Key Issues in E-Procurement: Procurement Implementation and Operation in the Public Sector

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ABSTRACT

The paper examines procurement from the perspective that covers the sales and purchase activities between two entities, which cover various aspect from searching, sourcing, negotiating, ordering and receipt, to post-purchase review. The literature relating to e-procurement implementation and operation is reviewed, e-procurement system implementation, boarder IT infrastrative issue and behavioural and relational impact of e-procurement. The research carried out was intended to explore the perception and reflection of both early or late adopters of e-procurement. The study is basically a descriptive reach, hence it relies heavily on secondary sources of data collection specifically; the study is based on in dept study and analysis of other provision paper. The study also described the difficulties faced in e-procurement implementation and reasons that have led to the implementation of e-procurement, information technology tools used and preferred for procurement.

Keywords: *Procurement, E-procurement Information Technology (IT). Electronic Procurement System (EPS).*

Introduction

The origin of E-Procurement began in the 1980s, with the development of electronic data interchange (EDI). EDI allowed customers and suppliers to send and receive orders (and invoices as well) using call-forwarding networks. In the 1990s, technology, as it tends to do, improve and software companies began to develop electronic catalogues, specifically for the vendor's use and, E-Procurement software has become a mixture of the two: a platform for sending and receiving orders and various catalogues. Market places have also proved to be a popular addition to E-Procurement software.

There is no doubt that the Internet is drastically changing the way purchasing is done globally. It has grown and evolved into a complex marketplace with many players offering a variety of E-Procurement and business-to-business services. E-Procurement can include services such as hosting of databases, catalogue management, managing tenders and auctions on behalf of clients through to a complete outsourced procurement service.

Robaty, & Bell, (2013) said that during the internet era, E-Procurement has witnessed a steep rise in marketplace deployment; this has been followed by a considerable range of failures. A number of larger technology suppliers are currently left to support each tiny and enormous business. Flexibility has been a key enabler in supporting network evolution across a varied range of domains. The study examines the flexibility around marketplace evolution, success and failure; inter relationships between architectural flexibility and the evolving web technology. A systematic literature review was administered to uncover the changes taken place over the past fifteen years. A conceptual model is made early in the analysis so as to supply discourse underpinning. Of the 22 relevant studies, one addressed analysis trends around E-Procurement in pharmaceutical organizations. Three studies addressed E-Procurement in financial organizations. A range of flexibility classes are uncovered by the systematic literature review which are used as a way to support versatile E-Procurement marketplace style and adoption, suggesting E-Procurement marketplace evolution over the duration of the study.

Objective of the Study

The central objective of the study is to evaluate the key issues in E-procurement.

- To explore/ identify the difficulties faced in E-procurement implementation
- To identify the reasons that has led to the implementation of E-procurement.
- To study the extent when information technology tools are used in e-procurement.
- To study the documents exchanged in E-procurement through Electronic Data Interchange (EDI)
- To identify the scopes for further up-grading of Information Technology (IT) to support the E-Procurement process.

Research Methodology

The study is basically a descriptive research, hence, it relies heavily on secondary sources of data collection. Specifically, the study is based on in-depth study and analysis of provision paper.

Concept of Procurement/Public Procurement Regulations in Nigeria

Procurement is the act of acquiring, buying goods, services or works from an external source, often via a tendering or bid process. It consists of all the activities required for obtaining items from a supplier to the warehouse. Procurement is the important element of Business operation which involves commerce between two or more businesses.

Public procurement in Nigeria is regulated by the public procurement ACT of 2007, the public procurement regulations and other guidelines. Before the enactment of the PPA 2007, there was no adequate regulatory framework for public procurement in Nigeria and public procurement practices in the country were marred by much anomalies such as lack of procurement planning, absence of competitive bidding and lack of transparency in the award of government contract, lack of accountability, inflection of contract cost through connivance between procuring entities and supplier contractors and service providers. etc.

The regulatory authority of public procurement in Nigeria is the Bureau of public procurement established by the section 3 of the ACT. The BPP is the operating instrument of the National Council on Public Procurement also established by section 1 of the PPA 2007 (FGN Public Procurement Act 2007).

Concept of E-Procurement

E-Procurement is an automation tool for corporate purchasing process. The core definition is a business to business sale using the internet as the medium for order processing. E-Procurement is more than the simple shortening of the supply chain with the Internet closing time and distance obstacles between suppliers and users of products. In addition,

According to ***Chopra, (2001),*** the E-Procurement is Business to Business purchasing practices that utilised electronic commerce (e-commerce) to identify potential sources of supply, to purchase goods and service, to transfer payment and to interact with suppliers. ***Neef (2001),*** considered an E-Procurement is an important step forward in the development of the enterprise, where the E-Procurement is a process of connecting customer to business partners.

Croom, & Brandon, (2004), defined an E-Procurement as the use of internet-based integrated information and communication technologies to hold out individual or all stages of the procurement method together with negotiation, search, sourcing, receipt, ordering, and post-purchase review.

Black, (2005), stated that electronic tendering is an electronic version of traditional tendering process. It convert traditional acquisition, purchase of goods and services, supply of goods and services into the Electronic process such as e-tendering, e-awarding, e-auction, e-sourcing, by using Internet. E-tendering is basically an expression used to describe the dissemination and receipt of tender information, indication of interest in tendering, receipt of tender documents, submission of tender sum and final selection of successful tender for contracts via the internet.

Kameshwaran, S. (2007), shared that electronic procurement is a method by which goods and services can be purchased for the organization through internet and can supervise the flow of goods and services in the business.

Baily, (2008), said that the E-Procurement is the business to business (B2B) or business to consumer (B2C) or business to government (B2G) purchase and sale of supplies, work and services through the Internet as well as other information and networking systems, such as electronic data interchange and enterprise resource planning.

According to ***Gunasekaran, (2009)***, E-Procurement gives an opportunity to suppliers and patrons, to enlarge the selection of merchandise, and makes information easily procurable. E- Procurement connects a vast network of business which helps business people to search necessary information and contact people in a convenient way.

Forms of E-procurement

The following are various form of e-procurement.

- **E-sourcing:** It supports the specification phase of the procurement. It can be used to prequalify suppliers. It also identifies suppliers that can be used in the selection phase.
- **E-tendering:** It supports the selection stage and acts as a communication platform between the procuring firm and suppliers. It includes analysis and assessment activities but it does not support closing the deal with suppliers. In short it facilitates a large part of the tactical procurement process.
- **E-auctioning:** It supports the contract stage. It can facilitate the closing of a deal with suppliers if they agree with price.
- **E-ordering and web based Enterprise Resources Planning (ERP):** It is the process of creating and approving procurement requisitions, placing orders, receiving goods and services ordered.
- **E-informing:** is not directly associated with a stage in the procurement process. It is the process of gathering and distributing procurement information both from and to internal and external parties using Internet technology. ***Smeltzer, & Carr, (2002)***

E-Procurement Tools and Applications

- Some E-Procurement tools and applications include26:

- Electronic System to support traditional Procurement (Manual Procurement)
- Electronic Data Interchange (EDI)
- Enterprise Resources Planning (ERP) System
- Internet to support traditional Procurement (Manual Procurement)
- Electronic mail (e-mail)
- Web enabled Electronic Data Interchange (WEB - EDI)
- Extensible Mark-up Language (XML)
- World Wide Web (WWW)

E-Procurement System / E- Procurement Methods

De Boer (2002), have found that there are various sorts of E-Procurement systems like electronic market, electronic Maintenance, Repair and Operations, electronic sourcing, electronic tendering, electronic ordering and electronic exchange.

Huang, & Welsh, (2002), found that the rapid development of web technology has made inter-organisation property abundant, easier and cheaper than ever before, thereby providing a chance for firms, both massive and little, to realise real value of the web. Despite the huge investment and quality of implementing E-Procurement, there is little inquiry to produce for developing effective procurement methods and for success of implementing E-Procurement. This study tries to fill this gap by reporting of Australian case study on the adoption of E-Procurement. The findings offer elaborate, varied and practical strategic insights into critical factors, organisational redesign and challenges.

Matechak, (2002), identified three main phases of E-Procurement method that are budget plan, procurement application, and finalising the contract and performance of contract.

Tonkin, (2003), said that E-Procurement system in any organization involves the use of electronic ways in each stage of the buying beginning with method for the identification of necessities to payment. There are three kinds of E-Procurement Systems and these are: customer E-Procurement Systems, on-line Intermediaries E-Procurement Systems and Seller E-Procurement Systems.

E-Procurement process / Steps

According to ***Handfiel, R., (2003),*** the basic procurement cycle consists of up to nine steps, depending on the complexity of the buying and organizational policies.

- **Requisition:** A buyer recognizes needs and places a request for required goods or services.
- **Authorization:** Each requirement is verified by approval agent. The approvers verify that the goods and services are required or not.

- **Purchase Order:** Once the requisition is approved by the approver, a purchase order is created and automatically delivered to the suppliers.
- **Receipt of Goods:** Once goods are received, the buyer issues or confirms a receipt of such goods to the supplier.
- **Invoice:** After the preparation of shipment, an invoice is created.
- **Reconciliation:** After the goods received, the invoice needs to be reconciled to the purchase order and goods receipt before payment is made to supplier.
- **Payment:** Once the goods received and invoice reconciled, payment is scheduled through appropriate payment methods such as P-Card, Electronic fund transfer, Cheque etc.
- **Reclamation of Taxes:** Supplier often includes taxes as a charge in their invoice, so that the buyer may reclaim it if buyer is eligible to retain it.
- **Analysis:** After the number of procurement cycle completed, it is important to analyse the efficiency and accuracy of the procurement process.

Public E-Procurement

According to ***Davila, (2003)***, public E-Procurement has been defined as the use of data and communication technology like web / net based system by governments in conducting their procurement relationship with bidders for the acquisition of products, works, services and other consulting services needed by the public sectors.

Burton, (2005), indicated that public E-Procurement is the core instrument that helps in economic management of public resources. An E-Procurement solution helps the government sector units to procure all materials from office equipments to huge aircrafts and helps to procure services and projects.

Pheraon, & Searraigh, (2007), Public E-Procurement system provides all the project information through net. The bidders will read all the project specification, and they can comply with normal document. Tendering and contract awarding is one of the foremost stages of public procurement method where most of the corruption occur in developing countries.

According to ***Kabaj, (2008)***, an economical public procurement system is very important to the advancement of African countries economies and may be a concrete expression of their national commitment to creating the most effective potential use of public resources.

E-Procurement Trends in Government Sector

Governments are adopting E-Procurement in mature economies more extensively as it provides structure, audit trails and transparency of transactions. World Bank research has also found some reluctance by governments in adopting a system that is so fully transparent. Certain basic requirements need to be fulfilled before an E-Procurement system can achieve maximum potential in government. These are recommendations by the World

Bank which include expanding Information & Communication Technology (ICT) services, guaranteeing a secure online environment, development of standards and processes, and most importantly, for purchasers to be trained.

Wyld, (2002), examined the state of E-Procurement in the United States through an extensive analysis of data from the Institute for Supply Management (ISM)/Forrester reports conducted on e-Business.

Impact of E-Procurement on Corruption Practices

Ndou (2004), found that E-Procurement completely eliminates human involvement in bidding, thereby reducing the corruption and improving the effectiveness in public sector units.

Sohail & Cavill, (2008), indicated that E-Procurement improves the transparency and integrity in public service like tendering, sourcing, ordering, and auctioning. E-Procurement has been accepted as internationally vital instrument for checking the incidence of corruption and misuse of power.

Basheka, & Bisangabasaija, (2010), found that E-Procurement was used to counter the incidence of corruption in underdeveloped countries where the corruption rate is high.

Impact of E-Procurement on Organizational Performance

Ellram & Pearson, (1993), described the procurement activities conducive to the total value of possession including: delivery, management, service, communications, price and quality. They show the Total Cost of Ownership (TCO) approach in procurement that may give associate improvement in procurement and firm performance. The main philosophy of TCO was to identify all activities that make companies to incur cost and to determine those activities which add price. It was some kind of lean producing in the sense that the ultimate objective was to eliminate waste and focus solely on those activities that add final price.

Implementation of E-Procurement

Ageshin, (2001), studied the drawback of E-Procurement, buyers who adopts e- procurement are rely on suppliers on the implementation of just-in-time practices. Because of this, there is an increase in the involvement of suppliers in product design and development, shorter ordering cycles. Suppliers are disinclined to e- procurement for the reason of cost involved in training the staff and the risk involved in sharing the business data.

Basheka, & Bisangabasaija, (2010), believed that initially E-Procurement was used by non-public sector, later attracted the government sector. The important aspect for adoption of e- procurement in developed countries is better administration. E-Procurement is used to fight corruption in underdeveloped countries where the corruption rate is high.

Greunen, (2010), focused on adoption of E-Procurement by government agencies and the method of remodelling procurement practices in accordance

with national economic strategy. In order to deal with various socio economic challenges, government is switching to technology to deal with issues like obsolete procurement practices.

Challenges and Risks (Barriers) to Implementation of E-Procurement

Davila, (2003)*, observed* four risks associated with adopting E-Procurement technologies were identified.

- ***Internal business risks:*** Businesses have to be careful while integrating E-Procurement technologies with other business applications such as accounting, human resources, accounts payable and cash management.
- ***External business risk:*** E-Procurement solutions also need to be able to cooperate with suppliers of IT-infrastructure.
- ***Technology risks:*** Many companies are unsure about which E-Procurement solution best suits the specific needs of their company.
- ***E-Procurement process risks:*** This risk relates to the security and control of the E-Procurement process itself.

Challenges of E-Procurement Implementation in the Government Sector

Aman, & Kasimin, (2011)*,* had carried the study to understand the challenges of E-Procurement implementation in the Government Sector in Malaysia. Study found that the challenges in e- procurement implementation were not only related to Software integration, Data Management and roll out strategy, these challenges also include legal and administration procedures, Information Technology (IT) infrastructure, Outsourcing Contract and IT skills, etc.

Barahona, (2012)*,* surveyed and found that E-Procurement brings a set of recent rules and dynamics that make ways of doing business with the government in a different fashion, with a new set of participants, new incentives and a radically different value structure; conditions that have the potential to produce a competitive marketplace of transparency, efficiency and access.

Conclusions

E-procurement is more than just a system for making purchases online. The system has been implemented to achieve significant benefit such as cost saving and increased efficiency other advantage in applying an e-procurement system are a faster government procurement process and higher transparency compared to traditional procurement and tendering method. The system helps government agencies in making more informed and accurate decisions through providing easy access and relevant information about each bid and competitor.

The finding reveals some measures for the success of an e-procurement implementation initiative to be determined by measuring user as supplier satisfaction. It become apparent from the literature that public sector e-procurement initiatives must also focus on interoperability, transparency, and accountability issues while the use of in depth case studies of e-procurement initiatives in the public sector.

Recommendation

Implementation of e-procurement systems remains a key enabler of successful execution of procurement functions especially for firms that must engage in regional and international national procurement. Full adoption and implementation is a necessity that can only be achieved through a collaborative effort among the key players specific field. Based on this critical importance of e-procurement, the researcher therefore proposed the following recommendations.

As much as resources are always limiting, public sector should look at e-procurement as a critical investment and set aside adequate financial resources in their budgeting process. Furthermore only the initial investment in procurement of the necessary hardware, software and training of require personnel is resource intensive while the subsequent maintenance and operation cost are substantially low in comparison to the streams of benefits that will accrue from such investments.

Security matters on any IT platform are a concern for all. Despite this, investment in the necessary IT security features in any electronic system will provide substantial deterrent from any unauthorized access or manipulation. The government should therefore invest in security systems within their entire IT platform that will give them the ability to minimize their exposure to such risks.

Despite the fact that most legal issues are the jurisdiction of the government of the day, the tea firms should in collaboration with other sectors with key interest in benefiting from e-procurement push for the development and enactment of the necessary legislation that will entrench e-procurement practices legally. More so there is a positive atmosphere currently supportive of IT as a key pillar for the attainment of vision 2030.

Supplier enablement may be a component that requires both the firms and its suppliers to work together and create a system that is efficient and mutually integrated. It is the researcher's recommendation that both the tea firms should look at a means of working together as a team and build systems that will allow easier e-procurement functionality. More so each party must solicit the support of the other either by sharing related costs, IT platform and resources. Despite internet connectivity being currently a challenge it may not last due to the advent of the fiber optic cable spreading across the country. This will be a key asset to eliminating most of the challenges associated with

supplier enablement.

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