

ROLE OF E-PROCUREMENT SYSTEMS ON PERFORMANCE OF BANKING SECTOR IN KENYA: A CASE OF KENYA COMMERCIAL BANK

Jael Lagat

Masters Student, Jomo Kenyatta University of Agriculture and Technology, Kenya

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ABSTRACT

Kenyan banking sector has over the last six years, suffered major shocks including post-election disturbances, high oil prices, high rate of non-performing loans, the global economic and financial crisis, exchange rate volatility and high inflation rates (CBK, 2010). Commercial banks play a very key role in the economic growth of any country. The sector contributed 5.4% of the GDP in 2010 with a potential to contribute 8% to 15% (CBK, 2011) compared to 22% in South Africa and Ghana at 28%. In January 2011, KCB commissioned E-procurement systems to accelerate growth and move its business from a good to a great business. The stellar performance was predominantly driven by the Group's total operating income that rose to KShs.36.9 billion from KShs.29.6 billion, translating to a 25% improvement. There is limited Empirical study in Kenya on the role of e-procurement benefits on performance of banking sector in Kenya. The design for the study was descriptive research. The target population composed of 486 members of staff in different managerial levels currently working at the Kenya Commercial Bank. The study sampled 97 respondents. The research used questionnaires. The research administered the questionnaire individually to selected employees of Kenya Commercial bank who will not be included in the actual study. The researcher tried out a pilot study to pretest and validates the questionnaire and the interview guide. Quantitative data collected was analyzed using SPSS and presented through percentages, means, standard deviations and frequencies. The information was displayed by use of bar charts, graphs and pie charts and in prose-form.

Key Words: *e-procurement systems, performance of banking sector, Kenya, Kenya Commercial Bank*

Introduction

The benefits of e-Procurement have been verified by many leading companies worldwide, and e-Procurement is a significant tactic in most companies' e-Business strategies (Deloitte Consulting, 2011). The consensus is that e-Procurement benefits organizations with respect to procurement cost and process efficiency associated with procurement activities (Choudhury & Hartzel, 2008). This is due to web-based e-Procurement solutions can support four major B2B tasks in organizations: search, processing, monitoring and control, and coordination (Subramaniam and Shaw, 2012).

E-business has the potential to generate huge new wealth and to transform the way business is conducted in unprecedented ways (Amit & Zott, 2001). The use of new technology in procurement seems to promise substantial benefits (Neef, 2001). The questions that arise are how to capture this possibility as wisely as possible, which e-procurement tools are necessary to have and which ones are not. There is a need for some kind of guidance for assessing the new e-procurement tools and under what circumstances to use them (Gattiker, 2000), since they are considered to be of extreme interest for the development of the procurement function during the coming decade (Carter, Kaufmann, Beall, Carter, Hendrick & Petersen, 2000). The procurement function cannot be viewed in isolation in a firm; it is important that the procurement function operates in conjunction with the corporation, and that the procurement strategies are consistent with corporate competitive strategy (Watts, 1995).

It is assumed that the procurement function can contribute to the success of the corporation: "By developing a procurement strategy that focuses on the character of its competitive strength, a firm can enhance its market position" (Rajagopal & Bernard, 1993). Narasimhan and Carter (1998) argue "that purchasing practices should fundamentally stem from and be linked to those firm priorities if purchasing is to become strategic".

Global perspective

E-procurement systems have become popular in Malaysia, problems related to the performance of the construction industry have emerged, including issues related to quality, productivity, and safety (Rahman *et al.*, 2010). According to Nitithamyong and Tan (2007), the Ministry of Works revealed in 2003 that a number of public projects handled by a few consultancies were not completed within schedule and exhibited poor workmanship. Meanwhile, D&C and Turnkey system projects, such as the construction of 13 hospitals in the 1990s, were completed, but with numerous defects (Hashim *et al.*, 2006; Jaafar & Aziz, 2009, Jaafar & Radzi 2012). Ibrahim *et al.* (2010) observed that by the end of 2004, major development projects faced problems such as delays in the construction schedule, cost escalation, and even structural defects in schools and community college buildings. The problems were attributed to the PMC system and the PMC system is therefore currently being replaced by the D&C system.

In an attempt to improve the industry, the Construction Industry Development Board (CIDB) launched the Malaysian Construction Industry Master Plan in 2006. Under Strategic Thrust industry services and commercial business entities were encouraged to enhance knowledge, efficiency, and effectiveness. These goals were achieved through the development and improvement of various strategic instruments and the identification of the best procurement practices by managerial tendering and contracting. Business purchasing practice that utilizes electronic commerce to identify potential sources of supply, to purchase goods and services, to transfer payment, and to interact with suppliers". E-procurement is part of a broader concept called information technology (IT), which the American Heritage Dictionary (2005) defines as "the development, installation, and implementation of computer systems and applications".

E-procurement continues to grow and was projected to reach \$3 trillion in transactions in 2004, up from \$75 billion in 2002 (Verespej, 2002). Presutti (2003) refers to a Deloitte Consulting survey of 200 multi-national firms, which suggests the use of e-procurement is growing. Approximately 30 percent of firms in the sample had at least a basic e-procurement system in place. A total of 61 percent of the sample had planned to implement E-procurement systems or were at least considering it (Presutti, 2003).

While many firms adopt e-procurement in an attempt to achieve the proposed benefits of lower costs and improved efficiency, it should be noted that the use of e-procurement does guarantee positive outcomes for buyers or suppliers. Emiliani & Stec's (2005) study of reverse auction use in the wood pallet industry found that suppliers realized few, if any benefits from participation, suppliers engaged in retaliatory pricing when the opportunity presented itself, buyers encountered unanticipated costs, and less-than-optimal buyer-supplier relationships resulted. Some additional challenges associated with the effectiveness of e-procurement include information sharing within and across firms, overcoming the "silo mentality" within the firm, sharing proprietary information with supply chain members, and intellectual property matters. Astute decision-makers recognize that successful implementation of e-procurement applications relies not only on the capabilities of the application itself, but also on non-technical factors such as realignment of the procurement function, integration of the e-procurement system with other relevant systems, redesign of the procurement process, realignment of the purchasing organization, and integrating suppliers at an early stage (Puschmann & Rainer, 2005).

A wide variety of Internet-based technologies are available to firms attempting to improve their business position (on-line catalogs, on-line auctions). Internet-based technologies vary in many respects, including the ability to facilitate process integration within and across firms. According to the American Heritage Dictionary (2005), to integrate is to "make into a whole by bringing all parts together; to unify or to make part of a larger unit". Some firms adopt technologies that involve applications within a single function (electronic requisitions), while others use e-procurement applications that provide for process integration across multiple functions within a

single firm (enterprise resource planning systems (ERP), yet others use e-procurement applications that facilitate integration across organizations (electronic data interchange (EDI)).

Kenyan perspective

As at 31st December 2011, the banking sector comprised of the Central Bank of Kenya, as the regulatory authority, 44 banking institutions (43 commercial banks and 1 mortgage finance company - MFC), 4 representative offices of foreign banks, 6 Deposit-Taking Microfinance Institutions (DTMs), 118 Forex Bureaus and 2 Credit Reference Bureaus (CRBs). Out of the 44 banking institutions, 31 locally owned banks comprise 3 with public shareholding and 28 privately owned while 13 are foreign owned (CBK, 2011). The number of bank branches increased by 98 from 1,063 in 2010 to 1,161 branches in 2011 indicating increased access to banking products and services.

The number of banks ATMs increased by 226 from 1,979 in December 2010 to 2,205 in December 2011 representing an increase of 11.4%. 6 large banks accounted for 54 percent of total assets, 53 percent of customer deposits, 55 percent of capital & reserves and 62 percent of pre-tax profit in 2011. Developments within the banking sector are strongly guided by the medium-term objectives of the financial sector reform and development strategy embedded in the economic development blueprint, Vision 2030. In the year 2011, access to financial services continued to be enhanced, spurred by increased innovation in the delivery of financial products and services throughout the country.

The banking sector registered enhanced growth in the year 2011, with a 20.4 percent increase in the total net assets from Ksh.1, 678.1 billion in December 2010 to Ksh. 2,020.8 billion in December 2011. Loans and advances, government securities and placements which accounted for 57.0 percent, 15.1 percent and 5.8 percent of total assets respectively continue to be the major components of the balance sheet. Net Loans and Advances recorded a growth of 31.4 percent from Ksh.876.4 billion to Ksh.1,152.0 billion in December 2011. Significant portion of the sector's loans were advanced to personal, trade, manufacturing and the real estate sectors, which accounted for 72 percent of the gross loans in 2011. However, investment in Government securities declined from Ksh.342.5 billion in 2010 to Ksh.304.8 billion in 2011. This may be attributed to low interest rates on government securities during the first half of 2011 compared to lending interest rates.

The source of funding in the banking sector, mainly customer deposits grew by 20 percent from Ksh.1, 236.5 billion in 2010 to Ksh.1, 488.2 billion as shown in Table 12. The growth was supported by branch expansion and receipts from exports. The increased deposits enhanced the banks' capacity to extend credit to various economic sectors. NPLs declined by Ksh. 4.6b in 2011 as banks enhanced credit appraisal standards.

In terms of profitability, the sector registered a 30.5% growth in pretax from Kshs 14.9 billion in April 2009 to Kshs 19.5 billion at the end of April 2010. Consequently, annualized return on assets has improved from 2.8% in April 2009 to 3.0% in April 2010, while return on equity increased from 25.3% to 27.3%. Total industry income increased by 18.5% during the year from Kshs 53.0 billion in April 2009 to Kshs 62.8 billion in April 2010, while total expenses increased by 13.7% from Kshs 38.1 billion in April 2009 to Kshs 43.4 billion, interest on loans and advances, fees and commissions and government securities were the major sources of income accounting for 53.0%, 26% and 16.0% of total income, respectively. Meanwhile, staff costs, other expenses, and interest on deposits were the components of industry expenses, accounting for 34%, 27% and 26% respectively.

Kenya Commercial Bank

The history of KCB dates back to 1896 when its predecessor, the National Bank of India opened an outlet in Mombasa. Eight years later in 1904, the Bank extended its operations to Nairobi, which had become the Headquarters of the expanding railway line to Uganda. The next major change in the Bank's history came in 1958. Grindlays Bank merged with the National Bank of India to form the National and Grindlays Bank. Upon independence the Government of Kenya acquired 60% shareholding in National & Grindlays Bank in an effort to bring banking closer to the majority of Kenyans. In 1970, the Government acquired 100% of the shares to take full control of the largest commercial bank in Kenya. National and Grindlays Bank was renamed Kenya Commercial Bank. In 1972, Savings & Loan (K) Ltd was acquired to specialize in mortgage finance. In 1997, another subsidiary, Kenya Commercial Bank (Tanzania) Limited was incorporated in Dar-es-Salaam, Tanzania to provide banking services and promote cross-border trading. Since then, the subsidiary has 11 branches.

In pursuit of its Vision: To be the preferred financial solutions provider in Africa with a global reach, in May 2006 KCB extended its operations to Southern Sudan to provide conventional banking services. The subsidiary has 19 branches. The latest addition into the KCB Family came in November, 2007 with the opening of KCB Bank Uganda Limited which has 14 branches. In December 2008 KCB Rwanda began operations with one branch at Kigali. There are currently 9 branches spread out in the country. In 2010 S&L was merged with KCB providing access to mortgage finance through the bank's wide branch network of 222 branches with a total of about 5492 employees.

Statement of the Problem

According to available Statistics from Central bank of Kenya (CBK, 2012), show that the Kenya commercial bank Last year reported a 42.7 per cent drop in profits to Sh629 million from Sh1.64 billion a year earlier and Sh2.02 sector has recorded a decline in performance in some banks as from 2011 with Kenya commercial bank announcing a profit decline of 17 percent in first-half posting a profit of 911.8 million shillings from the 1.1 billion shillings posted in year 2011 (CBK, 2012). Total operating income increased by 2% compared to similar period in 2011,

(CBK, 2010). Despite the unfavorable business environment for banks, statistics show that the banking sector's growth has been on an upwards trend posting double digit growth in profitability during the period, in years 2009 the sector posted a profit of 48 billion which was 14.3% growth from 2008. This result jumped by 28.4% in 2010 and 35.1% in 2011 (CBK, 2011). Could this be attributed to the adoption of E-procurement by commercial banks in Kenya?

Commercial banks play a very key role in the economic growth of any country. The sector contributed 5.4% of the GDP in 2010 with a potential to contribute 8% to 15% (CBK, 2011) compared to 22% in South Africa and Ghana at 28%. In addition, they hold assets worth 63% of the GDP. Burton (2011) believes that e-procurement is the central instrument to assist the efficient management of resources in an organisation. Many e-procurement management models have been developed, most of the Kenyan commercial banks run fully developed procurement departments, (KBA, 2011).

According to Kenya Bankers Association (KBA, 2012), KCB commissioned e-E-procurement systems to accelerate growth and move its business from a good to a great business. The project took six months in the diagnostics and design phase. Implementation is ongoing and is expected to be completed by end of July 2013, (KCB, 2010). In just 5 months, KCB Group recorded pre-tax profits of KShs.151.1 billion, representing a robust 54% growth over the 2010 pre-tax profits of KShs.9.8 billion (KCB, 2011). The stellar performance was predominantly driven by the Group's total operating income that rose to KShs.36.9 billion from KShs.29.6 billion, translating to a 25% improvement. The International Business pre-tax profits jumped by 100% from a loss of KShs.221 million in 2010, to KShs.1 billion in 2011. KCB Group Chairman said that the transformation agenda of moving the Bank from good to great played a significant role in boosting business revenues, annexing a greater market share and improving efficiency in the Bank's procurement process, (KCB, 2011).

Locally a number of studies have been done on the role of e-procurement benefits on performance in other industries other than the banking industry in Kenya (Peter, 2000; Nally, 2010). A few examples of studies on banks in Kenya include Bob (2008), Steve (2009) and Mulei (2011). Despite the numerous studies on the role of e-procurement benefits on performance, the banking industry has been largely neglected therefore this study is intended to bridge the knowledge gap and seeks to determine the role of e-procurement benefits on performance of banking sector in Kenya with reference to Kenya commercial bank.

General Objectives

The general objective of the study was to determine the role of E-procurement systems on performance of banking sector in Kenya

Specific Objectives

1. To determine the role of e-tendering on the performance of banking sector in Kenya
2. To examine the role of e-sourcing on the performance of banking sector in Kenya
3. To establish the role of enterprise resource planning on the performance of banking sector in Kenya
4. To find out the role of e-informing on the performance of banking sector in Kenya

Theoretical Review

Technology Acceptance Theory

Some studies used technology acceptance model or theory of planned behaviour in order to understand the adoption of new technology in public sector setting (Aboelmaged, 2010; Wahid, 2010; Davis, 1989). Although those models suggest perceived usefulness and perceived ease of use as critical antecedents to users' technology adoption process, those models are not specific on the implementation of a new technology such as e-procurement system. Our theoretical framework draws on Croom & Brandon-Jones (2007), which is found useful to understand key challenges of e-procurement implementation in government sector.

Logistics Theory

Logistics is defined as the planning, organization, and control of all activities in the material flow, from raw material until final consumption and reverse flows of the manufactured product, with the aim of satisfying the customer's and other interest party's needs and wishes i.e., to provide a good customer service, low cost, low tied-up capital and small environmental consequences (Jonsson & Mattsson, 2005). Logistics is also defined as those activities that relate to receiving the right product or service in the right quantity, in the right quality, in the right place, at the right time, delivering to the right customer, and doing this at the right cost.

In most of the cases logistics is seen from the perspective of an operative way of transporting or moving materials from one point to another or producing service. The credibility of this operation is based on how good is the design of the system that leads to this kind of logistics. Logistics systems encompass operative responsibilities, which include administration, operation and purchase and constructive duties as well as detailed design, (Lumsden, 2003).

Logistics management is that part of procurement management that plans, implements, and controls the efficient, effective forward and reverses flow and storage of goods, services, and related information between the point of origin and the point of consumption in order to meet customer's requirements. Logistics management activities typically include inbound and outbound transportation management, fleet management, warehousing, materials handling, order fulfillment, logistics network design, inventory management, supply or demand planning, and management of third party logistics services providers. To varying degrees, the logistics function

also includes sourcing and procurement, production planning and scheduling, packaging and assembly, and customer service. It is involved in all levels of planning and execution strategic, operational, and tactical. Logistics management is an integrating function which coordinates and optimizes all logistics activities, as well as integrates logistics activities with other functions, including marketing, sales, manufacturing, finance, and information technology, (Van Hoek et al., 2001)

Innovation Diffusion Theory

The Innovation diffusion theory is a model grounded in business study. Since 1940's the social scientists coined the terms diffusion and diffusion theory (Dean, 2004). This theory provides a framework with which we can make predictions for the time period that is necessary for a technology to be accepted. Constructs are the characteristics of the new technology, the communication networks and the characteristics of the adopters. We can see innovation diffusion as a set of four basic elements: the innovation, the time, the communication process and the social system. Here, the concept of a new idea is passed from one member of a social system to another. Clemons, (1992) redefined a number of constructs for use to examine individual technology acceptance such as relative advantage, ease of use, image, compatibility and results demonstrability. The advantage of the improved system is that it has allowed for better communication between the banks since they have to communicate to ensure that less time is taken to realize value on the cheques.

Transaction Cost Theory

Transaction cost theory could serve as a good starting point for the analysis, which explains why certain tasks are performed by firms and others by markets (Coase, 1937). Transaction costs can be divided into coordination costs and transaction risk (Clemons & Row, 1992). Coordination costs are the direct costs of integrating decisions between economic activities (such as search and bargaining costs). Transaction risk is associated with the exposure to being exploited in the relationship (Clemons & Row, 1992).

Uncertainty and asset specificity are two factors, which increase coordination costs and transaction risk, respectively (Williamson, 1985). The use of information technology has facilitated the reduction of coordination costs, which has been extensively documented in the literature (Bakos, 1991). For example, electronic market places, facilitated through IT, reduce the cost of searching for obtaining information about product offerings and prices (Bakos, 1991). Also, collaboration facilitated by information sharing can lower transaction costs (in particular coordination costs) as companies can thereby reduce supply chain uncertainty and thus the cost of contracting.

Uncertainty in the context of supply chains and more specifically in manufacturing is caused by supply uncertainty, demand uncertainty, new product development uncertainty, and technology

uncertainty (Koh, 2006). (Sutcliffe & Zaheer, 1998), classified uncertainty as primary, competitive, and supplier uncertainty. Primary uncertainty is consistent with Koopmans' (1957) and Williamson's (1985) and refers to the "lack of knowledge of states of nature" (Sutcliffe and Zaheer, 1998). Competitive uncertainty arises from the innocent or strategic actions of potential or actual competitors (Sutcliffe and Zaheer, 1998).

Conceptual Framework

Independent Variable

Dependent Variable

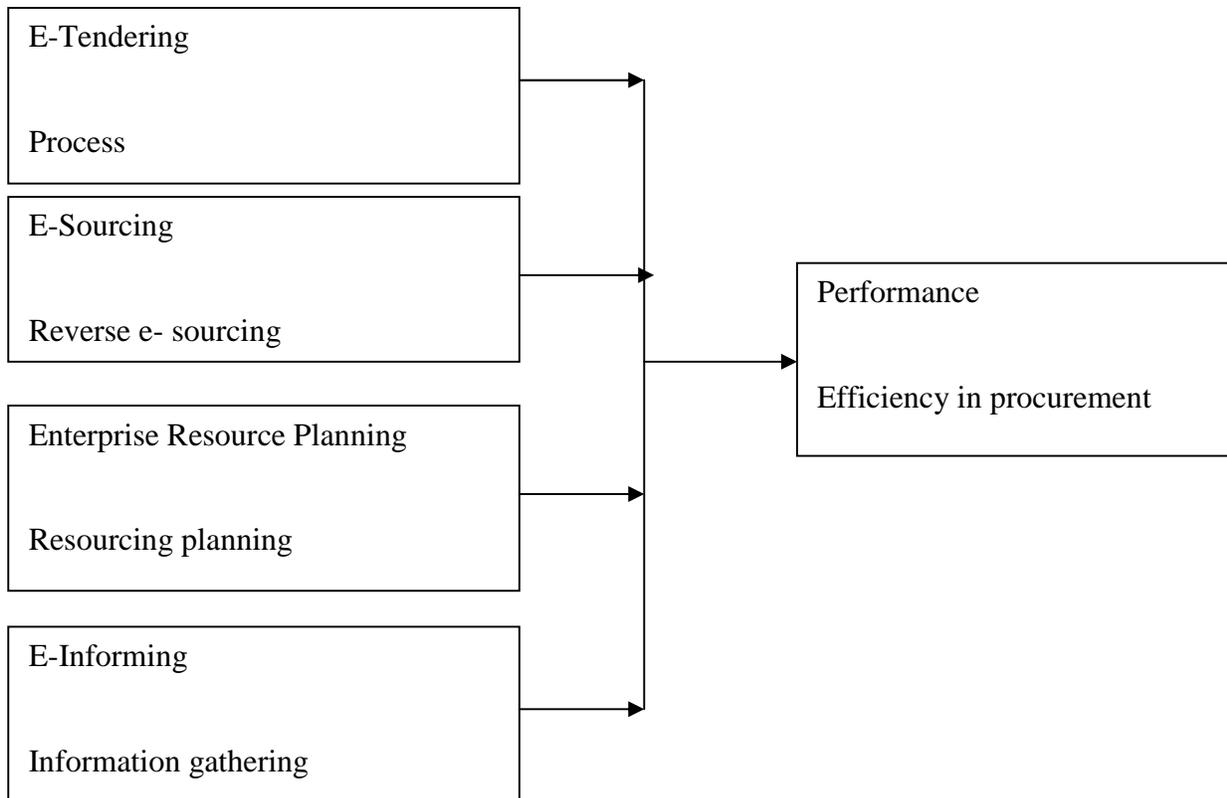


Figure 1: Conceptual Framework

E-Tendering

E-tendering is a process whereby quotation is submitted by a contractor when so required by the client for renovation works or execution of part or complete project or for the materials and components to be supplied by a supplier (Doloi, 2011). E-tendering is a system whereby interested parties or companies offer to build, sell goods or render services for a consideration, in response to an invitation to do so. Generally, the whole essence of E-tendering procedure according to Eriksson and Westerberg (2011) is to select a suitable contractor at a time appropriate to the circumstances and to obtain from him at the appropriate time, an acceptable tender or offer upon which a contract can be let.

E-tendering originated from pre-contract communication between architects and builders (Adewoyin, 2010). By the end of the eighteenth century, the architect's role was consolidated into construction designer and “leader” of the project coalition, hence establishing traditional procurement. These formative years played a leading role in the evolution of E-tendering practice, affecting both the architect and the builder in terms of preparation of pre-contract documents, evaluation of tenders and the manner of estimating cost, time allowed and method of tender submission, respectively. Early in the nineteenth century, the bill of quantities (BOQ) was introduced thereby becoming the means of providing a common basis upon which contractors could compile their bids (Chou, 2011). Holt *et al.* (2005) gave an account of pre-construction contracts, which were typically traditionally procured and assigned via the open E-tendering system.

The report of Simon Committee (2004) recommended that tenders should only be called from a limited number of firms carefully selected as being capable of, and likely to do the work to standard, as it has been noted that open E-tendering often lead to unscrupulous builders being awarded contracts. It was also observed that the open system of E-tendering was conducive to the purchase of inferior materials and speeding up of the work, making good craftsmanship impossible. The Simon committee initiated the move away from the open E-tendering and encouraged the prequalification of contractors. The advent of the standing list therefore commenced and in the committee's view, formed a satisfactory basis for selecting contractors to tender.

The Latham's (2004) report recommended that clients should base her choice of contractor on value for money with proper weighting of selection criteria for skill, experience and previous performance rather than accepting the lowest tender (Holt *et al.*, 2005). Holt *et al.* (2005) stated that 87 per cent of clients base their selection decisions on price. They also pointed out that bid selection is nearly always based on lowest tender but this may not always be the most economical solution in the long term. The tender process should obtain for the client the most competitive price for the construction at prevalent market condition (Williamson *et al.*, 2004).

E-sourcing

Empirical research shows that many large companies in the US and Europe use reverse e-sourcing and that supply managers expect continued expansion in the future (Kaufmann and Carter, 2004). In reverse e-sourcing, suppliers compete dynamically, in real-time, for a buyer's business and typically bid down the price of an item to be purchased. Using the internet, suppliers submit multiple electronic bids during a fixed time period, often 30 minutes or less. E-sourcing can reduce purchase prices, save time, streamline the bidding process, and enable suppliers from anywhere in the world to compete for a buyer's business (Smart & Harrison, 2003). Risks of e-sourcing include damaging supplier relationships, switching to suppliers who are not capable, underestimating the total costs associated with using suppliers with lower purchase prices, and negatively impacting the supply market in the long run by driving out

qualified suppliers (Smeltzer & Carr,2003). To attain the greatest benefits, purchasing processes should be evaluated and improved before adopting e-procurement tools such as e- sourcing (Presutti, 2003).

Although clearly not appropriate for every purchase, e- sourcing can be an effective tool if risks are carefully assessed and e-auctions are used judiciously (Kaufmann & Carter, 2004). A Purchasing Magazine survey of US companies shows that in 2004, 27 percent of buyers surveyed used e-auctions, up from 15 percent who reported using e-auctions in 2003 (Hannon, 2004). For large companies (sales over \$100 million), the rate of use is even higher with 38 percent using e-auctions based on a 2002 survey of US companies (Chew *et al.*, 2003). Supply managers are using e-sourcing for commodity-type items and one-time purchases (Handfield *et al.*, 2002). E-sourcing has successfully been used to source indirect materials, production materials, and support services (Gabbard, 2003).

Empirical research on e-sourcing consists primarily of case studies (Carter *et al.*, 2004), in-depth analysis involving surveys within a few firms (Jap, 2003), and *quasi*-experiments (Jap, 2003). The research is emerging in several areas. Case studies of e-sourcing participants have identified the benefits of and problems with e-auctions (Carter *et al.*, 2004). Lower purchase prices, lower transactions costs, lower inventory levels, and inclusion of a wider pool of suppliers are the primary benefits for buying organizations from e-sourcing (Carter *et al.*, 2004).

Other studies have described the e-sourcing process and ways to increase the success of e-sourcing (Kaufmann & Carter, 2004). Clarity of specifications, lots that are attractive to suppliers and degree of competition have consistently been identified as e-auction success factors (Kaufmann and Carter, 2004).

Enterprise Resource Planning

Enterprise Resource Planning (ERP) is a cross-functional enterprise system driven by an integrated suite of software modules that supports the basic internal business processes of a company, (Al-Mashari *et al*, 2003). ERP gives a company an integrated real-time view of its core business processes, such as production, order processing and inventory management, tied together by ERP application software and a common database maintained by a database management system. ERP systems track business resources such as cash, raw materials, and production capacity and the status of commitments made by the business such as customer orders, purchase orders, and employee payroll, no matter which department (manufacturing, purchasing or sales) has entered into the system , (Dezdar, 2010).

Enterprise Resource Planning (ERP) system solutions are currently in high demand by both manufacturing and service organizations, because they provide a tightly integrated solution to an organization's information system needs. ERP allows employees to manage their company with one system that integrates the entire business process and creates an enterprise-wide view of significant corporate information. Today, organizations face a new challenge of increasing

competition, expanding markets and enhancement in customer expectations and thus ERP systems have been developed to provide a total business system in order to improve business performance, (Al-Mashari *et al.*, 2003).

Even though the use of ERP systems is growing and becoming more popular, these systems are still somewhat unfamiliar in the private sector industry, (Nah *et al.*, 2003). Many firms know how beneficial ERP systems are, but they still hesitate to adopt these systems due to their high cost and risk. Without a doubt, a successful ERP implementation is essential for the benefits from such systems, so this issue is always considered top priority in the ERP related research area. It is obvious that several important factors must be considered for successful implementation, but most firms have no idea what factors should be considered most heavily (Zhang *et al.*, 2005).

E-information

E-informing is the gathering and distributing purchasing information both from and to internal and external parties using Internet technology (McFarlan, 2004). Using Internet technology to buy goods and services from a number of known or unknown suppliers. Nelson *et al.* (2001), purchasing accounts for the majority of organisational spending. As such, the advent of web-based electronic procurement has been heralded as a 'revolution' because of its potential to reduce the total cost of acquisition (Croom, 2010; Rai *et al.* 2006). The e-procurement revolution is expected to enhance the status and influence of the purchasing function within organizations (Osmonbekov *et al.*, 2002).

Existing literature has emphasized the important contribution of e-procurement in reducing total purchasing costs. These benefits broadly arise through lower prices from suppliers and reduced costs in the 'requisition to payment' process (Kameshwaren *et al.* 2007; Mishra *et al.* 2007). Whilst it has been widely contended that e-procurement will have considerable implications for the design of the procurement process, Lancioni *et al.* (2000) note that the precise nature of these changes remains unclear. Yen & Ng (2003) carried out a case study investigation of textile and apparel e-commerce implementation in Hong Kong.

Kennedy & Deeter-Schmelz (2001) conclude that 'organizational characteristics and organizational influences' are significant motivators to the use of e-procurement. In other words, the extent to which e-procurement is used and developed is strongly influenced by the general disposition of the organization as a whole. The relationship between user perceptions and the level of compliance has been noted by a number of authors (de Boer *et al.* 2002; Croom & Johnston, 2003; Interfaces, 2006).

Empirical Review

E-procurement is more likely to be beneficial in dispersed supply chains as it helps coordination (Liao, 2003). Different actors in supply chains have got different power, legitimacy and urgency to implement e-procurement and e-procurement can have an effect on trust in supply chain relationships (Klein, 2007). Lack of assistance and the structural inertia of large organizations in supply chains can be a disincentive to implement e-business (Zhu et al., 2006). Different industries show different propensities to e-procurement adoption, related to existing use of information exchange infrastructures prior to the advent of the internet (Cagliano et al., 2005).

The greatest benefits of e-business occur when its application is fully integrated throughout the supply chain (Currie, 2000). Some literature has pointed to the possibilities of greater integration and collaboration across e-business-supported supply chains (McIvor & Humphreys, 2004). E-procurement is more likely to be adopted if it is perceived that suppliers have capability to deal with it; there are difficulties in integrating information systems across firm boundaries in supply chains if suppliers lack capability.

The potentials of e-procurement have already been proven in a number of studies (Aberdeen Group, 2011). According to these studies, e-procurement enables companies to decentralize operational procurement processes and centralize strategic procurement processes as a result of the higher supply chain transparency provided by e-procurement systems. A company's procurement function is subdivided into strategic and operational processes since activities and priorities in these two areas are entirely different (Kaufmann, 2009). Supplier management, the pooling of purchase requisitions and procurement-oriented product development are tasks that are typically assigned to strategic procurement. Prior to e-procurement, strategic procurement often had to deal with administrative routine work as well, such as individual transactions, converting purchase requests into purchase orders or ensuring the correct allocation of invoices received. Strategic aspects are frequently neglected in the process, with the buyer having little influence over the choice of suppliers and the purchased products, (*Industrial Distribution*, 2011).

Despite the potentials promised by the vendors of such systems, e-procurement got off to a slow start. A study by (Eyholzer & Hunziker, 2010) shows that only 18 percent of the Swiss companies analyzed used electronic product catalogs, auctions or requests for quotations in procurement in the year 2000. Other studies show similar proportions for other countries (*Industrial Distribution*, 2011). A study by Wyld (2004) reports that currently almost half of all American companies use e-procurement systems.

Although the adoption of e-procurement has rapidly increased in recent years, companies face different challenges associated with the advent and use of e-procurement. One is that most companies only apply single e-procurement functions. The analysis by Wyld (2004) shows that

in the USA only 30 percent of the companies surveyed use e-E-procurement systems for requests for quotations, online auctions (25 percent) or e-markets (33 percent).

E-procurement adoption has to be managed well to achieve the firm's performance goals. There are several key success factors, related to both the competency of the e-procurement service provided by an online auction intermediary and to the organization's own internal capabilities. One key success factor relating to e-procurement is technical capability of the system (Johnston, 2005). Johnston (2005) specified technical service quality in terms of system quality (security, reliability, easy to use, accessibility) and service quality (e.g. responsiveness of service). In addition, trust in the service provider is another major success factor for electronic service adoption (Rotchanakitumnuai & Speece, 2009).

Although Carr & Smeltzer (2012) cautioned that increased use of information technology may not improve the level of trust between buyer and sellers, many scholars have shown that increased use of e-procurement can enhance the buyer-seller relationship (Gadde & Snehota, 2010). The greater use of e-procurement and inter-organizational systems can enhance trading partners' relationship (Archer & Yuan, 2010; Croom, 2011) and the online auction intermediary can be considered one of the trading parties of the e-procurement system. The main attributes related to trust in the service provider are benevolence, integrity and capability (Mcknight & Chervany, 2012). Benevolence is the perception that trusted parties will do positive actions rather than only maximize profit. Integrity means the trusted parties will be honest and have transparent policies.

Organizational factors also have a major influence on the deployment of e-procurement (Croom & Brandon-Jones, 2007). Organizational readiness is an important driver for increasing internal process improvement, enhancing learning and innovation including the knowledge of purchasing personnel, their computer skill and resources. Management support is another key influence on new electronic service adoption (Rotchanakitumnuai & Speece, 2004). Positive management support for e-procurement can ensure system adoption success. Training is the best support to enable personnel to use the e-procurement more efficiently. Croom & Brandon-Jones (2007) found that governance structure is one key success factor of e-procurement implementation management. E-procurement makes the procurement process more transparent and helps organizations achieve good governance impacts (Hui *et al.*, 2011).

Research Methodology

Research Design

The design for the study was descriptive research. The researcher intends to describe the state of affairs of the problem of investigation. The design is appropriate for the study because the manipulation of independent variables such as sex, age, professional qualifications and teaching experience will not be possible since the variables have already manifested themselves. Cooper and Schindler (2006) stated that research design is the manner in which data is collected, measured

and analyzed in order to achieve certain research objectives. Chandran (2004) stated that the research design is a way to accomplish the research objectives through empirical evidence that is obtained economically. The considerations that determine the research design to be used include: research purpose, categories of data required, data sources and the cost implications.

Target Population

According to Ngechu (2004) a study population is a well-defined or specified set of people, group of things, households, firms, services, elements or events which are being investigated. Target population should suit a certain specification, which the research is studying and the population should be homogenous. Keya (1989) states that individuals or things or elements that fit a research specification. The population can be divided into sets, population or strata and which are mutually exclusive.

Mugenda and Mugenda, (2003), explain that the target population should have some observable characteristics, to which the research intends to generalize the results of the study. For purpose of this study the targeted population which was stratified through top management level, middle level managers and low level management. The target population composed of 486 members of staff in different managerial levels currently working at the Kenya Commercial Bank. This population suits the research in view of determining the role of E-procurement systems on performance of banking sector in Kenya. As a result, they are well conversed the role of E-procurement systems on performance of banking sector in Kenya.

Sampling Procedure

Ngechu (2004) emphasizes the importance of selecting a representative sample by use of a sampling frame. From the sampling frame, the required number of subjects, respondents, elements or firms is selected in order to make a sample. Stratified random sampling technique was used to select the sample. According to Deming (1990) stratified random sampling technique produce estimates of overall population parameters with greater precision and ensures a more representative sample is derived from a relatively homogeneous population. Stratification aims to reduce standard error by providing some control over variance. From each stratum the study used simple random sampling to select 97 respondents; this was 20% of the entire population, According to Mugenda and Mugenda (1999), a representative sample is one that represents at least 10% of the population of interest. Random sampling frequently minimizes the sampling error in the population. This in turn increases the precision of any estimation methods used (Cooper and Schindler, 2003).

Data collection Method

Primary data is information gathered directly from respondents. The research used questionnaires. The questionnaire was used to collect mainly quantitative data. However some qualitative data was collected from the open ended questions. Secondary data was involve in the collection and analysis of published material and information from other sources such as annual

reports, published data. The research will administer a questionnaire to each member of the target population. The questionnaire will be designed and tested with a few members of the population for further improvements. This was done in order to enhance its validity and accuracy of data to be collected.

Secondary data was collected to generate additional information for the study from the documented data or available reports. Secondary data is for evaluating historical or contemporary confidential or public records, reports, government documents and opinions (Cooper and Schindler, 2003). Mugenda and Mugenda (2003) add that, numerical records can also be considered as a sub category of documents and those records include figures, reports and budgets. This basically implied the incorporation of valuable statistical data in the study.

The researcher administers the questionnaire individually to selected employees of Kenya Commercial bank who were not be included in the actual study. The research exercised care and control to ensure all questionnaires issued to the respondents are received. To achieve this, the research maintained a register of questionnaires, that was sent, and those that were received.

Data Analysis

The research perused completed questionnaires and document analysis recording sheets. Quantitative data collected was analyzed using SPSS and presented through percentages, means, standard deviations and frequencies. The information was displayed by use of bar charts, graphs and pie charts and in prose-form. This involved tallying up responses, computing percentages of variations in response as well as describing and interpreting the data in line with the study objectives and assumptions through use of SPSS. Content analysis was used to test data that is qualitative nature or aspect of the data collected from the open ended questions. According to Baulcomb, (2003), content analysis uses a set of categorization for making valid and replicable inferences from data to their context. A multivariate regression model was applied to determine the relative importance of each of the four variables with respect to the effects of e-procurement on performance. This was in an effort to establish the extent to which each independent variable affect the dependent variable as shown by the size of the beta coefficients. The regression model is as follows:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4$$

Where Y is the dependent variable (performance), β_0 is the regression constant, β_1 , β_2 , β_3 and β_4 are the coefficients of independent variables, X_1 is E-Tendering, X_2 is E-sourcing, X_3 is Enterprise Resource Planning and X_4 is E-informing.

In addition Correlation analysis to determine the strength of relationship between the variable, correlation analyses is the statistical tool that can be used to determine the level of association of two variables (Levin & Rubin, 1998). Correlation analysis will help to detect any chance of multicollinearity among the study variable. Correlation value of 0 shows that there is no

relationship between the dependent and the independent variables. On the other hand, a correlation of ± 1.0 means there is a perfect positive or negative relationship (Hair et al., 2010). The values will be interpreted between 0 (no relationship) and 1.0 (perfect relationship).

Research Findings and Discussion

Demographic information

Findings revealed that majority of the respondents were male comprising 70 per cent while 30 per cent were female. The study revealed that 29.1 per cent of the respondents were between 36-45 years old, 27.8% were between 46-55 years old, 25.3% were Above 55 years old, 10.1 percent were between 25 -35 years old, while the remaining 7.6% of the respondents were below 25 years and above. Findings from the study revealed that most of the respondents had attained a diploma shown by 46.8 per cent, 35.4% were undergraduates, 16.5% had reached secondary school, while the remaining (1.3%) had were graduates. The study further determined the duration of time respondents have been employed in the bank. Findings from the study revealed that majority of the respondents have been employed in the bank for between 5 and 10 years as was shown by 40.5 percent, 25.3 percent for less than 1 year, 21.5 percent for more than 10 years, while 12.7 percent had been employed in the bank for between 2 and 5 years.

E-Tendering

Forty three of the respondents indicated that E-sourcing influences the performance of the bank to a little extent, 36.7% to a moderate extent, 7.6% to no extent, 6.3% to a very great extent, and the remaining 6.3% indicated that E-sourcing influences the performance of the bank to a great extent. Results revealed that most respondents agreed that Open system of E-tendering leads to the purchase of inferior materials and speeding up of the work as shown by a mean of 3.99; that tenders should only be called from a limited number of firms carefully selected as being capable of doing the work to standard as shown by a mean of 3.96; this matches Eriksson and Westerberg literature that the whole essence of E-tendering procedure is to select a suitable contractor at a time appropriate to the circumstances and to obtain from him at the appropriate time, an acceptable tender or offer upon which a contract can be let (Eriksson and Westerberg, 2011); that the bank has a well-established E-tendering system as shown by a mean of 3.85; that Open E-tendering often lead to unscrupulous suppliers being awarded contracts as shown by a mean of 3.82; that E-tendering enables the selection of a suitable contractor at a time appropriate to the circumstances as shown by a mean of 3.56; and that bid selection is always based on lowest tender but this may not always be the most economical solution in the long term as shown by a mean of 3.29.

E-Sourcing

More than half (68%) of the respondents indicated that E-sourcing influences the performance of the bank, while the rest (32%) indicated that it did not. Majority of the respondents (31.6%) of the respondents felt that E-sourcing influences the performance of the bank, 26.6% to a great

extent, 22.8% to a moderate extent, 10.1% to a little extent while only 8.9% of them felt that it did not affect the performance of the bank at all. Results revealed that most respondents strongly agreed that E-sourcing reduces purchase prices; that in reverse e-sourcing, suppliers compete dynamically for a buyer's business and typically bid down the price of an item to be purchased; that E-sourcing streamline the bidding process; This matches Croom & Brandon-Jones literature that cites that some of the benefits of adopting e-procurement include savings in purchasing transaction cost resulted from less paperwork, less mistakes and more efficient purchasing process (Croom & Brandon-Jones, 2007) This matches Doloi literature that E-tendering is a system whereby interested parties or companies offer to build, sell goods or render services for a consideration, in response to an invitation to do so (Doloi, 2011); that E-sourcing enables suppliers from anywhere in the world to compete for a buyer's business; and that purchasing processes should be evaluated and improved before adopting e-procurement tools such as e-sourcing as shown by means of 4.13, 3.97, 3.74, 3.6, and 3.6 respectively.

Enterprise Resource Planning

On the question on the extent that Enterprise Resource Planning influences the performance of the bank, majority of the respondents indicated that Enterprise Resource Planning influences the performance of the bank to a very great extent, 26% to a great extent, 17% to a moderate extent, 14% to a little extent and only 9% felt it did not affect at all. Results revealed that majority of the respondents strongly agreed that Banks hesitate to adopt ERP systems due to their high cost and risk as shown by a mean of 4.4. They were also in agreement that ERP gives a company an integrated real-time view of its core business processes as shown by a mean of 3.9; that ERP systems track business resources such as cash, raw materials, and production capacity as shown by a mean of 3.9; This McFarlan matches literature that the advent of e-procurement revolution is expected to enhance the status and influence of the purchasing function within organizations (McFarlan, 2004); that ERP systems provide a tightly integrated solution to an organization's information system needs as shown by a mean of 3.7 and that ERP allows employees to manage their company with one system that integrates the entire business process and creates an enterprise-wide view of significant corporate information as shown by a mean of 3.7. This matches Croom literature that cites that ERP allows employees to manage their company with one system that integrates the entire business process and creates an enterprise-wide view of significant corporate information (Croom, 2010).

E-Informing

The researcher also sought the respondent's opinion on whether E-informing influences the performance of the bank. From the findings, 76% of the respondents felt that E-informing influences the performance of the bank while the remaining 24% felt that it did not. Majority (33%) of the respondents indicated that E-informing influences the performance of the bank to a very great extent, 27% of them felt it affected to a great extent, 16% to a moderate extent, 14% to a little extent and only 10% to no extent.

Findings from the study revealed that respondents agreed that E-informing facilitates effective communication within an organization as shown by a mean of 4.1; This matches Aberdeen Group literature that, e-procurement enables companies to decentralize operational procurement processes and centralize strategic procurement processes as a result of the higher supply chain transparency provided by e-procurement systems (Aberdeen Group, 2011); that E-informing enables companies to decentralize operational procurement processes and centralize strategic procurement processes as shown by a mean of 3.9; that E-informing enhances performance of an organization as shown by a mean of 3.7; and that E-informing enhances performance of an organization as shown by a mean of 3.5

Karl Pearson's Coefficient of Correlation

Table 1: Karl Pearson's Coefficient of Correlation

| | | Performance | E-procurement | E-Sourcing | Enterprise Resource Planning | E-Informing |
|-------------------------------------|--|--------------------|----------------------|-------------------|-------------------------------------|--------------------|
| Performance | Pearson Correlation (r) Sig. (2-tailed) | 1 | | | | |
| E-Tendering | Pearson Correlation (r) Sig. (2-tailed) | 0.600 | 1 | | | |
| E-Sourcing | Pearson Correlation Sig. (2-tailed) | 0.838 | 0.662 | 1 | | |
| Enterprise Resource Planning | Pearson Correlation (r) Sig. (2-tailed) | 0.614 | 0.054 | 0.179 | | |
| E-Informing | Pearson Correlation (r) Sig. (2-tailed) | 0.426 | 0.007 | 0.209 | .529** | 1 |
| | | 0.009 | 0.0019 | 0.0046 | 0.000 | |

** . Correlation is significant at the 0.01 level (2-tailed).

As shown in table 1, all the independent variables were found to have a positive correlation with Performance. E-sourcing and Performance having P (value=0.001) was the most significant variable on performance of the bank, followed by Enterprise resource Planning with P(value=0.006). However, E-information with P(value=0.009) and E-tendering P(value=0.015) were the least significant variables on the performance of the Bank.

Summary of the Findings

E-Tendering

For instance in this section, the study aimed at establishing the extent to which respondents agreed with statements on E-tendering and performance. Results revealed that most respondents agreed that Open system of E-tendering leads to the purchase of inferior materials and speeding up of the ,that tenders should only be called from a limited number of firms carefully selected as being capable of doing the work to standard, that the bank has a well-established E-tendering system, that Open E-tendering often lead to unscrupulous suppliers being awarded contracts as that E-tendering enables the selection of a suitable contractor at a time appropriate to the circumstances and that bid selection is always based on lowest tender but this may not always be the most economical solution in the long term.

E-Sourcing

This section aimed at establishing the respondents Level of agreement with statements relating to e-sourcing and performance. Results depicted in table 4.3 revealed that most respondents strongly agreed that E-sourcing reduces purchase prices; that in reverse e- sourcing, suppliers compete dynamically for a buyer's business and typically bid down the price of an item to be purchased; that E-sourcing streamline the bidding process; that E-sourcing enables suppliers from anywhere in the world to compete for a buyer's business; and that purchasing processes should be evaluated and improved before adopting e-procurement tools such as e- sourcing.

Enterprise Resource Planning

Majority of the respondents strongly agreed that Banks hesitate to adopt ERP systems due to their high cost and risk as shown by a mean of 4.4. They were also in agreement that ERP gives a company an integrated real-time view of its core business processes, that ERP systems track business resources such as cash, raw materials, and production capacity, that ERP systems provide a tightly integrated solution to an organization's information system needs and that ERP allows employees to manage their company with one system that integrates the entire business process and creates an enterprise-wide view of significant corporate information,

E-Informing

Findings from the study revealed that respondents agreed that E-informing facilitates effective communication within an organization as shown by a mean of 4.1.the study also found out that that E-informing enables companies to decentralize operational procurement processes and centralize strategic procurement processes, that E-informing enhances performance of an organization and that E-informing enhances performance of an organization.

Conclusions

The study established that Open system of E-tendering leads to the purchase of inferior materials and speeding up of the work. that tenders should only be called from a limited number of firms carefully selected as being capable of doing the work to standard; that the bank has a well-established E-tendering system; that Open E-tendering often lead to unscrupulous suppliers being awarded contracts; that E-tendering enables the selection of a suitable contractor at a time appropriate to the circumstances; and that bid selection is always based on lowest tender but this may not always be the most economical solution in the long term.

The study concludes that E-sourcing reduces purchase prices; that in reverse e-sourcing, suppliers compete dynamically for a buyer's business and typically bid down the price of an item to be purchased; that E-sourcing streamline the bidding process; that E-sourcing enables suppliers from anywhere in the world to compete for a buyer's business; and that purchasing processes should be evaluated and improved before adopting e-procurement tools such as e-sourcing. From the findings, the researcher concludes that ERP gives a company an integrated real-time view of its core business processes; that ERP systems track business resources such as cash, raw materials, and production capacity; that ERP systems provide a tightly integrated solution to an organization's information system needs and that ERP allows employees to manage their company with one system that integrates the entire business process and creates an enterprise-wide view of significant corporate information. Finally, the study concludes that E-informing facilitates effective communication within an organization, that E-informing enables companies to decentralize operational procurement processes and centralize strategic procurement processes. That E-informing enhances performance of an organization and that E-informing enhances performance of an organization.

Recommendations

The study recommends that Procurers are aware of risks and are, as a rule, risk averse. They have a lot to lose and little to gain, if things go wrong. So the initial way to face risk was through political commitment. Risk management may often exist but implicitly, without formal structure or using the name. Plus, as time goes by, more systematic ways to deal with risk emerge. Thus internal controls for such E-procurement should be put in place to avoid quality issues e.g. address the issue of better organizational set ups to encourage and facilitate the procurement of products and services not yet in the market and manage the associated risk. This may include strategic partnership with suppliers, commitment to R&D, staff motivation, encouraging global procurement and implementing project management for public procurement for innovation to mitigate risks associated with innovation as long as policy makers and legislators have not amended the present laws governing Public Procurement. Recommendations to management of Commercial banks and the Kenya banking Sector to commit to staff training for both end-users and procurement staff by conducting in-house training and seminars in the procurement profession and keep up with the dynamism in procurement e.g. INCOTERMS 2010, language, contract interpretation etc.

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