

**FACTORS INFLUENCING THE IMPLEMENTATION OF E-  
PROCUREMENT AMONG FIRMS LISTED ON THE NAIROBI  
STOCK EXCHANGE IN KENYA**

**BY**

**KIBURI F. W.**

**A Management Research Project Submitted In Partial Fulfillment Of The  
Requirements For The Award Of Degree Of Master Of Business  
Administration**

**School Of Business, University Of Nairobi**

**October,2008**



## DECLARATION

This project report is my original work and has not been presented for a degree in any other university for academic purposes.

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This Project report has been submitted for examination with my approval as the University supervisor.

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## DEDICATION

This project is a special dedication to my family Charles and Gloria for love, encouragement, support and guidance throughout my studies.

I cannot forget my parents, Kiburi Chacha and Jane Njeri for bringing me up to be what I am and for having taught me lessons on importance of knowledge through education and good morals. I am proud to be 'a chip of the old block'.

## ACKNOWLEDGEMENT

I shall forever remain indebted to my supervisor Mr. Jeremiah Kagwe for his wisdom, guidance and support not only with this project. I thank you very much for your patience and for being always available to be consulted and to encourage. I am grateful to Mr. Maalu for moderating this project work.

I would also like to thank all my lecturers, colleagues and the entire fraternity of the University of Nairobi for their support and affording me an enabling academic environment. Specials thanks to my cousin James for technical support and for so much help in other areas.

I owe my Daughter Gloria a big thank you for supporting me cheerfully in the house and my husband for being very supportive, encouraging and stepping in for me on many occasions when I was pressed with studies.

"The only rock that stays steady, the only institution I know that works, is the family. We are each others' business. We are each others magnitude and bond."

Last but not least I thank God for everything and for this project. He alone deserves the Glory.

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## TABLE OF CONTENTS

DECLARATION .....	i
DEDICATION .....	ii
ACKNOWLEDGEMENT .....	iii
LIST OF TABLES.....	vi
LIST OF ABBREVIATIONS.....	vii
ABSTRACT.....	viii
CHAPTER ONE: INTRODUCTION.....	1
1.1 Background .....	1
1.1.1 E-procurement.....	1
1.1.2 The Nairobi Stock Exchange .....	3
1.2 Statement of the problem .....	4
1.3 Objective of the Study .....	5
1.4 Significance of the Study .....	5
CHAPTER TWO: LITERATURE REVIEW .....	7
2.1 Introduction.....	7
2.2 The concept of e-procurement .....	7
2.3 Impact of e-Procurement.....	9
2.4 E-procurement adoption.....	10
2.5 E-Procurement implementation .....	11
2.6 Challenges to e-Procurement Implementation.....	13
2.7 The future of e-procurement .....	15
2.8 Summary and conclusions .....	17
CHAPTER THREE: RESEARCH METHODOLOGY .....	18
3.1 Research Design.....	18
3.2 Population of the Study.....	18
3.3 Data Collection .....	18
3.4 Data analysis and Presentation.....	19
CHAPTER FOUR: DATA ANALYSIS AND FINDINGS .....	20
4.1 Introduction.....	20

4.2 Findings from the Respondents' Profile .....	20
4.2.1 Conclusion .....	26
4.3 Findings from Implementation of E-Procurement .....	26
<b>CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS</b>	
.....	38
5.1 Summary .....	38
5.2 Conclusion .....	39
5.3 Recommendations.....	40
5.4 Recommendation for Further Research .....	40
<b>REFERENCES .....</b>	<b>41</b>
<b>APPENDICES .....</b>	<b>50</b>
Appendix I: Companies Listed on Nairobi Stock Exchange .....	50
Appendix II: Questionnaire.....	52
Appendix III: Introduction Letter .....	58

## LIST OF TABLES

Table 1: Length of Time since Incorporation .....	21
Table 2: Type of Industry .....	22
Table 3: Type of Ownership .....	23
Table 4: Number of Employees in the Organization .....	24
Table 5: Length of Time in the Organization .....	25
Table 6: Features of E-Procurement Implemented in Organizations.....	27
Table 7: Motives for Implementing E-Procurement in Respondents' Organization .....	29
Table 8: Extent to Which Some Factors Have Influenced the Success of E-Procurement Implementation .....	31
Table 9: Extent of Challenges on Effective Implementation of E-Procurement .....	34

## LIST OF ABBREVIATIONS

<b>ADB</b>	<b>African Development Bank</b>	<b>PIM</b>	<b>Purchasing Information Management</b>
<b>B2B</b>	<b>Business-to-business</b>	<b>PO</b>	<b>Purchase Order</b>
<b>CMM</b>	<b>Capability Maturity Model</b>	<b>PWC</b>	<b>PriceWaterhouseCoopers</b>
<b>e-commerce</b>	<b>Electronic Commerce</b>	<b>RFI</b>	<b>Request For Information</b>
<b>EDI</b>	<b>Electronic Data Interchange</b>	<b>RFP</b>	<b>Request For Price</b>
<b>e-procurement</b>	<b>Electronic procurement</b>	<b>SCM</b>	<b>Supply Chain Management</b>
<b>ERP</b>	<b>Enterprise Resource Planning</b>	<b>SEI</b>	<b>Software Engineering Institute</b>
<b>EU</b>	<b>European Union</b>	<b>SMEs</b>	<b>Small and Medium Enterprises</b>
<b>GoK</b>	<b>Government of Kenya</b>	<b>IMS</b>	<b>Transactional Management Systems</b>
<b>ICTs</b>	<b>Information and Communications Technologies</b>	<b>TQM</b>	<b>Total Quality Management</b>
<b>IS</b>	<b>Information systems</b>	<b>USA</b>	<b>United States of America</b>
<b>MRO</b>	<b>Maintenance, Repair and Operations</b>	<b>WB</b>	<b>World Bank</b>
<b>MSU</b>	<b>Michigan State University</b>	<b>WTO</b>	<b>World Trade Organization</b>

## ABSTRACT

Business environment is constantly changing making it imperative for organizations to continuously adapt their activities in order to succeed. In order to survive in a dynamic environment, organizations need strategies to focus on their customers and to deal with the emerging environmental challenges. E-procurement system contributes significantly to national productivity growth through the removal of non-value added activities in procurement process. Adoption of e-procurement in Kenya has been slow with practical difficulties in getting the systems operational.

The main objective of the study was to establish the factors influencing implementation of e-procurement among firms listed on the Nairobi stock exchange. To undertake the study, a descriptive survey research design was used. The focus of the study was all the companies listed on the Nairobi Stock Exchange which was 46 firms as at June 2008 (Nairobi Stock Exchange, June 2008). The elements of population are not many hence, a census was undertaken.

Primary data was collected using a structured questionnaire to enable the researcher to gather in-depth information on phenomena under investigation. The data was analyzed by employing descriptive statistics such as percentages, frequencies, and tables. Statistical Package for Social Sciences (SPSS) was used to aid in the analysis. Computation of frequencies in tables, charts, and bar graphs was also used in data presentation.

From the study, the researcher found that, technical skill is the major technological factor influencing implementation of e-procurement. On the same note, management skills and expertise is a resource factor influencing implementation of e-procurement significantly. Incorporated companies are therefore challenged to maximize on both the technical and managerial resources to ensure that e-procurement is implemented successfully within the shortest time possible.

## CHAPTER ONE: INTRODUCTION

### 1.1 Background

Ansolt (1987), notes that the business environment is constantly changing making it imperative for organizations to continuously adapt their activities in order to succeed. In order to survive in a dynamic environment, organizations need strategies to focus on their customers and to deal with the emerging environmental challenges. The Kenyan business environment has been undergoing drastic changes for sometime now. Some of the changes include the accelerated implementation of economic reforms, the liberalization of the economy, discontinuation of price controls, privatization and commercialization of public sector and increased competition. In this changing environment, organizations have to constantly adapt their activities and internal configurations to reflect the new external realities. Failure to do this may put the future success of the organizations in jeopardy (Aosa, 1998).

Globalization of trade and industries has exposed publicly quoted companies in Kenya to stiff competition regionally and internationally. With rapid technological changes, the range of services offered by companies has increased. The world has become a global village due to capabilities enabled by internet and World Wide Web. Implementing innovative technologies leads to competitive advantage and enhances international business (Ragul 2006). In addition, the current trend of breaking trade barriers and the adoption of a private sector-led development paradigm has resulted in the need to implement innovative technologies consistent with the developments putting pressure on Kenyan companies to adapt their operations to meet the new challenges. Through internal processes improvement and adaptations firms can derive strategic benefits by adopting, implementing and enhancing e-procurement systems (Mukhopadhyay and Kekre, 2002).

#### 1.1.1 E-procurement

E-procurement refers to the purchase of goods and services for organizations (Turhan *et al.*, 2006). Procurement usually represents one of the largest expense items in a firm's cost structure (Lennon, 2002; Attaran and Attaran, 2002). The Aberdeen Group (2001) found that the indirect

procurement or the purchase of maintenance, repair, and operations (MRO) goods such as office supplies, personal computers, non-manufacturing items, etc usually constitutes 30-60 percent of a firm's total expenditures (Orr, 2002). Moreover, corporate buyers tend to waste time on non-value adding activities such as data entry, correcting errors in paperwork, expediting delivery, or solving quality problems (Turban *et al.*, 2006). Finding ways of cutting costs in the corporate environment have been spurred by the recessionary trend that saddled the US economy after 2001 and the resolve of firms to use internet-enabled technologies to achieve supply chain management efficiencies for competitive advantage with a specific focus on procurement (Presutti, 2003).

Although the implementation of e-procurement initiatives is not all that new, there is current interest in understanding issues involved in its implementation, especially in a web-enabled environment. Overall, it appears that e-procurement is still in its early stages of adoption in the corporate world. A recent study of spending analysis practices of 157 firms revealed that only a few firms truly know and understand how much they spend, on which products, and with which suppliers (Bushell, 2004). About 80 percent of the study participants recognized that spending analysis is very important to their success, yet only about half of those specific respondents had any formal spending analysis tool in place. The few that had the tools analyzed only half of their total spending. A recent McKinsey Company research study found that the majority of the respondents considered spending analysis and demand management as the two areas that were resistant to improvement in their firms (Kanakamedala *et al.*, 2003). Another research into auto suppliers reveals that 85 percent of the study participants intended to invest at their current or higher levels in new software to automate procurement processes (Hensley *et al.*, 2003). An earlier industry study indicated that only 8-10 percent of the largest 5,000 firms had an e-procurement system in place (Altaran and Altaran, 2002).

Recent research studies show indicative trends on how the leading-edge firms are proceeding with their e-procurement initiatives. The study of Davila *et al.* (2003) demonstrates that there are two types of e-procurement adopters: one group of firms experiments with multiple solutions, whereas the second group commits only to one type of technology. The study also indicates that "follower" firms value the lessons they learn from their more venturesome counterparts who innovate with newer e-procurement technologies. The findings also show encouraging signs of

wider adoption of e-procurement as more firms come forward with their pioneering implementation experiences and as more and more firms take internet-enabled supply chain management initiatives more seriously. Meanwhile, in a field study of an industrial supplier and its customer, Mukhopadhyay and Kekre (2002) found that a supplier could derive strategic benefits when the hub customer firm initiates the e-procurement system and the supplier trading partner, in turn, enhances the system's capabilities. It was also found that supplier trading partners with advanced technological capabilities can significantly increase the benefits of an order processing system both to themselves and their customers.

A number of recent studies have also looked into difficulties faced by firms in launching e-procurement. In a recent survey of 102 international active e-marketplaces and procurement service providers, Huber *et al.* (2004) found the following perceived barriers to electronic procurement: a "wait-and-see" attitude among firms in selecting e-marketplaces and procurement service providers; concerns over security and confidentiality of the data needed to be exchanged in electronic environments; reluctance to share data with trading partners; the "non-feasibility of custom-made products" for pooling initiatives; lack of standardization; and uncertainty over trust and commitment among trading partners.

### **1.1.2 The Nairobi Stock Exchange**

The Kenyan stock market, the Nairobi Stock Exchange was formed in 1954 as a voluntary organization of stockbrokers and is now one of the most active markets in Africa. It is Africa's fourth largest stock exchange in terms of trading volumes, and fifth in terms of market capitalization as a percentage of GDP. According to the Nairobi Stock Exchange report of December, 2007, the Stock Exchange plays an important role in the process of economic development. It helps mobilize domestic savings thereby bringing about reallocation of financial resources from dormant to active agents. Companies can also raise extra finance essential for expansion and development. Stock market enhances the inflow of international capital and also facilitates government's privatization programmes. Quotation promotes higher standards of accounting and resource management by encouraging the separation of ownership of capital from management of capital. Publicly held firms are under the scrutiny of watchful investors. Most of them have the financial capacity to invest in ICT infrastructure and are likely to take the



lead in adopting and implementing emerging technologies that promise the transformation needed for organizational success (Muyuyo, 2004).

## **1.2 Statement of the problem**

According to Rajkumar (2001), e-procurement system contributes significantly to national productivity growth through the removal of non-value added activities in procurement process. Adoption of e-procurement in Kenya has been slow with practical difficulties in getting the systems operational (Ernst and Young, 2001). There is little discussion on implementation and management models of e-procurement or the consequences of these models for the companies, suppliers, and the customers. In fact, there appears to be little consideration of the management or organizational issues associated with e-procurement.

In 1986, a study was conducted by SGS Consultants to evaluate procurement systems in Kenya and found that procurement was not operating efficiently and that the state was losing a lot of money through shoddy deals indicating the need for reforming the procurement system in the country. In 1997, the Government in collaboration with the World Bank commissioned another study to assess the country's procurement processes and systems (Government of Kenya, 2001a) through the procurement and Capacity Reform Project. This study identified the need for a comprehensive review and an implementation of a reform process in the procurement systems. Further, the procurement system in Kenya lacked transparency and fair competition, and that procurement staff were inadequately trained and lacked professionalism. Lack of a professional body that would oversee and instill discipline among procurement officers made them vulnerable to corruption. The studies recommended e-procurement systems for the government to save resources otherwise lost through exorbitant procurement noting that improvement in procurement systems had a direct and beneficial effect on the overall economic situation in the country. Other studies on procurement in Kenya have focused on: - Challenges facing procurement system in manufacturing industries (Migwe 2004); TQM for purchasing management (Gali 1993); Role of Strategic Purchasing in the efficiency of industries (Mulwa 2000); Evaluation of Purchasing Department in a company (Kimuyu 2004); and Effectiveness of procurement of small user items (Musyoki 2003).

Studies e-commerce and e-business were conducted by among others; Mbuvi (2001) who surveyed the potentials of e-commerce by tour operators in Nairobi while Nyambura (2000) examined the challenges facing internet growth in Kenya. Muganda (2001) investigated the business value of e-commerce in selected firms in Kenya. Nuebe (2002), focused on e-business practices of SMEs in the craft industry in Kenya. Muyoyo (2004) focused on factors influencing the adoption and implementation of e-business in companies quoted at the stock exchange covering the general aspect of e- business. According to Muyoyo (2004), most firms listed in the NSF had adopted basic e business technologies that facilitate email, information search, and retrieval. Whereas 27% had websites that could take orders, only 8% could receive payments. Although 69% of them had websites, 85% never used them for online procurement, sales to customers and other business functions. The results of these studies do not explain specific factors influencing implementation of e-procurement.

From the foregoing, it is felt that a knowledge gap exists in the field of e-procurement implementation with respect to firms listed on the Nairobi stock exchange in Kenya, a case that this study sought to investigate.

The research therefore sought to answer the following two questions:

- (i) What are the factors Influencing implementation of e-procurement among firms listed on the Nairobi stock exchange?
- (ii) What are the challenges faced in implementation of e-procurement in Kenya?

### **1.3 Objective of the Study**

- (i) To establish the factors that influence implementation of e-procurement among firms listed on the Nairobi stock exchange?
- (ii) To determine the challenges faced in implementation of e-procurement in Kenya?

### **1.4 Significance of the Study**

The study will be of benefit to the following:

- (i) The government policy makers can use the information to understand e-procurement systems and aid in the formulation and enforcement of legislation that would facilitate efficient implementation of e-procurement systems at all levels both in the public and private sectors.
- (ii) The business community and firms intending to or implementing e-procurement systems will be able to understand the factors influencing its implementation and how to eventually overcome challenges.
- (iii) Academicians and researchers will need the study findings to stimulate further research in the area of e-procurement and international business. The study will thus contribute to the existing body of knowledge.

## CHAPTER TWO: LITERATURE REVIEW

### 2.1 Introduction

Gadde and Hakansson (2001) assert that procurement has become more significant activity in today's organization and contributes to overall turnover and has gradually become more involved in larger parts of the company's total activity and due to this; the procurement department's capacity and competence have great consequences for the efficiency of the company. Procurement directly influences overall company results. One cent less spent on procurement is one cent extra added to the profit. This expression is often confused with the notion that one cent lower price leads to a higher profit which is wrong, due to the indirect cost associated with procurement. Benefits can be made by having deeper and more long-term relationships with a supplier. The term e-procurement results from the electronic support of procurement activities between a purchaser and a supplier through information and communication technologies (Haffey, 2004). According to Croom, (2005), electronic procurement systems in essence mirror the procurement process through the provision of two distinct, but connected, infrastructures - internal processing (via corporate intranet) and external communication with the supply base (via Internet-based platforms). E-procurement software supports the procurement process from requisition to payment.

### 2.2 The concept of e-procurement

Traditionally, procurement has involved a number of communication mediums to facilitate procurement process between the various parties. These have included the use of mail, phone, and fax, EDI and more recently, email and the Internet. Basically, e-procurement means that electronic communications are used to support all of the transactions that facilitate the procurement process (NECCC, 2002). E-procurement is a new phenomenon, but what it wants to achieve is not new. As long as companies have been around, they have sought to improve efficiency and effectiveness. E-procurement is an umbrella concept that backs up the same tree, improving efficiency and effectiveness. A typical e-procurement workflow involves: Requisitioning; Order Submission; Order Tracking; Receipt Processing; Payment Processing; and ERP update (McKie, 2001). An additional theory is put forward by Knudsen, (2003), which

defines e-procurement applications, as: E-sourcing; finding potential new suppliers using the Internet in general or a B2B marketplace for information gathering, E-tendering; Process of sending request for information (RFI), request for price (RFQ), etc to suppliers and receiving the responses using internet technology and occurs takes place in the supplier contact step of the procurement process. E-informing; Handling information about the supplier regarding quality certification, financial status or other unique capabilities and E-reverse auctions; Buying goods and services that have the lowest price or combination of lowest price and other conditions via Internet technology.

According to Neef, (2001), e-procurement systems continue the trend of reducing transaction costs by automating processes, replacing human labor with information technology. In addition, e-procurement not only helps to facilitate increased integration, but also helps to facilitate increased integration. There are some fundamental things the procurement company wants to achieve when it comes to procurement. These include reducing the time employees spend looking for a product, service or suitable supplier, reducing the time and cost of administering purchases, reducing cycle times, increasing volume with a few preferred suppliers to get better pricing and other conditions, as well as limiting choices to only a number of pre-qualified suppliers to ensure quality (Marcin, 2002). The effective implementation of e-procurement is dependent of the following factors:- (1) Availability of financial resources; (2) human resource capacity; (3) Support from all stakeholders; (4) Availability of supporting infrastructure and facilities such as computers, connectivity and servers; and (5) Technology adoption.

E-procurement is more than just a system for making purchases online. A properly implemented system can connect companies and their business processes directly with suppliers while managing all interactions between them. According to Weele, (2001), this includes management of correspondence, bids, questions and answers, previous pricing, and multiple e-mails sent to multiple participants. Essentially, E-procurement systems must enable their users to specify their purchasing requirements, to conduct purchasing market research, to pre-qualify suppliers and if possible allow for the running of tenders. Weele further argued that to realize the savings claimed by the providers of these applications, a high degree of integration is required between the front office and back office on the one hand, and between the back office and the supplier's systems on the other.

Two types of e-procurement systems are extranets and electronic markets. Extranets connect the buyer and its suppliers with a closed network. In contrast, electronic markets create open networks for buyer and supplier interactions. Dai and Kauffman (2005) noted that differences between these two types of e-procurement channels lie in system implementation costs, marketplace benefits, and the extent of supplier competitive advantage that develops due to information sharing. E-procurement applications are designed to facilitate the development of efficient procurement. Internet technology, both the Internet protocol and the public network, plays five key roles in developing e-procurement beyond the capabilities now available in an EDI enabled ERP procurement solution (Steven 2000): (i) Reduces the cost of deploying e-procurement solutions in the enterprise; (ii) Reduces the network management costs of the procurement solution; (iii) Enables a user friendly e-procurement application; (iv) Increases the supplier's benefits from cooperation with buyer; and (v) Expands the reach of trading communities.

### **2.3 Impact of e-Procurement**

E-procurement impact on procurement process has not fully materialized as expected. There are however important and promising features of e-procurement, such as improved information sharing capabilities increased connectivity, and efficiency improvements that should not be overlooked (Rajkumar, 2001). Balchin (2001) argues that an e-procurement solution play a fundamental role in transition of procurement to e-procurement as follows:- (i) Reduce paperwork and redundant effort, improving productivity and lowering the cost of the purchasing process; (ii) Enable companies to locate suppliers with the best prices and quality and help streamline negotiations and contracting; (iii) Take full advantage of an enterprise's buying power by enabling it to qualify for volume discounts and ensuring purchases are made through preferred suppliers; (iv) Streamline and automate purchasing through critical suppliers, enabling more timely and accurate order fulfillment.

Table 2.1 illustrates the impact e-procurement is having on enterprise compliance and management initiatives. Performance improvements recorded map very closely to Aberdeen's previous benchmarks, indicating that e-procurement is consistently delivering on its initial value proposition.

**Table 2.1: E-procurement impact (Average performance)**

<b>Performance area</b>	<b>Before e-procurement</b>	<b>After e-procurement</b>
% of spending that is off-contract ("maverick")	38%	14.2%
Price savings on maverick purchases brought into compliance	17%	7.3%
Requisition-to-order cycles	20.4 days	3.8 days
Requisition to-order costs	\$ 56	\$ 23
% of spending under management of the procurement group	56%	69%

Source: Abredeen Group, December 2004

## **2.4 E-procurement adoption**

Despite the potentials promised by the vendors of such systems, e-procurement got off to a slow start. A study by Lyholzer and Hunziker, (2000) 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. According to this study, however, many companies were planning to implement e-procurement systems at that time. Other studies show similar proportions for other countries (e.g. Industrial Distribution, 2001 and Administration, 2000 for the USA). 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 US only 30 per cent of the companies surveyed use e-procurement systems for requests for quotations, online auctions (25 per cent) or eMarkets (33 per cent). A second challenge is that, despite the overwhelming evidence which shows the advantages of e-procurement systems, proprietary systems such as electronic data interchange (EDI) continue to persist, and have to be included in a company's overall e-procurement infrastructure. To do so, companies need to know the critical success factors in implementing e-procurement strategies, processes and systems. From an academic perspective, some initial contributions to success factor research exist.

## 2.5 E-Procurement implementation

Vasudervan defines implementation as all the organizational activities working towards the management and routinization of an innovation and in the context of e business as the extent to which e business technologies have been put into use by an organization. During the implementation, the organization goes through the process of system development and installation and aims at ensuring that the expected benefits are realized. Implementing an innovation in an organization is often an uphill task owing to resistance arising from the organizational structure that gives stability and continuity in the organization making it more challenging (Muyoyo 2004). Other key influences on the outcome of the implementation process include the role of users, management support, complexity and risks inherent in the project, and quality management of the implementation process

There are some barriers that hinder the adoption of any of Internet based or e-business applications while, some barriers may just relate to e-procurement adoption and are not applicable to other applications. In a study by the Economist Intelligence Unit (the business-to-business arm of The Economist), the main obstacles to e-business success were found to be internal. The greatest identified barriers were the need to re-engineer business processes cited by 58 per cent as very significant, a lack of e-business skills at 50 per cent and a lack of integration between front and back-end systems at 45 per cent (Ernst & Young 2001), while the Internet may give the impression of making it readily possible to swap between suppliers and use new



suppliers, two-thirds of those interviewed said building a trusted relationship with suppliers is necessary before they would trade using the Internet.

Implementation of e-procurement entails major changes, often apparently running counter to the corporate culture, which in most organizations is to empower local business units. Care will be needed to manage the 'soft' aspect including: (i) Need for visible executive sponsorship; (ii) Motivating end-users to adopt the new systems; (iii) Re-engineering internal processes and dealing with cross-company cultural differences; and (iv) Effort will be needed to avoid being seduced by the technology (Buyll, 2002). Naturally there are many barriers to the adoption and implementation of e-procurement, significant amongst these being cost and system integration as confirmed by Croom (2001 and 2005) studies. A PricewaterhouseCoopers survey of 400 senior European business leaders indicates that security concerns and lack of faith in trading partners are the most significant factors holding back e-procurement.

Technology lock-in costs is also another barrier. By implementing a particular type of system, the enterprise essentially "locks" itself into a technology solution and incurs switching costs to move its transaction to a different procurement model. Thus, these costs reduce the extent of the benefits realized from the use of a specific Web-based procurement system. However, lock-in also protects the buyer enterprise from costs due to uncertainty in the supply market. The report, "Procurement management systems: a corporate black hole", Byline Research, identified six reasons as the failures for computerizing procurement (e-procurement): The failure of ERP and supply-chain management systems to address non-production related procurement (often because these systems are either too highly specified, too costly, or both for smaller companies); (ii) The difficulty of integrating procurement systems with the existing IT infrastructure; (iii) Unwillingness to incur training and other costs; (iv) Indifference to the problem on the part of the IT department, either because IT faced other priorities but often simply because procurement was considered an unglamorous or otherwise unrewarding problem to address; (v) Negative attitudes to procurement among senior managers, who were more likely to regard it as an overhead than as a strategic function; and (vi) The perception that automating procurement would prove more difficult than automating many other business processes.

Baseline research named the following barriers to e-procurement: Operational management culture; Supply-base culture; senior management culture; Lack of appropriate offerings; and lack of technical knowledge. Aberdeen Group (2005) identified high costs: e-Procurement systems cost about \$1 million, on average, to implement, including license, implementation, and first-year maintenance fees paid to the independent software vendor (ISV). Systems integrator fees range from 100% to 400% of the license fee; Long implementation cycles: e-Procurement deployments take between 9 months and 13 months to complete, on average; Costly delivery model: e-Procurement systems were premise-based applications that required significant resources to implement and maintain; Poor supplier enablement: A key hurdle to e-Procurement success has been the inability of organizations to effectively aggregate and manage supplier catalog content; Most e-Procurement solutions have focused on automating the front-end procure-to-order cycles, providing little, if any, support for critical back-end processes such as supplier management, sourcing, order fulfillment, and financial settlement.

Inadequate Technological Infrastructure, lack of skilled personnel, inadequate technical infrastructure by partners, lack of integration with business partners, implementation costs, company culture, inadequate business processes to support e-procurement regulatory and legal controls, security, co-operation of partners, inadequate e-procurement solutions and top management support are the barriers identified by Wyld. (2002).

## **2.6 Challenges to e-Procurement Implementation**

Gilunipero and Sawchuk, (2000) asserted that though much progress has been made, significant challenges to successful e-procurement implementation remain. Supplier capacity in the early days of e-procurement in terms of time, effort and resources required to enable suppliers to transact business electronically. Though tremendous progress has been made in supplier enablement, all involved parties – end users, suppliers, and solution providers – continue to work to make enablement as simple and cost effective as possible. End users and entire business units will naturally resist any change in business processes that takes away buying power and buying flexibility. Over the past few years, user adoption has increased with more products and suppliers on the e-procurement system, users have less reason to try to circumvent the system. Still, end users report that several factors continue to hold back user adoption, including inadequate

representation of spending categories within the system, inconsistent purchase requirements, procedures, and supply bases by site or region, and a lack of executive mandates or policies to drive adoption and system compliance. Best Practice enterprises have worked on user adoption for years, and many supply executives at these enterprises have become leading "sellers" of the e-procurement system to end users.

Securing budget/policy support for their e-procurement initiative is a challenge that delays the benefits of e-procurement (Aberdeen Group 2002). Supply executives at best practice enterprises would like to see more investment and support of their e-procurement systems. ICT support in terms of different communication protocols, various security mechanisms, and document standards in use by different suppliers is required. It also requires the establishment and ongoing management of different connections to each supplier. In order to provide assurance of delivery, the solution must automatically identify when an electronic transaction has not been received and provide comprehensive and reliable retry and notification capability. A complete solution must also address the problem of trading electronically with suppliers with widely varying levels of technology. Some suppliers will have advanced e-business technology and knowledge and some may simply have just access to a web browser or email. Finally, security for all parties involved in the exchange is vital for successful implementation of e-procurement system.

Day *et al.* (2003) noted users' reluctance to be subjected to significant changes in business processes as a major barrier to the implementation of e-procurement systems. Saeed and Leith (2003) examined buyers' perceptions of e-procurement risks and arrived at three dimensions: transaction risks resulting from wrong products purchased due to incomplete or misleading information; security risks resulting from unauthorized penetration of trading platforms and failure to protect transaction-related data while being transmitted or stored; and privacy risks arising from inappropriate information collection and information transparency.

Yen and Ng (2002) found that both buyer and seller firms in their sample considered the following prohibitive and discouraging: the costs and development time required to set up online procurement systems, enabling these systems, and meeting workforce requirements of such systems; the lack of adequate security measures to protect data; and trust issues between buyers and sellers. Managers of the seller firms cited attitudinal resistance to change stemming from the

uncertainty over its ability to gain the expected return on investment to cover development costs, the work required to enforce business process changes and worker apprehensions about being replaced by automated procurement systems.

Dai and Kauffman (2002) uncovered a number of issues noted by a panel of academics who were asked to indicate key business-to-business commerce issues. They had expressed concern about a number of what appeared to be difficulties facing business-to-business (B2B) commerce at that time: the marketplace seemed to not be ready to take on B2B services, particularly those of e-procurement exchanges. Further, challenges accompanying building a single point-of-contact between a large multi-unit business firm require changes in the way the firm manages its customers, cross-enterprise systems integration issues, trust among trading partners and information sharing. Issues peculiar to small firms include lack of capital to participate in e-procurement environments and small transaction volumes associated with the firms' scale of business.

Kheng and Al-Hawandeh (2002) investigated the adoption of e-procurement in Singapore and presented stumbling blocks to this initiative from the point of view of Singaporean firms. First, there was concern about security and privacy of procurement transaction data. Second, required significant investments in hardware, software, and personnel training to participate in e-procurement are prohibitive. Third, the laws governing B2B commerce, crossing over to e-procurement, are still undeveloped. For instance, questions concerning the legality and force of e-mail contracts, role of electronic signatures, and application of copyright laws to electronically copied documents are still unresolved. Fourth, technical difficulties related to information and data exchange and conversion such as inefficiencies in locating information over the internet using search engines and the lack of common standards that get in the way of the easy integration of electronic catalogs from multiple suppliers.

## **2.7 The future of e-procurement**

According to Aberdeen Group (2002), users report desired future improvements in terms of streamlined catalog management process, enhanced interfaces with internal systems, supported electronic invoicing and payment processing, improved reporting functionality and

Improved/streamlined user training. The enhanced interfaces to internal systems and improved reporting functionality will be critical to fully realize procurement process savings and to measure the effectiveness of procurement as it becomes more strategic. In addition, the improvements in electronic invoicing and payment processing capabilities will help realize the promise of e-Procurement as the first end-to-end e-business success story. Organizations will have to do additional business process re-engineering to change procurement habits as e-procurement automation is adopted. Employees will no longer have free reign at the local office supply store to buy favorite supplies, and procurement personnel will not be just clerical data processors, but strategic players in business processes and relationships.

Some of the key factors dictating the need for organizational change in the procurement area are the need for leadership in delivering the e-procurement vision, the introduction of new procurement-related skills at all levels, the introduction and promotion of new procurement practices in line with international best practice, the exploitation of modern electronic procurement techniques and systems, introduction of a new framework for the management of procurement based on the concepts of portfolio and category management, promoting co-operation and combined procurement between agencies within and across sectors, development and management of procurement standards, promotion of consistency in procurement policies, practices, documentation and proactive management and measurement of procurement performance.

Any new arrangements established should be designed with regard for existing structures where procurement competencies and experience are already in place, avoid duplication of investment in resources and systems, facilitate communication and knowledge sharing across sectors and agencies, facilitate co-operation in procurement at all levels to optimize economic benefits and define organization structures that are required to match skills and resources to the key tasks required to successfully deliver e-procurement. Integration mechanisms, resource levels key capabilities and skills development and change management activities will need to be considered and addressed during the implementation of the new strategy. Fundamental changes are required in both the private and public sector procurement environment if the benefits of e-procurement are to be achieved.

## **2.8 Summary and conclusions**

E-procurement has undoubtedly become increasingly important issue in economic and business circles globally. This is evidenced by the growing interest of donors, governments, civil society, professional organizations, the private sector and the general public on matters of e-procurement.

The review of the institutional framework and procedures in both private and public has yielded a number of important conclusions (World Bank, 2001). The Kenyan Government has recognized the need to put in place clear laws and regulations to govern procurement. Such laws and regulations have already been passed by Parliament through procurement practitioners' ACT 2007. In effect, this act shall not only govern the existing practices but also govern the new developments in procurement such as e-procurement.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Research Design**

To undertake the study, a descriptive survey research design was used. This is a scientific study done to describe a phenomena or an object. In this case the study phenomenon is implementation of e-procurement. This kind of study involves a rigorous research planning and execution and often involves answering research questions. The method is preferred as it permits gathering of data from the respondents in natural settings. In this case, the researcher administered the data collection tools to the respondents in their workstations.

### **3.2 Population of the Study**

The focus of the study was all the companies listed on the Nairobi Stock Exchange which was 46 firms as at June 2008 (Nairobi Stock Exchange, June 2008). The elements of population are not many hence, a census was undertaken.

### **3.3 Data Collection**

Primary data was collected using a structured questionnaire to enable the researcher to gather in-depth information on phenomena under investigation. The questionnaire consisted of two sections. Section I consisted of items pertaining to profile of the respondents while section II consisted of items pertaining to the area of study. The questionnaire was pre-tested on five randomly selected respondents to enhance effectiveness and hence data validity. The firms whose offices are located outside Nairobi received their questionnaires through their email addresses while for those in Nairobi, the researcher administered the questionnaires by hand delivery. A letter of introduction stating the purpose of the study was attached to each questionnaire. In addition, the researcher made telephone calls to the respondents to clarify issues on a need basis and set time frames for the completion of the questionnaires. Once completed, the researcher collected the questionnaires from the firms whose head offices are located in Nairobi while those outside Nairobi completed the questionnaires online and sent them back. In addition, personal interviews were conducted with 6 of the respondents selected at

random, aided by an interview schedule enabling the researcher to obtain additional information for corroborating findings from the questionnaire.

### **3.4 Data analysis and Presentation**

According to Marshall and Rossman (1999), data analysis is the process of bringing order, structure and interpretation to the mass of collected data. For purposes of the current study, the data was analyzed by employing descriptive statistics such as percentages, frequencies and tables. Statistical Package for Social Sciences (SPSS) was used to aid in the analysis. Computation of frequencies in tables, charts and bar graphs was sought used in data presentation. In addition, the researcher used standard deviations and mean scores to present information pertaining to the study objectives. The information was presented and discussed as per the objectives and research questions of the study.



## **CHAPTER FOUR: DATA ANALYSIS AND FINDINGS**

### **4.1 Introduction**

The study sought to investigate factors influencing the implementation of e-procurement among firms listed on the Nairobi stock exchange in Kenya. A descriptive survey research design was used where the data findings were analyzed using the SPSS and results presented using tables, pie charts as well as bar charts. For easier analysis, the chapter is divided into two sections which include the information on respondents' profile and the information on implementation of E-Procurement. The researcher made conclusions on each section. Targeted respondents were the general manager of the various companies listed in the Nairobi stock exchange. However, some of the targeted respondents were noted to be delegating the task of filling the questionnaire to their companies' departmental managers. During the time of study, there were 46 companies listed in the Nairobi Stock Exchange. Nevertheless, only 40 of them responded to the questionnaires giving a response rate of 87%.

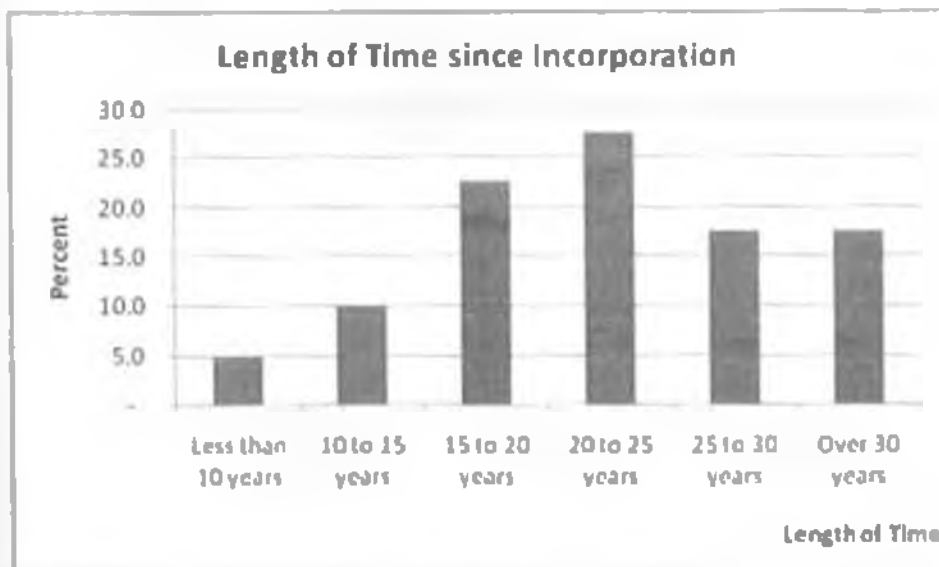
### **4.2 Findings from the Respondents' Profile**

This section discusses the findings from the respondents' profile. Information in this section helped the researcher judge whether the respondents were the right persons to give the information that was needed for the study. The researcher was especially keen in the type of ownership of the company, year of incorporation, total number of employees in the organization and the length of time the respondents have worked in the organization. The researcher also made conclusion on findings from this section.

**Table 1: Length of Time since Incorporation**

	Frequency	Percent
Less than 10 years	2	5.0
10 to 15 years	4	10.0
15 to 20 years	9	22.5
20 to 25 years	11	27.5
25 to 30 years	7	17.5
Over 30 years	7	17.5
<b>Total</b>	<b>40</b>	<b>100.0</b>

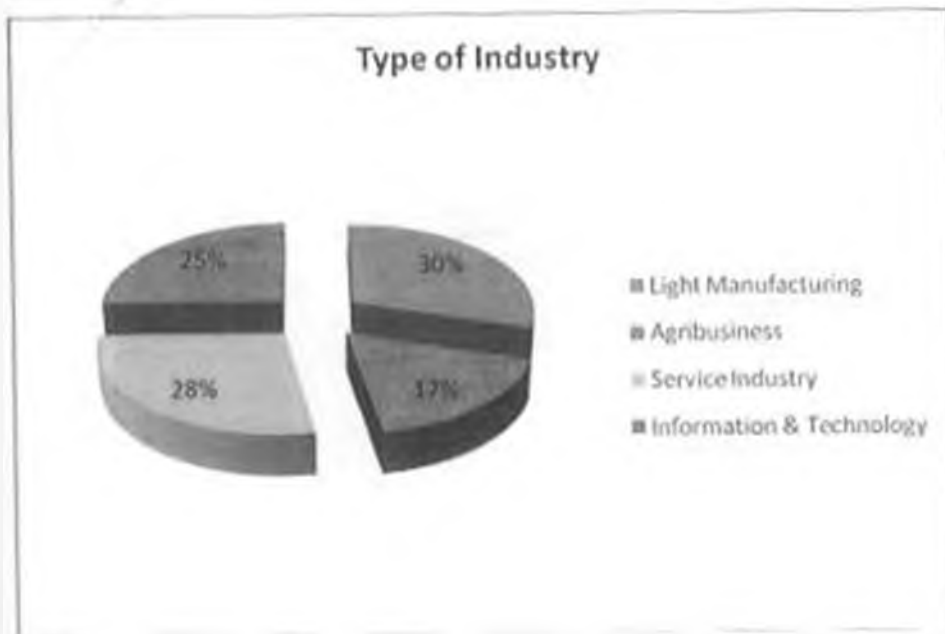
Table 1 above shows the length of the time that the respondents' companies have been in existence since they were incorporated. According to the table, 27.5% of the companies had 20 – 25 years since they were incorporated while 22.5% had a length of 15 – 20 years since incorporation. Only 5% had less than 10 years since they were incorporated into companies. This implies that majority of the respondents' companies have over fifteen years since they got incorporated. This information is also supported by the fact that the companies have been in operations for quite a length of time and hence have managed to be listed in the Nairobi Stock Exchange. Length of time is crucial for this study since it will depict the level of experience of the company in matters of procurement. The bar graph below shows the same information



**Table 2: Type of Industry**

	Frequency	Percent
Light Manufacturing	12	30.0
Agribusiness	7	17.5
Service Industry	11	27.5
Information & Technology	10	25.0
<b>Total</b>	<b>40</b>	<b>100.0</b>

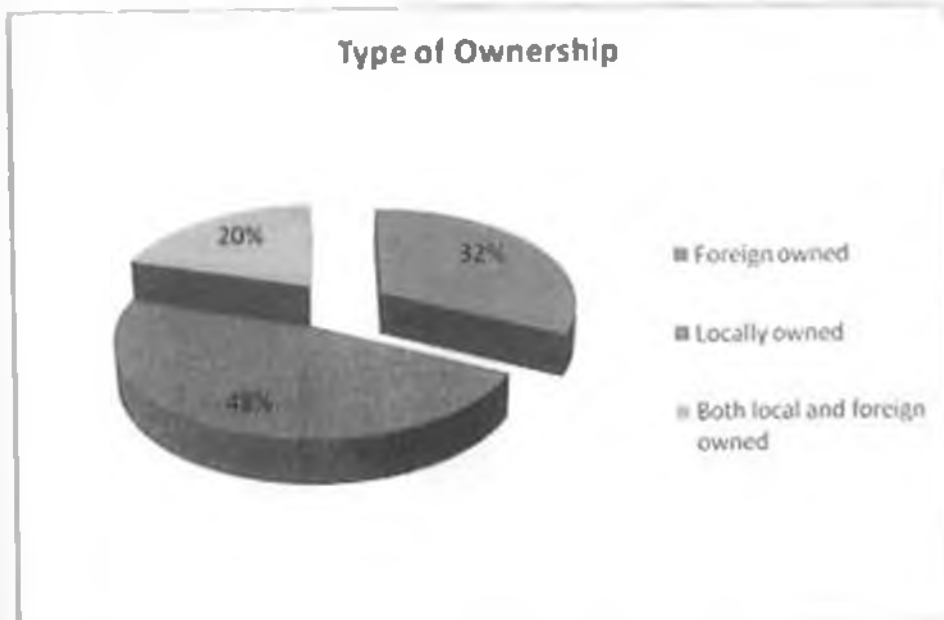
Table 2 above shows the industry that the respondents' companies fell in. The researcher categorized all the company into service, IT, light manufacturing and agribusiness. From the findings, 30% were in light manufacturing, 27.5% in the service industry while 25% were in the IT industry. Only 17.5% were in the Agribusiness. This implies that majority of companies listed in the Nairobi Stock Exchange are in the light manufacturing industry. The same information is shown by the pie chart below.



**Table 3: Type of Ownership**

	Frequency	Percent
Foreign owned	13	32.5
Locally owned	19	47.5
Both local and foreign owned	8	20.0
<b>Total</b>	<b>40</b>	<b>100.0</b>

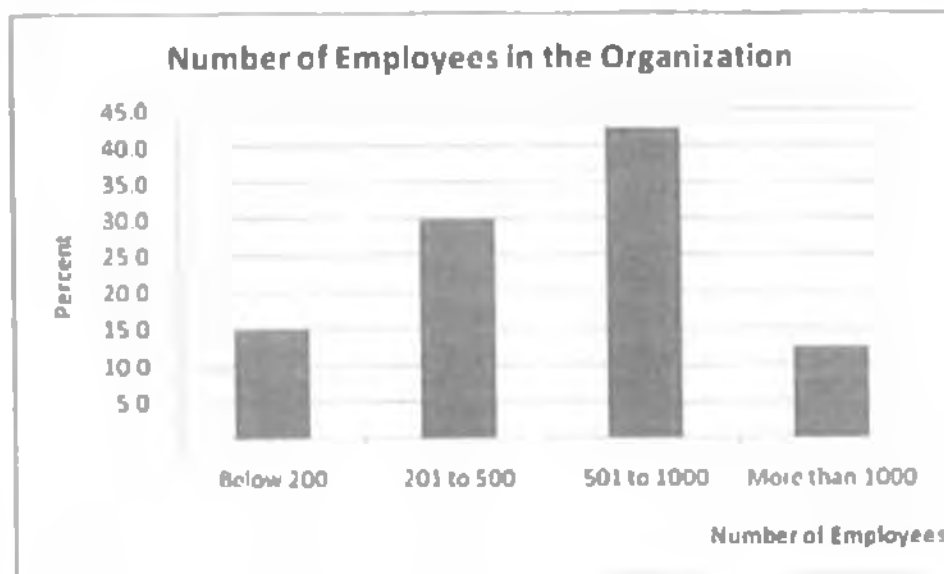
Table 3 above shows the type of ownership of the business. According to the table, 47.5% of the respondents' companies are locally owned while 32.5% are foreign owned. However, 20% of all the respondents' companies are both locally and foreign owned. This implies that, majority of companies listed in the Naimhi stock exchange are locally owned. This information will help the researcher draw a conclusion on whether type of ownership of a company is a factor influencing e-procurement in organizations. This information is also illustrated by the pie chart below.



**Table 4: Number of Employees in the Organization**

	Frequency	Percent
Below 200	6	15.0
201 to 500	12	30.0
501 to 1000	17	42.5
More than 1000	5	12.5
<b>Total</b>	<b>40</b>	<b>100.0</b>

Table 4 above shows the number of employees in the respondents' organizations. From the findings, 42.5% of the respondents' companies had between 501 and 1000 employees while 30% had 201 to 500 employees. Only 12.5% had more than 100 employees. This is an indication that majority of the companies listed in the Nairobi Stock Market had over 500 employees. This implies that these companies have large-scale operations, a fact that shows the importance of e-procurement in the organization. The bar graph below shows the details of the same information.



**Table 5: Length of Time in the Organization**

	<b>Frequency</b>	<b>Percent</b>
1 to 3 years	5	12.5
3 to 5 years	8	20.0
5 to 10 years	21	52.5
10 years and above	6	15.0
<b>Total</b>	<b>40</b>	<b>100.0</b>

The table above shows the length of time the respondents have been in their respective organizations. According to the table, 52.5% of all the respondents had been in their organization for 5 to 10 years while 20% have been in their organizations for 3 to 5 years. Only 12.5% have been in their current organizations for less than 3 years. This implies that majority of the respondents have been in their current organizations for over five years. This is an indication that majority of the respondents were in a position to give precise, relevant and quantified information on the e-procurement since they had served in their company for quite a lengthy time. This is as indicated by the bar graph below.



#### **4.2.1 Conclusion**

This section dealt with demographic information of the respondents. According to the findings, majority of the respondents' companies have over fifteen years since they were incorporated. In addition, majority of companies listed in the Nairobi Stock Exchange are in the light manufacturing industry. This industry deals with processing and manufacturing. The companies are also locally owned and have large-scale operations, a fact that shows the importance of e-procurement in the organization.

#### **4.3 Findings from Implementation of E-Procurement**

This section discusses the implementation of e-procurement in organizations listed in the stock market. The researcher wanted to know if the respondents' companies had implemented e-procurement. The researcher also sought to know the motives for implementing e-procurement in the respondents' organizations. Moreover, the study looked into the extent to which the some factors had influenced the success of e-procurement implementation in the respondents' organization by ranking the factors on a Likert scale. Conclusion on this section is also drawn.

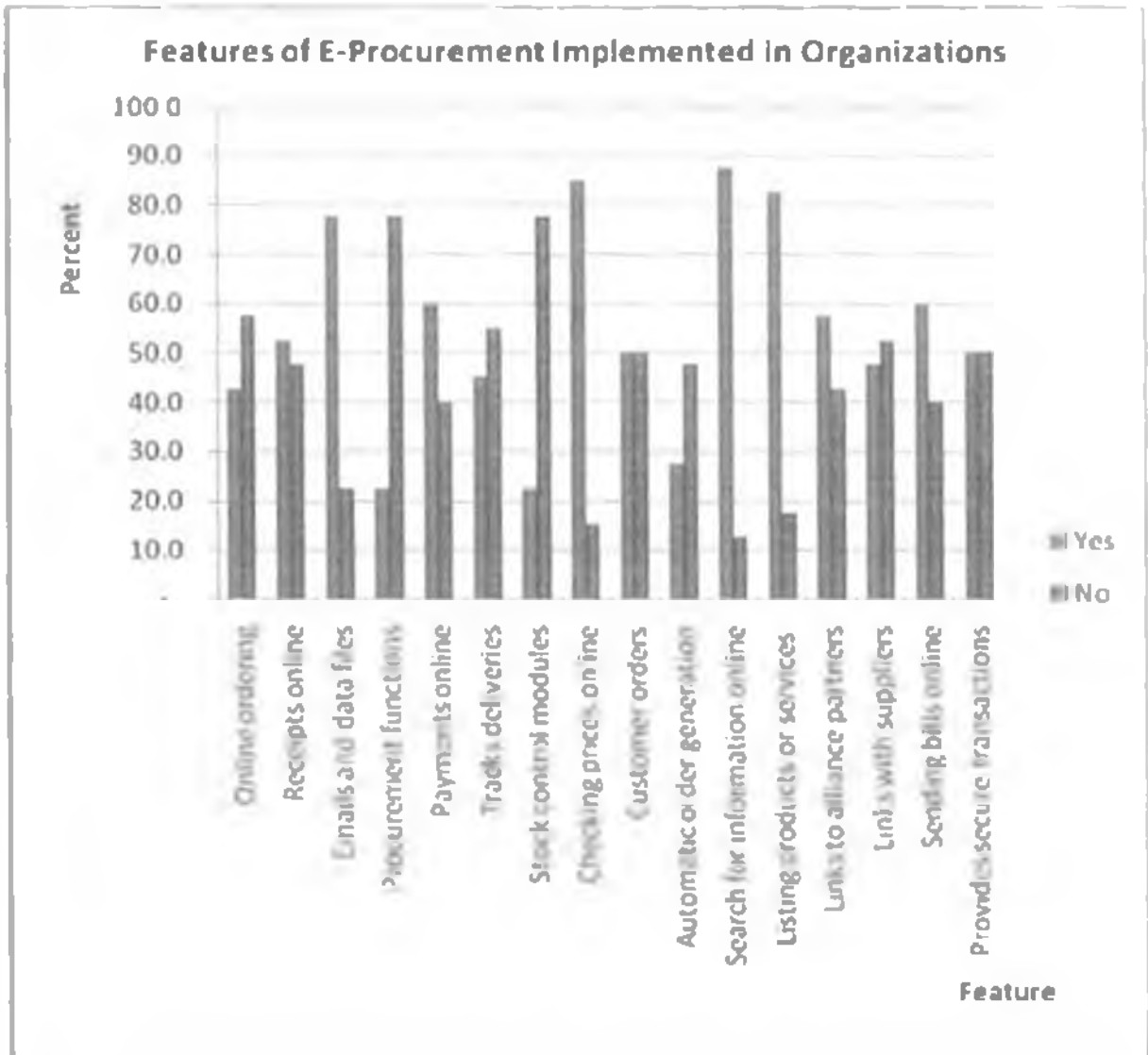
**Table 6: Features of E-Procurement Implemented in Organizations**

	Frequency		Percent	
	Yes	No	Yes	No
Online ordering	17	23	42.5	57.5
Receiving payments online	21	19	52.5	47.5
Sending and receiving emails and data files	31	9	77.5	22.5
Integration of procurement functions to web site	9	31	22.5	77.5
Dispatches payments online	24	16	60.0	40.0
Tracks deliveries	18	22	45.0	55.0
Manages stock control modules	9	31	22.5	77.5
Checking prices online	34	6	85.0	15.0
Links with customer orders	20	20	50.0	50.0
Automatic order generation	11	19	27.5	47.5
Searching for information online	35	5	87.5	12.5
Listing products or services	33	7	82.5	17.5
Links to alliance partners	23	17	57.5	42.5
Links with suppliers	19	21	47.5	52.5
Sending bills online	24	16	60.0	40.0
Provides secure transactions	20	20	50.0	50.0

Table 6 above shows whether the respondents' companies have implemented certain features of e-procurement. According to the table, searching for information online was explained as the most prominent feature of e-procurement implemented by majority of the organizations listed in the stock market. This was supported by 87.5% of the respondents. Other features implemented by the majority of the respondents' organizations were checking prices online with 85%; listing products or services with 82.5% and sending of bills on line with 60% majority. On the other



hand, integration of procurement functions to web site had the lowest support since it had been implemented by only 22.2%. It was also noted that majority of incorporated companies do not manage stock control modules. In general, it was noted that majority of the companies have not implemented most of the e – procurement features. The same information is summarized by the bar graph below.

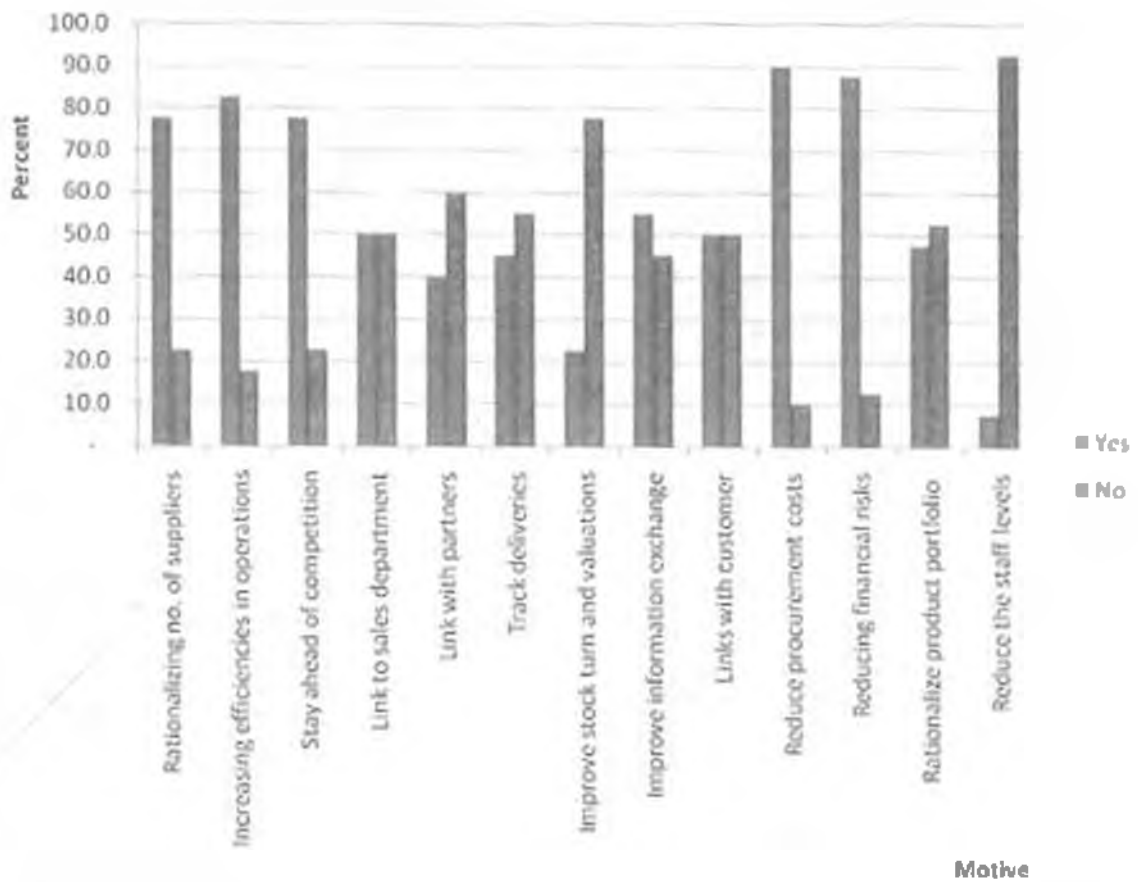


**Table 7: Motives for Implementing E-Procurement in Respondents' Organization**

	Frequency		Percent	
	Yes	No	Yes	No
<b>Rationalizing no. of suppliers</b>	31	9	77.5	22.5
<b>Increasing efficiencies in business processes</b>	33	7	82.5	17.5
<b>Stay ahead of competition</b>	31	9	77.5	22.5
<b>Link to sales department</b>	20	20	50.0	50.0
<b>Link with partners</b>	16	24	40.0	60.0
<b>Track deliveries</b>	18	22	45.0	55.0
<b>Improve stock turn and valuations</b>	9	31	22.5	77.5
<b>Improve information exchange</b>	22	18	55.0	45.0
<b>Links with customer</b>	20	20	50.0	50.0
<b>Reduce procurement costs</b>	36	4	90.0	10.0
<b>Reducing financial risks</b>	35	5	87.5	12.5
<b>Rationalize product portfolio</b>	19	21	47.5	52.5
<b>Reduce the staff levels</b>	3	37	7.5	92.5

Table 7 above shows the motive for which incorporated companies implement e-procurement in their business processes. According to the table, 90% of the companies had the motive of reducing the procurement costs while 87.5 wanted to reduce the financial risks. 82.5% had the motive of increasing efficiencies in business processes. On the other hand, only 7.5% of the respondents' companies had the motive of reducing the staff levels. This implies that majority of incorporated companies have the motive of reducing the procurement costs when implementing e-procurement. This is also shown by the bar graph below.

Motives for Implementing E-Procurement in Respondents' Organization



**Table 8: Extent to Which Some Factors Have Influenced the Success of E-Procurement Implementation**

**a) Technological Factors**

	Not at all	Less Extent	Moderate Extent	Large Extent	Very Large Extent	Mean	Std. Dev.
Secure transactions	5	4	0	16	15	3.8	1.4
Integration of web site to all business processes	3	3	9	13	12	3.7	1.2
Adequate resources and appropriate supporting ICT infrastructure	6	3	14	15	2	3.1	1.1
Technical expertise	1	0	5	11	23	4.4	0.9
Functional expertise	0	0	17	15	8	3.8	0.8

The table above shows the extent to which some technological factors have influenced the success of E-Procurement Implementation. According to the table, technical expertise had a mean of 4.4 with a standard deviation of 0.9 while functional expertise had a mean of 3.8 with a standard deviation of 0.9. This is an indication that, both technical and functional expertise in a company affect the success of e-procurement implementation to the largest extent. The bar graph below show this information

### Technological Factors and e-Procurement Implementation

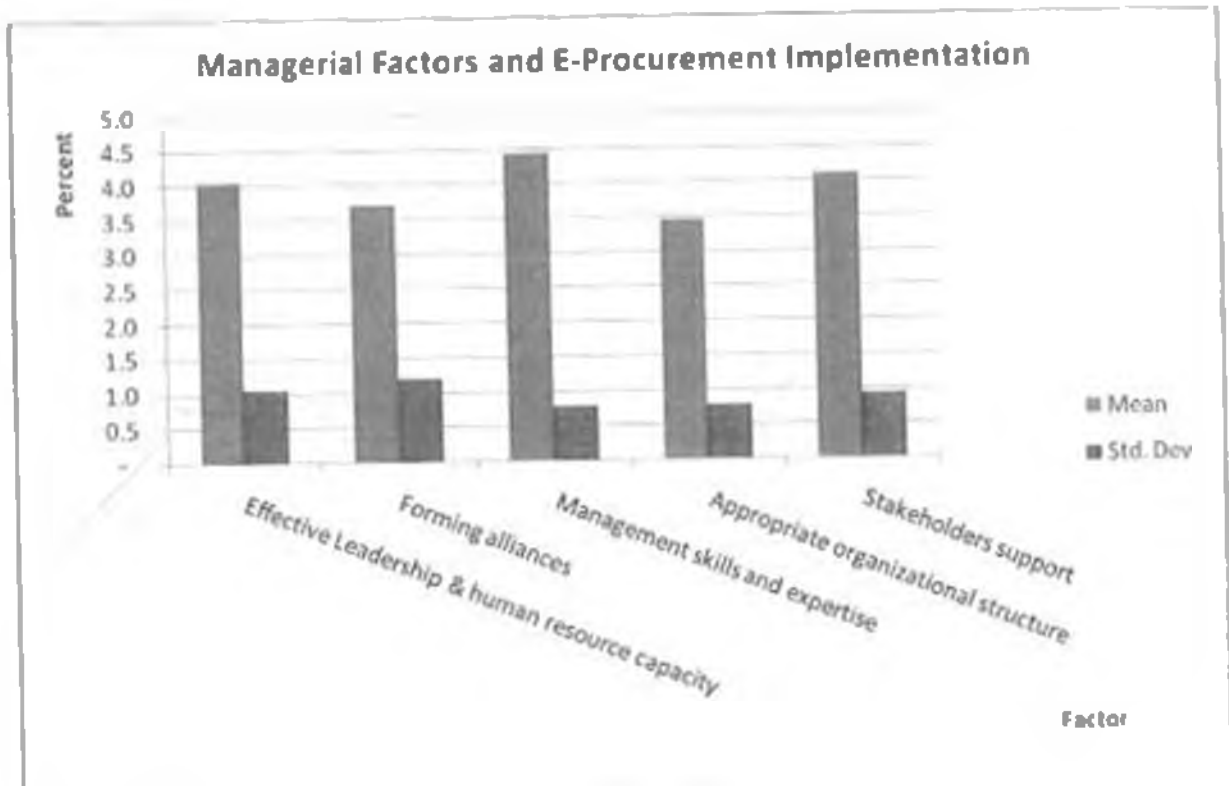


### b) Managerial Success Factors

	Not at all	Less Extent	Moderate Extent	Large Extent	Very Large Extent	Mean	Std. Dev.
Effective project implementation leadership supported by appropriate human resource capacity	2	1	6	15	16	4.1	1.0
Forming alliances – with suppliers, technology providers, customers	3	3	9	13	12	3.7	1.2
Management skills and expertise	0	1	4	12	23	4.4	0.8
Appropriate organizational structure	1	0	23	12	4	3.5	0.8
Stakeholders support	0	3	6	15	16	4.1	0.9

The table above shows the managerial success factors that influence the successful implementation of e-procurement in incorporated organizations. According to the table, Management skills and expertise had a mean of 4.4 and a standard deviation of 0.8. At the same time, effective project implementation leadership supported by appropriate human resource

capacity had a mean of 4.1 with a standard deviation of 1.0. However, appropriateness of the organization structure had a mean of 3.5 with a standard deviation of 0.8. This implies that, managerial skills and expertise is a very important managerial success factor influencing implementation of e-procurement in incorporated companies. This is as shown by the bar graph below.



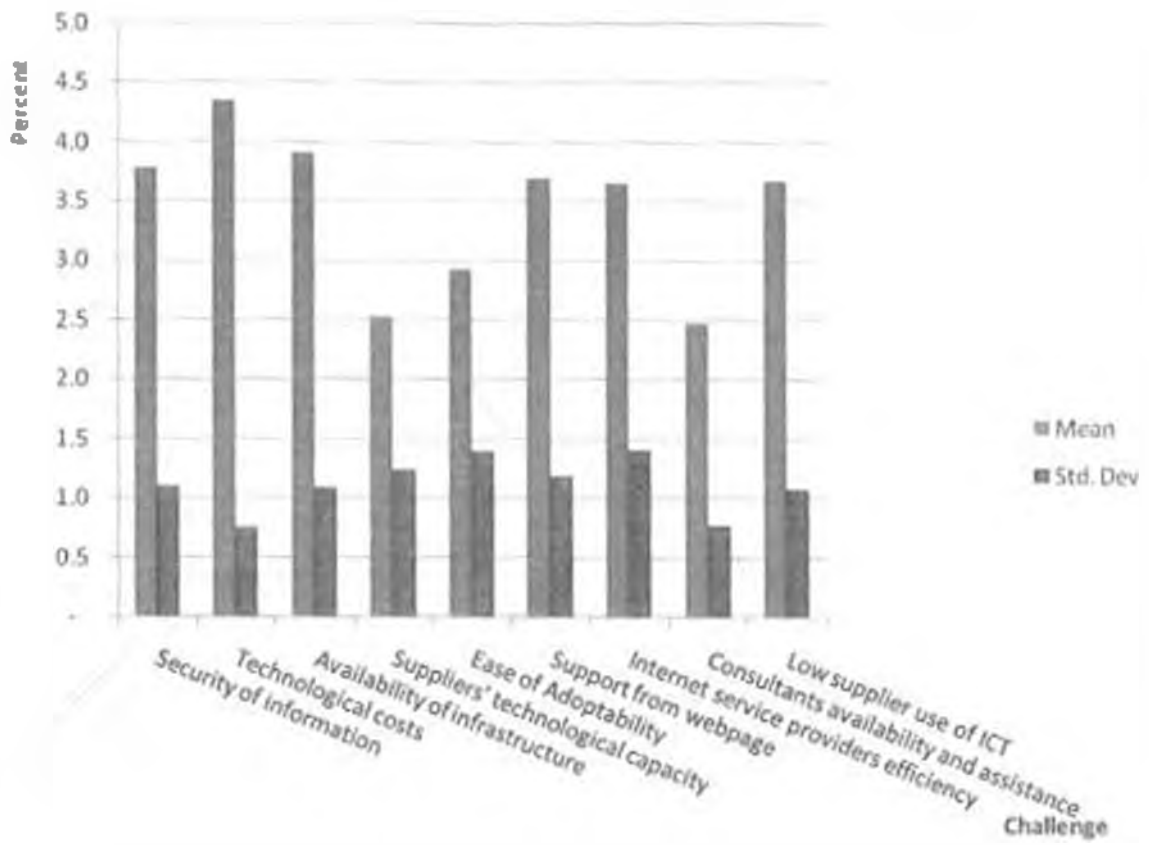
**Table 9: Extent of Challenges on Effective Implementation of E-Procurement**

**a) Technological Challenges**

	Not at all	Less Extent	Moderate Extent	Large Extent	Very Large Extent	Mean	Std. Dev.
Security of Information	2	5	3	20	10	3.8	1.1
Technological costs e.g. software and hardware	0	0	7	12	21	4.4	0.8
Availability of infrastructure to support the technology	2	2	8	14	14	3.9	1.1
Suppliers' technological capacity	10	11	11	4	4	2.5	1.2
Ease with which users can adopt to the emerging technologies	12	0	12	11	5	2.9	1.4
Support from webpage and software developers	3	3	9	13	12	3.7	1.2
Internet service providers efficiency	5	5	4	11	15	3.7	1.4
Consultants availability and assistance	4	16	17	3	0	2.5	0.8
Low supplier use of ICT	0	7	11	10	12	3.7	1.1

Table 9a shows the extent of certain challenges affecting implementation of e-procurement in organizations. According to the table, technological costs had a mean of 4.4 with a standard deviation of 0.8 while availability of infrastructure to support the technology had a mean of 3.9 with a standard deviation of 1.1. On the other hand, consultants' availability and assistance as well as suppliers' technological capacity got a mean of 2.5 each but with a standard deviation of 0.8 and 1.2 each respectively. This is an indication that, technological costs have been the major challenge in implementation of e-procurement. This is also illustrated by the bar chart below.

### Technological Challenges



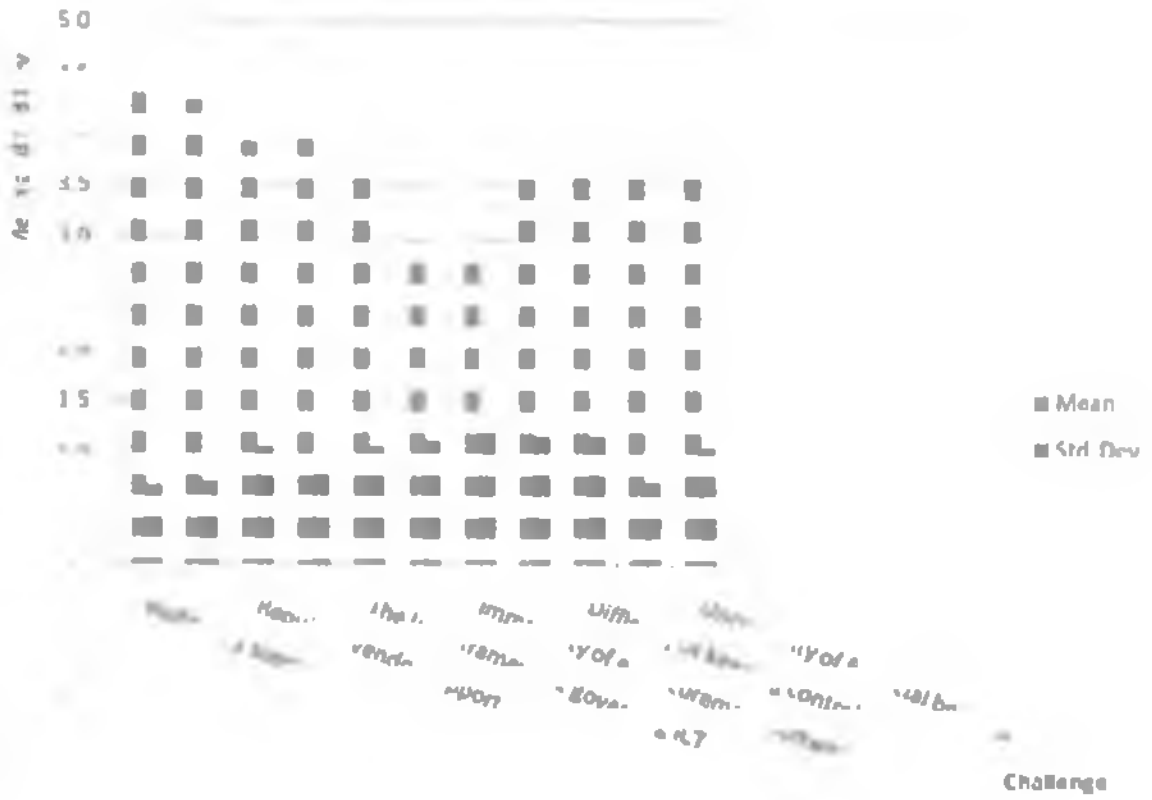


### b) Resource Challenges

	No. at all	Less Extent	Moderate Extent	Large Extent	Very Large Extent	Mean	Std. Dev
Budgetary support	0	1	3	14	22	4.4	0.7
Human Resource capacity	0	0	8	13	19	4.3	0.8
Required vendor support	2	2	8	14	14	3.9	1.1
Government Policy on ICT	1	0	13	13	13	3.9	0.9
The legal framework governing ICT	1	6	11	12	10	3.6	1.1
Backing of the top executives of the Companies	4	11	11	10	4	3.0	1.2
Immaturity of e-procurement software	12	0	12	11	5	2.9	1.4
Alliance partners support	3	3	9	13	12	3.7	1.2
Difficulty of keeping controls and data management standards	2	5	14	7	12	3.6	1.2
Lack of "benchmarkable" reference implementations	0	0	20	13	7	3.7	0.8
Uncertainty of financial benefits	0	7	11	10	12	3.7	1.1

The table above indicates the resource challenges that affect successful implementation of E – Procurement. According to the table, budgetary support was mentioned as the most prevalent challenge with a mean of 4.4 and a standard deviation of 0.7 while human capacity had a mean of 4.3 with a standard deviation of 0.8. On the other hand, backing of the top executives of the companies had a mean of 3.0 with a standard deviation of 1.2. This implies that budgetary support is the major resource challenge facing a successful implementation of e – procurement in incorporated organizations. The bar graph below is an illustration of the same information.

### Resource Challenges



## CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

### 5.1 Summary

The study was dealing with both the factors influencing and the challenges facing successful implementation of e-procurement in incorporated companies. According to the research, 27.5% of the companies had 20 – 25 years since they were incorporated while 22.5% had a length of 15 – 20 years since incorporation. Only 5% had less than 10 years since they were incorporated into companies. The researcher had categorized all the company into service, IT, light manufacturing and agribusiness for easier analysis. From the findings, 30% were in light manufacturing, 27.5% in the service industry while 25% were in the IT industry. Only 17.5% were in the Agribusiness. In addition, 47.5% of the respondents' companies were found to be locally owned while 32.5% were foreign owned. However, 20% of all the respondents' companies are both locally and foreign owned. This implies that, majority of companies listed in the Nairobi stock exchange are locally owned. Concerning the number of employees in, 42.5% of the respondents' companies had between 501 and 1000 employees while 30% had 201 to 500 employees. Only 12.5% had more than 100 employees. This is an indication that majority of the companies listed in the Nairobi Stock Market had over 500 employees. On the same note, 52.5% of all the respondents had been in their organization for 5 to 10 years while 20% have been in their organizations for 3 to 5 years. Only 12.5% have been in their current organizations for less than 3 years.

On whether the respondents' companies have implemented certain features of e-procurement, searching for information online was explained as the most prominent feature of e-procurement implemented by majority of the organizations listed in the stock market. This was supported by 87.5% of the respondents. Other features implemented by the majority of the respondents' organizations were checking prices online with 85%; listing products or services with 82.5% and sending of bills on line with 60% majority. On the other hand, integration of procurement functions to web site had the lowest support since it had been implemented by only 22.2%. Regarding the motives of implementing e-procurement, 90% of the companies had the motive of reducing the procurement costs while 87.5 wanted to reduce the financial risks. 82.5% had the

motive of increasing efficiencies in business processes. On the other hand, only 7.5% of the respondents' companies had the motive of reducing the staff levels.

According to the research, technical expertise had a mean of 4.4 with a standard deviation of 0.9 while functional expertise had a mean of 3.8 with a standard deviation of 0.9. Management skills and expertise had a mean of 4.4 and a standard deviation of 0.8. At the same time, effective project implementation leadership supported by appropriate human resource capacity had a mean of 4.1 with a standard deviation of 1.0. However, appropriateness of the organization structure had a mean of 3.5 with a standard deviation of 0.8.

The researcher analyzed both the technical challenges and resource challenges affecting successful implementation of E-Procurement in organizations. On technical challenges, technological costs had a mean of 4.4 with a standard deviation of 0.8 while availability of infrastructure to support the technology had a mean of 3.9 with a standard deviation of 1.1. On the other hand, consultants' availability and assistance as well as suppliers' technological capacity got a mean of 2.5 each but with a standard deviation of 0.8 and 1.2 each respectively. Budgetary support, however, was mentioned as the most prevalent resource challenge with a mean of 4.4 and a standard deviation of 0.7 while human capacity had a mean of 4.3 with a standard deviation of 0.8. On the other hand, backing of the top executives of the companies had a mean of 3.0 with a standard deviation of 1.2.

## 5.2 Conclusion

According to the findings, majority of the respondents' companies have over fifteen years since they were incorporated. In addition, majority of companies listed in the Nairobi Stock Exchange are in the light manufacturing industry. This industry deals with processing and manufacturing. The companies are also locally owned and have large-scale operations, a fact that shows the importance of e-procurement in the organization

On general issues concerning e – procurement, majority of incorporated companies do not manage stock control modules and have not implemented most of the e – procurement features. Regarding the technical factors both technical and functional expertise in a company affect the success of e-procurement implementation to the largest extent. On managerial success factors,

managerial skills, and expertise is a very important factor influencing implementation of e-procurement in incorporated companies.

It is also notable that, technological costs have been the major technical challenge in implementation of e – procurement. However, budgetary support is the major resource challenge facing a successful implementation of e – procurement in incorporated organizations.

### **5.3 Recommendations**

From the study, the researcher can make the following policy recommendations:

Incorporated companies should manage stock control modules and implement all or most of the e – procurement features. This would improve on efficiency of their business operations.

Technical and functional expertise in a company are very vital if the company will be effective in implementing e – procurement. At the same time, incorporated companies should adopt managerial skills, and expertise, which is a very important factor influencing implementation of e-procurement in incorporated companies.

Since technological and budgetary costs have been the major challenge in implementation of e – procurement, companies should develop capital reserves that will be catering for new developments and innovation in the company this will enable the individual companies to keep in pace with the development in technology.

### **5.4 Recommendation for Further Research**

The researcher would recommend that, the research be extended to other companies, which are not listed in Nairobi Stock Market. This would enhance a better conclusion on factors and challenges that have affected e-procurement in incorporated organizations.

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## APPENDICES

### Appendix I: Companies Listed on Nairobi Stock Exchange

(Main Investments Market Segment (Mims))

Sector	Company
Agriculture	Unilever Tea (K) Ltd.
	Rea Vipingo Ltd.
	Sasini Tea & Coffee Ltd.
	Kakuzi Ltd.
Commercial Services	Access Kenya Group
	Marshalls E.A. Ltd.
	Car & General Ltd.
	Hutchings Biemer Ltd
	Kenya Airways Ltd.
	CMC Holdings Ltd.
	Uchumi Supermarkets Ltd.
	Nation Media Group Ltd.
	TPS (Serena) Ltd.
	ScanGroup Ltd.
Standard Group Ltd.	
Finance and Investment	Barclays Bank of Kenya Ltd
	CFC Bank Ltd.
	Housing Finance Company of Kenya Ltd.
	Centum Investment Company Ltd.
	Kenya Commercial Bank Ltd.
	Kenya Re-Insurance Corporation Ltd
	National Bank of Kenya Ltd.
Pan Africa Insurance Holdings Co. Ltd	
Diamond Trust Bank of Kenya Ltd.	

	Jubilee Insurance Co. Ltd
	Standard Chartered Bank Ltd.
	National Industrial Credit Bank Ltd.
	Equity Bank Ltd.
<b>Industrial and Allied</b>	Athi River Mining Ltd.
	BOC Kenya Ltd.
	British American Tobacco Kenya Ltd.
	Carbacid Investments Ltd.
	Olympia Capital Holdings Ltd.
	E.A. Cables Ltd.
	E.A. Breweries Ltd.
	Sameer Africa Ltd.
	Kenya Oil Ltd.
	Mumias Sugar Company Ltd.
	Unga Group Ltd.
	Ramburi Cement Ltd.
	Crown berger (K) Ltd.
	F.A Portland Cement Co. Ltd.
	Kenya Power & Lighting Co. Ltd.
	Total Kenya Ltd.
	Eveready East Africa Ltd.
	Kengen Ltd

*Source: Nairobi Stock Exchange, June 2008*



## Appendix II: Questionnaire

This questionnaire has been designed to collect information from Procurement Officers or the equivalent, of selected Companies listed on the Nairobi Stock Exchange for academic purposes only. Please complete each section as instructed. The information will be treated in confidence.

### SECTION I: PROFILE OF RESPONDENTS

1. Name of your organization \_\_\_\_\_
2. Year of incorporation \_\_\_\_\_
3. Type of business \_\_\_\_\_
4. Type of ownership (Please tick as appropriate)
  - (a) Foreign owned
  - (b) Locally owned
  - (c) Both local and foreign owned
5. Total number of employees in your organization (Please tick as appropriate)
  - (a) Below 200
  - (b) 201 to 500
  - (c) 501 to 1000
  - (c) More than 1000
6. How long have you worked in your current organization? (Please tick as appropriate)
  - (a) 1 to 3 years
  - (b) 3 to 5 years

(c) 5 to 10 years

(d.) 10 years and above

## SECTION II: IMPLEMENTATION OF E-PROCUREMENT IN KENYA

7. If your organization has implemented e- procurement, please tick the features that describe its business applications from the following list.

Online ordering	
Receiving payments online	
Sending and receiving emails and data files	
Integration of procurement functions to web site	
Dispatches payments online	
Tracks deliveries	
Manages stock control modules	
Checking prices online	
Links with customer orders	
Automatic order generation	
Searching for information online	
Listing products or services	
Links to alliance partners	
Links with suppliers	
Sending bills online	
Provides secure transactions	

8. Please indicate some of the motives for implementing e-procurement in your organization.

Rationalizing number of suppliers	
Increasing efficiencies in business processes	
Stay ahead of competition	
Link to sales department	
Link with partners	
Track deliveries	
Improve stock turn and valuations	
Improve information exchange	
Links with customer	
Reduce procurement costs	
Reducing financial risks	
Rationalize product portfolio	
Reduce the staff levels	
Others ( specify)	

9. Please indicate the extent to which the following factors have influenced the success of e-procurement implementation in your organization by ranking the factors on a five point scale. (Tick as appropriate)

Factors	Not at all (1)	Neutral (2)	Somehow (3)	Much (4)	Very much (5)
Technological drivers					
Secure transactions					
Integration of web site to all business processes					
Adequate resources and appropriate supporting ICT infrastructure					
Technical expertise					
Functional expertise					

<b>Managerial success factors</b>					
Effective project implementation leadership supported by appropriate human resource capacity					
Forming alliances with suppliers, technology providers, customers					
Management skills and expertise					
Appropriate organizational structure					
Stakeholders support					
<b>Others (please specify and rate)</b>					

10. To what extent have the following challenges negatively affected the effective implementation of e-procurement in your organization? (Please tick as appropriate)

Factors	Not at all (1)	Neutral (2)	Somehow (3)	Much (4)	Very much (5)
<b>Technological challenges</b>					
Security of information					
Technological costs e.g. software and hardware					
Availability of infrastructure to support the technology					
Suppliers' technological capacity					
Ease with which users can adopt to the emerging technologies					
Support from webpage and software developers					
Internet service providers efficiency					
Consultants availability and assistance					
Low supplier use of ICT					
<b>Resource challenges</b>					
Budgetary support					
Human Resource capacity					
Required vendor support					
<b>Government Policy on ICT</b>					
The legal framework governing ICT					
Backing of the top executives of the Companies					
Immaturity of e-procurement software					
Alliance partners support					

Difficulty of keeping controls and data management standards					
Lack of "benchmarkable" reference implementations					
Uncertainty of financial benefits					
Other					

11. Please provide additional comments relating to the e-procurement implementation.

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**THANK YOU!**

## Appendix III: Introduction Letter

KIBURI FLORENCE WAMBUI

7812/2001

University of Nairobi

P.O Box 30197

NAIROBI.

26.09.2008.

Dear Sir/Madam,

### **RE: REQUEST FOR RESEARCH DATA**

I am a Master of Business Administration student at the University of Nairobi undertaking a research project in partial fulfillment of the requirements of the degree. My research topic is "Factors influencing the implementation of e-procurement among firms listed on the Nairobi stock exchange in Kenya".

organization has been selected as part of the sample for this study. Please assist my assistant by filling the questionnaire.

The information collected will be used for academic purposes only and confidentiality will be observed. A copy of the project will be submitted to your organization upon request.

Yours faithfully,

Sign  .....

KIBURI F. W.