Prequalification and Classification System for Enterprises in Public Sector of Jordanian E-government

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Abstract:
The use of information and communication technology (ICTs) in the public sector is one of the most important effects were caused by IT. Nowadays, with the development of e-government, set of information are available about the public sector in electronic databases significantly, that may be agree with each other. Public sector information is considered the most important thing in e-government environment, it has a great value (Shao & Wang, 2010). Moreover, the government environment become is using the Internet and information technology, mainly on their interactions with businesses and citizens, and among themselves. One of the e-Government initiatives is the development of the government-to-business (G2B) system, which is an agenda sets to promote a higher service quality between government entities and the business sector (Dong, Xiong & Han, 2010).This paper aims to discover the importance of the government's small and medium enterprises under the umbrella of e-services G2B. G2B transactions include various services exchanged between the government and the business community, including the deployment of policies and memos, rules and regulations. It includes commercial services provided access to current business information, application forms are loaded, renewal of licenses, registration of companies, to obtain permits, pay taxes, e-Procurement service ERAs (slaves and Abu Shanab, 2010).

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Introduction
E-government has become a natural extension and a reality of the technological revolution that has accompanied the knowledge society. The E-government added new concepts in the science of public administration such as: citizen participation in the evaluation of government performance, accountability, transparency, and changed the political practices that transitioned to E-governance and e-democracy. E-government, which means "Government initiatives helping local authorities provide planning services online and accessible via the internet and email, for example, the Planning Portal website" (Mohammad, Almarabeh & Ali, 2009), depends on diverse expectations exist within its strategies, like restructuring administrations, achieving financial benefits/cost, remedy for previous policy failures, or a delivering services to citizens.

There are lot of problems that will occur at the duration of processing time such as data lost and bureaucratic problems. Then there are many forms that contractor needs to be fulfils. The large volume of papers needs a lot of manpower to arrange tender documents (Ng, Chiu & Hung, 2007). This tendering process used a lot of space to store the tender documents and it usually costly to both client and contractor. The public tendering processes imposed by the government, are aiming at reducing the possibility of waste and abuse of public money (Fong & Yan, 2009). Preparing tendering documentation and conducting tender obtaining processes requires much labor which is costly for suppliers. The management of paper-based documents as product samples and confidential information presents an obstacle (Abdullah, Mohamad Noor & Man, 2008).

According to Almarabeh (2011), the vision of e-Government in Jordan would be an essential and active participant in the economic and social development with information and communication technology to enable easy access to government information and services for all Users regardless of their geographic location or economic status or professional capacity. The aim of Jordan Digital Strategy for government is to make government information, services, and processes, available by using ICT to transform the way government engage with

people and businesses. Through this study will develop prototype for public sector in Jordan for the tendering processes. The study is hope to improve the manual tendering processes; and yet makes it convenient to the contractors and clients to manage the tenders and protect the SMEs through classification the government tendering into levels which allow the SMEs competition between as, and compete with large companies with each other within another level. It is also will increase the integrity and transparency of the prequalification tendering processes.

There are different types of G2B systems. One of them is an independent system in which government agencies act as a single user. Another type is an interdependent system that requires interactions between government agencies and business users, and is being support by other government organizations such as the account general and federal registration department and management and transparency of government tenders results (Kassim & Hussin, 2010). Jordanian has been investing heavily in developing its ICT sector, aiming at enhancing the performance of its public and private sector organizations in terms of service provision, efficiency, accuracy, time and satisfaction (Obeidat & Abu-Shanab, 2010).

Referring Al-Zoubi, Thi and Lim (2011) Jordanian government may have to concentrate on achieving high quality low-level informative services before moving to more advanced levels. This will give the government the time to focus on simple eGovernment adoption that are more responsive to their needs as well as establish a positive online relationship with businesses. SMEs play major roles in economies by creating jobs and increasing income levels of a majority of the people (Ongori & Migiro, 2010). Tendering process needs many improvements since it still used the conventional process (Abdullah, Mohamad Noor & Man, 2008), therefore, there is a need to design a tender management system for public sector depends on the classification of enterprises based on capital allows classification of tenders according to the rankings of enterprises. This prototype will protect the SMEs from extinction via creation a fair environment for competition. On the other hand, reduce the size of administrative corruption by showing the results directly to companies.The scope of study focus on the build of tender management system for public sector in Jordan for help the owners of SMEs to compete through the classification of government tenders with more transparency in showing of the results of tendering.

Government-to-Business System
The general concept and services of e-business system in public sector is the transformation of traditional, manual procurement process to an electronic system. It involves participations from two major players; federal agencies as

buyers and private businesses as suppliers. In addition, there are also involvements by other agencies such as banks, Accounting General and certification related agencies as supporting organizations. While the usage functions and platforms are similar to the B2B marketplace, argue the underlying processes of G2B system are complex and an extra set of influential factors must be considered, that include financial risks, design and implementation risks and legislative issues (Henriksen & Mahnke, 2005).

The core functions and purposes of G2B systems differ between private and public sector usage. For the former, the main goal of usage is to reduce operational costs, maximise profits and improve performance, whereas for the latter, the main agenda is for value creations in which to reduce transparency (Moe, 2004), improve information flow and management, and more informed decision making (Kassim & Hussin, 2010). Vaidya, Sajeev and Callender (2006) also highlight on the detail objectives for the G2B system. These include to increase top-level funding availability, create open marketing which every supplier can compete, harness aggregated buying power of the government to achieve dynamic pricing of goods and services, improve efficiency of the procurement cycle while meeting all legislate mandates and ensure compliance with purchasing policies, both within departments and across the government agencies.

One of the key strategies to improve public sector service performance is by adopting information technology in the administration activities. Kassim and Hussin (2010) refer that the ability of a public sector to adopt new business models and IT innovation as an essential indicator of its transformation success. Similarly, the IT uptake to automate the G2B processes is seen as a strategy to improve the public sector service performance.

Tender Management System
E-Tendering is a process which replaces the traditional paper tendering system in the purchasing of products and services and is a means of electronically notifying, involving, vetting and selecting suppliers. For the seller it is a means of electronically competitively bidding for contracts. Among the major benefits of e-tendering is the reduction of costs from tender documentation production, a shortened tender period, a secured method of sending and receiving tenders and a more systematic and progressive method of working. E-tenders are also portable, inexpensive and simple to compile (Forbes-Pitt, 2006; Utvich, 2005).

Tenders can be divided into several types such as open, restricted and negotiation tender. Open tender is a tender that offered to any interested contractors. Negotiated tender is carried out under special circumstances

whereby is done when the clients need some expertise that capable in doing such projects. Restricted tender is applying when purchase authority has procedure in place, which will definitely lead to the award of a contract. The procedure is restricted because contractors are first invited to express an interest and those contractors that have qualified against certain criteria are invited to submit tender (Du et al., 2004). Tendering processes is a complex process. A typical one involves many business procedures such as tender specification preparation, tender advertisement, tender aggregation, tender evaluation, tender awarding, and contract monitoring (Ng et al., 2007).

Prequalification process

Prequalification tendering process is to identify qualified constructors based on some criteria as requested by clients. Besides that, this stage also certifies all the prequalification documents that are required to be submitted by constructors. Prequalification stage is generally preferred by clients to minimize the risks and failures. It also will enhance the performance levels of selected contractors. The prequalification tendering practices are different between countries according to the rules, regulations and procedures to be followed (Lou, & Alshawi, 2009).

The previous study examined several prequalification practices in Hong Kong, Australia and USA (Palaneeswaran & Kumaraswamy, 2001). Construction Industry Development Agency in Australia has recommended three categories of prequalification criteria namely mandatory, additional and reserved. Technical, financial, quality assurance, time performance, human resource management, skill, occupational health and safety are considered as mandatory whilst claims performance and research development are regarded as additional and reserved. However, construction industry in Hong Kong has identified several different prequalification criteria such as experience, corporate, workload, support functions, resources and facilities. Whilst in USA, different public clients use various prequalification ratings.Other research study about Turkey has determined four main prequalification criteria in construction industry in including ability to complete projects, expertise, experienced technical staff and resources (Topcu, 2004).

Research Methodology

Ishak & Alias (2005) refers to that methodology is a rule for resolve a problem, and it's not just collections of method to perform a research, the methodolgy has specific components such as phases, tasks, methods, techniques and tools. This study depend on methodology which designing from Vaishnavi and Kuechler (2008); this methodology has five stage (Awareness of the Problem, Suggestion, Development, Evaluation and conclusion) as illustreted in figure 3.1
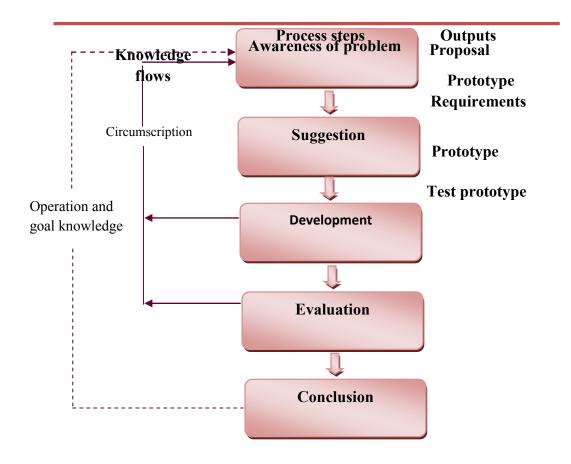
Figure 3.1: Research Design Methodology (Vaishnavi & Kuechler, 2008)

Awareness of Problem

First stage of methodology is to understanding of the objectives and the scope of study, as well as the problems, which are required to solve. In this case, the awareness of the problem arises because the understanding of the electronic environment of the tendering management system for public sector in Jordan, to help the SMEs for competition in government tendering by classification the level of work and company depend on capital. On other hand, analysis the result and display directly to the participation to be the government more transparency.

Suggestion

The study suggests designing a tendering management system for public sector in Jordan. During the design phase, Unified Modeling Language (UML) will be used to involve general use cases such as use case diagrams to show the user retaliations and the system components. Sequence diagram to show how the

system work based on the use case diagram, follow collaboration diagram to illustrate the main components of the sequence diagram and the relation between them. The other diagram will be designing is activity diagram; this diagram used to describe operational workflows of a system. Finally, class diagram will be drawing to show inter-relationships, the operations and attributes of the classes of the system. The diagrams will be produce by use rational rose 2000.

Development

The tentative design is implementing in this phase. The design is translate into program code. C# language will used for coding. Microsoft SQL Server 2005 is use as the Database to store and retrieve all information. The development of the prototype follows the Prototyping approach methodology.

Evaluation

The evaluation is performed to determine the level of usefulness and operability of the system after the system has been developed; it is tested through a questionnaire. The evaluation is base on usability testing by using System Usability Scale (SUS) proposed by Brooke (Bangor, Kortum & Miller, 2008).

Conclusion

This phase is the final step of a specific research effort. The project will be making into document, which includes detailed information about the system.

Signification of Study

The signification of this study is to integrate the structure of various services, including tender invitation document preparation, uploading, tender obtaining, tender submitting, tender opening and tender analysis. Owing to this system, tendering efficiency is increase and the possibility for tender collusion is severely reduced. Contractor participation is thus encouraged and a nation's competitive ability is consequently increased.

Conclusion

Tendering processes needs some improvements as they are being used widely by government and private sector. The improvements that attempts to apply are to use Web services technology as a medium to process all the tenders that submitted by the interested contractors. This study is to develop an efficient Web application for prequalification tendering processes.

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