From total responses, 83.3% are aware on the presence of e-tendering system in construction industry and 64% of them are implementing the system for their project.

Hence, through the above result, majority of the developer companies maintained the traditional tendering method in their projects even though the frequency of respondents’ awareness about e-tendering is higher. It is an inverse proportion which the respondents who are implementing e-tendering system in their project is still lower even majority of them are aware about the system.

From the total responses, the main reasons highlighted by respondents in implementing e-tendering system are reduction of overall time and cost that eventually promoting sustainable system by adopting less paperwork. This had been supported by Oyediran and Akintola (2011) that the transaction cost in tendering can be save up to 42% from the original cost.

4.1 Analysis on the Factors Influence the Decisions in Implementing E-Tendering

Figure 1 shows reduction in time of printing, compiling and sorting tender price as the highest ranking among all factors which is at 4.56 average index. As described by Sulankivi (2004) the time needed to print and binding the tender documents can be cut as all documentation will be uploaded in the system. The next significant factor is receiving the tender on time which stated the average index of 4.25 as most of the client wish to receive all the tender documents from the tenderers on time.

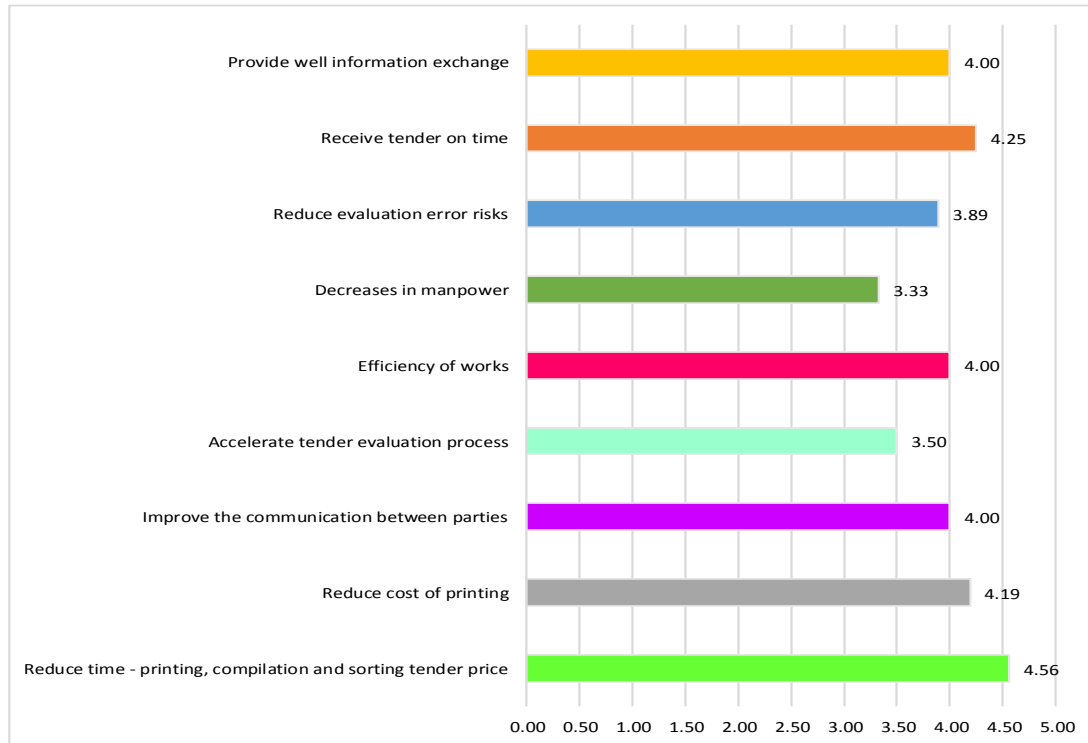


Figure 1: Average index on the factors influence the decision in implementing E-Tendering Based on Client’s Perspective.

Furthermore, it followed by reduction of cost for printing the tender documents with the average index of 4.19. In e-tendering system, the works can be more efficient (Patil, 2015) as all the documentation had been uploaded via Internet into the system, so the bidders may be able to access into the system after purchasing tender from the client’s side. The system will may help to reduce the workloads of quantity surveyor and clients during the early stage of tendering.

Moreover, there are three (3) other factors obtained the same average index of 4.00 that are improvement in work efficiency, provide well information exchange and improving the communication between parties. According to Choen, Lou and Mustafa (2009), e-tender system may improve the productivity of work, ensure the effectiveness of work and the information received may not be repetitive in e-tendering system.

However, the lowest average index is decreasing in manpower which is 3.33. It shows less favorable factors influence the client’s decision in implementation of this system. The respondents believed that the amount of manpower to be involved in the tendering process did not really decreases as some manpower are still needed in operating the system. Therefore, the respondents may have the viewed that the factors of decreasing in manpower will not influence the decisions of clients in implementing e-tendering. This result was inversed the statement of Lindsley and Stephenson (2008), whereby they had showed that the manpower for tendering process can be reduced by using e-tender system.

Figure 2 shows the percentage of significant roles in implementing e-tendering system. Through this study, the respondents agreed that the top management plays most significant role in order to implement the e-tendering system in Malaysian Construction

Industry successfully with the percentage of 36% as the staff may be influence by the decision made by the top management for the successful implementation of the system. This statement is agreed by (Choen, Lou and Alshawi, 2009) as that the support from the top management can affect the decisions on implementation of e-tendering system. Besides that, the local government or local authorities with the average index of 3.58 placed at second (2nd) ranked. However, minority of the respondents agreed that senior QS or others parties such as project manager had played the important roles in affecting the implementation of e-tendering as these group may give opinions on the system but the final decision will be made only by the top management in the company.

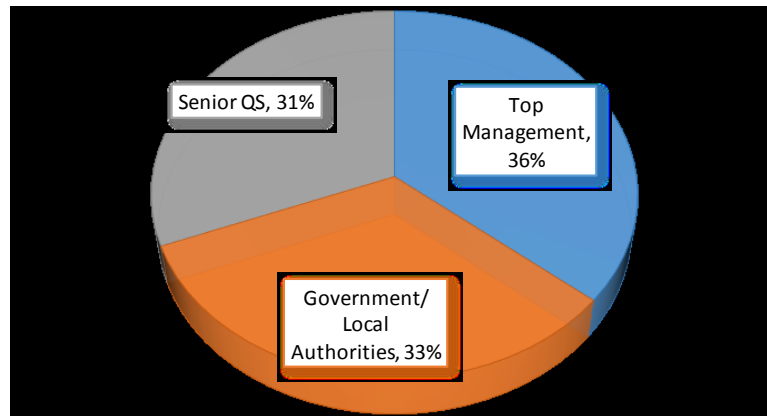


Figure 2: Percentage of Significant Roles

4.2 Analysis on the Strategies in Implementation of E-Tendering in Malaysian Construction Industry.

The rankings of the strategies on implementation of e-tendering based on client's perspectives in the Malaysian Construction Industry are examined based on its average index in this section.

Based on Figure 3, with the average index at 4.50 it is most important to provide trainings or courses on e-tendering for employees. It is accepted as the most vital strategy among six (6) other factors on the successful implementation of e-tendering system. This strategy had been supported by Choen, Lou and Mustafa (2009) that attending the course may improve their motivation and interest in e-tendering system.

Besides, there are two (2) types of strategies with the average index of 4.22. The respondents agreed that references and guideline notes and support from top management and local government inclusive of financial support are also the important key strategies towards successful implementation on the system. In Malaysia, RICS (2005) had published the guidance note of e-tendering system to the users when using the system. As the system may require the cost of upgrading from time to time, financial support and encouragement of the system from the government may assist the successful implementation of the system to the small and medium scale company as some of them may not be able to afford the maintenance cost.

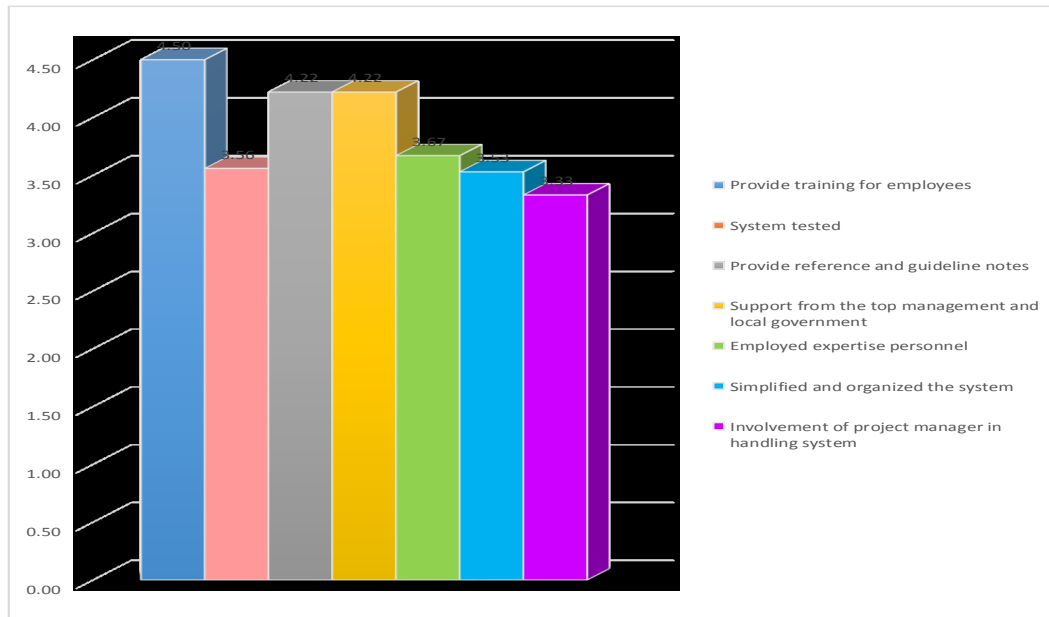


Figure 3: Average Index of Strategies of Implementing E-tendering

Conversely, the involvement of project manager in handling the system may not be the important strategy in the implementation as it shows the lowest average index which is 3.33. The ability of the project manager on handling the system can be replaced by the other information technologies experts.

In the next ten (10) years, the implementation of e-tendering is expected to be successfully applied in which 94.44% of the respondents had agreed and planned to fully apply the e-tendering system. The responses emphasized that e-tendering can 1) offers reduction of time and cost, 2) improves productivity and work efficiency, 3) helps in saving environment and 4) provides a simple and easy process to be managed.

5.0 CONCLUSION

As a conclusion, well cooperation between the local government and top management of the companies may help the e-tendering system to be fully implemented in Malaysian Construction Industry in the next ten (10) years as the respondents agreed on benefits of the system as compared to the traditional paper-based method such as reduce the tendering time period and cost and the overall tendering works may easy to manage. As the cost and time constraint are the main factors that influenced the decision of clients in implementing e-tendering in the companies, the current traditional paper based system and e-tendering system can be improved with the innovation on the management of information technology as well as understanding how the system works. The implementation of the system can be done with the support from the top management of the organization by providing the relevant training to the employee and guideline on the system.

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