CHALLENGES AND PROSPECTS FOR USING ICT IN PUBLIC PROCUREMENT IN TANZANIA
THE CASE OF MARYLAND GLOBAL INITIATIVE TANZANIA
– HEAD OFFICE
CHALLENGES AND PROSPECTS FOR USING ICT IN PUBLIC PROCUREMENT IN TANZANIA
THE CASE OF MARYLAND GLOBAL INITIATIVE TANZANIA – HEAD OFFICE

By
DignaMasika

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Award of degree in Masters of Science in Procurement and Supply Chain Management of Mzumbe University

2013
CERTIFICATION

We, the undersigned, certify that we have read and hereby recommend for acceptance by the Mzumbe University, Dar Es Salaam Business School, a Dissertation entitled **Challenges and prospects for using ICT in public procurement in Tanzania.** Partial Fulfillment of the Requirements for the Award of the Masters of Science in Procurement and Supply Chain Management of Mzumbe University

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This work has been made possible through the efforts and support of several individuals. However, as the researcher, I would like to thanks the Almighty God for giving me health and strength to accomplish this work.

The researcher acknowledges her heartfelt and deep sense of gratitude to the supervisor Dr Wilhelm Leonard for his passion, encouragement, understanding in developing study design and successful conclusion of her study. Special thanks and appreciation is extended to lecturers, and members of Mzumbe University Business School for their assistance, guidance and counsel, as well as fellow students such as Evans Adrian and others for their insightful collaboration and advice throughout my study.

The researcher is equally profoundly grateful for her family especially her mother, sisters, brothers and friends for their material and moral support during the whole time of her study Thank you all for the incredible inspiration, support, commitment and affection you showed me.
DEDICATION

This work is dedicated to my beloved Family.
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<tr>
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<th>Description</th>
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<tr>
<td>ADB</td>
<td>African Development Bank</td>
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<tr>
<td>E-Procurement</td>
<td>Electronic Procurement</td>
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<tr>
<td>ICT</td>
<td>Information and Communications Technologies</td>
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<td>MGit</td>
<td>Millennium Global initiative Tanzania</td>
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<tr>
<td>NGOs</td>
<td>Non-Governmental Organizations</td>
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<tr>
<td>PDA</td>
<td>Personal Digital Assistant</td>
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<tr>
<td>PDT</td>
<td>Partible Data Terminals</td>
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<tr>
<td>PPA</td>
<td>Public Procurement Act</td>
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<tr>
<td>SPSS</td>
<td>Statistical Package for Social Science</td>
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<tr>
<td>TV</td>
<td>Television</td>
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<td>WB</td>
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ABSTRACT

Application of Information communication Technology has become a hot topic in recent years. Despite this, there remains a scarcity of critical academic literature on the subject, and relatively little is known about how information communication technology can be implemented management in an organization.

The study main objective is to assess the challenge and prospect for using ICT in public procurement in Tanzania using Marry Land Global Initiative (MGI) in Dar as Salaam as the case study. The study used both purposive and simple random sampling where by the sample of 40 workers was obtained from all the departments and the top managers of the organization.

Data were collected using the triangle approach that was Documentary review, observation and questionnaire method where by the data collected were analyzed presented by using distribution tables

The findings revealed that the ICT faces implementation difficulties, among them are cost related to investment and the support from top management since they do not really understand the benefit that will be derived from the application of ICT.

ICT professionals have to select the best for their organization to utilize, the selection should fit the business need and should not deviate from organizational view of business.

The research suggested that further studies should be done in public sectors since most of the Information communication technology studies have focused on private organization and well developed contrives.
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CHAPTER ONE

INTRODUCTION AND BACKGROUND INFORMATION

1.1 Introduction
This chapter presents the background information to the problem investigated, statement of the research problem, defining the research questions and objectives, and also establishing the significance of the study.

1.2 Context of the Study
Today, organizations find themselves facing rapid series of market shifts, new technological innovations, and changes in government policies (Eisenhardt & Brown, 1999). The mirror image of such phenomena is an increasingly turbulent environment that firms have to deal with (Haeckel & Nolan, 1993; Bradley & Nolan, 1998). As consequence, successful organizations are those that have learned how to be innovative and creative without resorting to the level of discipline that is instrumental in effectively executing plans. In order to do so, it is necessary to modify firms’ organizational designs, taking advantage of information and communication technologies (ICT). ICT is a critical enabler of the redefinition of each organization. It lays the ground for their distribution of Equipment’s, Power, functions, and control wherever they are most effective; given the mission and objectives of the organization and the culture it enjoys (Morton, 1991).

ICT and procurement are two notions, which have attracted much attention among both academicians and practitioners during the last decade. Studies conducted by international non-government organizations, such as Transparency International, hint that public sector inefficiencies, including corruption practices, may account for a waste of 3% to 10% of GDP; thus reducing national growth by up to 2%. The public sees the procurement of goods, services and civil works, especially through the lack of transparency and subjectivity permitted by closed doors traditional tendering methods as the main area for inefficiency in public spending. The implementation of
ICT has been considered as one of the most promising and feasible paths to be followed by public administration in rendering transparency and efficiency in the acquisition of goods and services for the public sector (URT, 2006).

In Tanzania Information and Communications Technologies (ICT) advances since the end of the 20th Century have led to multiple convergences of content, computing, telecommunications and broadcasting. They have brought about changes in other areas, particularly in knowledge management and human resources development. Increasing capacity of ICT has further been empowered by the growth of a global network of computer networks known as the Internet. It has impacted the way business is conducted, facilitated learning and knowledge sharing, generated global information flows, empowered citizens and communities in ways that have redefined governance, and have created significant wealth and economic growth resulting in a global information society.

Tanzania achieved notable progress in deploying ICT notwithstanding the 1974 Prohibition Order on Electronic Computers and Television Sets. The achievements were a result of various adjustments since the early nineties in policy, regulatory and commercial facets, both macroeconomic and within ICT’s converging sectors. The private sector has actively contributed to these achievements by investing in among others, support facilities, training centers and sales outlets. These efforts have enabled government departments, institutions of learning, Non-Governmental Organizations (NGOs), as well as other entrepreneurs; acquire ICT solutions that address their individual problems most appropriately.

According to Kapilima (2007) the government of the United Republic of Tanzania has been observing major deficiencies on the existing public procurement procedures that lead to grand corruption, increased government expenditure; longer lead times, lack of accountability and transparency and noncompliance with value for money procurement. Therefore; for a procurement department to operate both efficiently and effectively in such a complex environment useful structures need to be created and suitable instruments put to use. Information Communication technology can have an
important function in this regard. Information and Communication Technology (ICT) as a whole with e-procurement and e-commerce play a major role in the field of business and trade nowadays. The quest to improve the government service delivery is becoming an important agenda for most governments (Kaliannan et al, 2009). Public procurement plays a significant role to the economy of the country as considerable amounts of money are spent annually in the public sector on goods and services (Baily et al, 2005). With the development of ICT and the shift to knowledge-based economy, e-transformation and the implementation of e-procurement is becoming an increasingly important tool for efficient and transparent in public procurement. Literature reveals that various studies have been carried out in developed countries to investigate the factors hindering ICT implementation. Example of these studies include, Tommaso (2009), Berger, and Gattorna (2001), Kaliannan et al (2009), ADB and WB (2007). These studies have established that despite the various benefits offered by the use of ICT, government’s agencies implementing such systems will face a number of challenges. The vast size and bureaucratic nature of governmental organizations can complicate the implementation of ICT.

1.3 Emerging Challenge

Despite the various benefits offered by the use of ICT in public procurement, implementation may face a number of challenges. The bureaucratic nature of some public organizations can complicate the implementation of ICT. We have experienced frequent change of technology related to ICT, implementers of ICT in procurement will need to realize that and move with pace of technology change. The efficiency of ICT in procurement need to involve both purchaser and supplier, lack of supplier involvement will make the realization importance of ICT in procurement difficult. ICT without doubt, plays a significant role in everyday procurement, but that the expectations of ICT are rarely completely fulfilled due to lack incomplete ICT process integration required for procumbent.
1.4 **Statement of the Problem**

The business world is moving ever fast in this new age of the ICT, with an ever increasing level of sophistication required in order to manage the realities of modern procurement. Traditional procurement practices have found to have proven higher transaction cost, high lead times, longer order cycle, low compliance level, higher inventories level, increased corruption gaps, poor standards specifications and limited access to the procurement entities as physical contact is required. An important issue in public sector management today is the increasing demand for transparency, efficiency and effectiveness in service quality. Due to this, introduction of ICT it is becoming increasingly popular in both the developed and the developing countries to increase the efficiency and effectiveness of the government procedures and activities. Information and Communication Technology (ICT) streamline the procurement processes within the public sector.

Information and Communication Technology (ICT) enables organizations to create efficient workflows and processes that eliminate the existing procurement inefficiencies without disrupting their primary business activities. Despite the fact that application of ICT in developed countries have proven to be the method of choice, little have been done to adopt this practices in Tanzania and Africa at large. Technology is changing the face of procurement; the World Wide Web and the computer have created new ways of doing business, including the business of e-procurement.

Various researches by the trade journals and academicians have been suggesting the factors that hinder e-procurement implementation and the suggestions have been worked out to do away with the existing challenges on adopting e-procurement and e-business as a whole. However most of these researches focus on developed countries where the structure of the economy is common. There are very few studies that have highlighted the key factors that hinder ICT implementation in developing countries like Tanzania. So it is high time that a study to be taken to assess the Challenges and prospects for using ICT in public procurement in Tanzania.
1.5 Research Questions
1.5.1 General research question
What are the challenges and prospects for using ICT in the public procurement in organizations.

1.5.2 Specific Research Questions
The following questions have guided the researcher to answer the general research question when looking for needed information.
(i) What are the major challenges of Information Communication Technology in public procurement practices?
(ii) What are the benefits of implementing ICT system in public procurement practices?
(iii) Are there any factors that hinder ICT implementation in public procurement in Tanzania? What is the strategy or direction towards ICT operation in Tanzanian government entities?

1.6 Research Objectives
1.6.1 General Objective
To identify and assess the challenges and prospects for using ICT in the public procurement in organizations.

1.6.2 Specific Objectives
To gather more detailed information on challenges and prospects of ICT public procurement in Tanzania;
(i) To assess availability and the level of application of ICT tools in Tanzanian government entities
(ii) To identify the benefits of adopting ICT practices in the government entities in Tanzania
(iii) To assess the factors hindering public its implementation in Tanzania
(iv) To identify the direction or strategy of government entities towards ICT implementation
1.7 **Significance of the Study**

This study suggests that ICT does provide internal communications with regards to inventory management?

This study was aiming at ensuring agencies are able to undertake well planned and managed procurement tracking systems and that have led to high quality business outcomes. Knowing that efficient procurement system is vital for the overall economic performance of the government entities, and then the findings of this study have had the following importance to the researcher and the general public. The study contributed to the understanding of the level of application of ICT in public procuring entities in Tanzania.

(i) The Minimize the transaction costs associated with ICT procurement system

(ii) The need to Foster the development of a thriving ICT industry

(iii) Ensure the contractual basis for the procurement of ICT goods and services is consistent clear to both parties, and accounts for any identified risk exposure.

(iv) The findings of this study serve as a guide and reference for students and other researchers who undertook researches on the similar or related field.

This study has also contributed to the body of knowledge.

(v) The study helped the researcher to understand in depth the field of procurement, especially the role of technology to the general performance of a procuring entity.

1.8 **Scope of the study**

The length of this study was limited to selected public sectors based in Dar es Salaam although much could have been studied or obtained from other government agencies

1.9 **Limitations**

In fulfilling this research, the study faces the following limitations:

(i) The time slot allocated for the research work from proposal writing to data collection, analysis and finally to report writing seems to be not allowing the researcher to cover many elements in the population so as to portray a more general picture.
(ii) The meager financial resources is expected to be another drawbacks since the researcher is a self-sponsored, this has hindered the flexibility of the researcher in terms of population coverage and geographical coverage, hence restricting the study to reasonable population sample size within a small and high specialized area.

(iii) Lack of prior study on this concept of importance of Information Communication Technology on procurement cycle has led to researcher to formulate a simple model for analysis presented on the methodology chapter.

(iv) Confidentiality of information, some of the information likely to be treated as confidential and therefore lack of information, not only confidentiality but also uncooperative attitude by potential respondents, this occurred when some of the workers tend to be reluctant in cooperating.

1.10 Delimitations of the Study

Responding to these bottleneck which might have hindering the researcher from getting the desirable findings, the researcher have been normalized the study using different strategies; by using her skills, experiences in the teaching profession and theoretical orientation in research methods, the researcher have selected the study area strategically to minimize the cost. The researcher preferred using questionnaires so as to be able to get the important information to avoid the problem of confidentiality but also for the purpose of saving time since the respondent have been given questionnaires to fill them on their own free time though it should be in a specified period of time.
CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction
This chapter presents thorough review of literature related to our study. It begins with conceptualizing the term Information Communication Technology in procurement process in public organization, the chapter further provides a detailed review of empirical literature, conceptual framework.

2.2 Theoretical Literature Review.
2.2.1 Conceptual Definitions
ICT-According to Wikipedia (free encyclopedia) Information Technology (IT) as defined by the Information Technology Association of America (ITTA) is “the study, design, development, implementation, support or management of computer based information system, particularly software applications and computer hardware “It deals with the use of computers and computer software to convert, store, protect, process, transmit and retrieve information securely.

Its development has gone through different designs, generations, systems, performance capabilities product and service mixes. As a result significant transformation of information and communication has impacted on all aspects of human life.

It's broaden term includes the field of electronic communication. People usually tend to use the abbreviation of ICT (Information Communication Technology) Definition of the term relative to the objective and purpose of the assignment could be ICT components related to hardware, software, and supply or consultancy service.

Procurement” PPA 2004 define the term Procurement to mean buying, purchasing, renting, leasing or Otherwise acquiring any goods, works or services by a procuring
entity spending public funds on behalf of a ministry, department or regional administration of the Government or public body and includes all functions that pertain to the obtaining of any goods, works or services, including description of requirements, selection and invitation of tenderers, preparation and award of contracts.

**E-Procurement** is defined by De Boer et al., (2002) as using internet technology in the purchasing process and refers to the specific purchasing steps in Van Weele (1994). The organizational benefits of using E-Procurement are recognized by practitioners and well documented in literature (Pushmann et al. 2005) and empirical support for the relation between the use of E-Procurement and the purchasing performance was found by Rai et al. (2006).

Procurement: Procurement is described as the purchase of materials and services from outside organizations to support the firm’s operations from production to marketing, sales and logistics. As such, a detailed material schedule and coordination of the procurement and order of material are important in assuring material.

Logistics: Generally, logistics is a concept that emphasizes movement and it may include planning, implementing, and controlling the flow and storage of all goods from raw materials to the finished product to meet customer requirements. There is evidence that the routing of materials is one of the main points which affect cost and time during construction projects.

Handling: Handling of materials is the flow component that provides for their movement and placement. Due to the frequency of handling materials there are quality considerations when designing a materials handling system. Materials handling equipment selection is an important function as it can enhance the production process, provide effective utilization of manpower, increase production and improve system flexibility.
Stock and Waste Control: Stock control is classified as a technique devised to cover and ensure all items are available when required. Stock control can include raw materials, processed materials, assembly components, consumable stores, general stores, maintenance materials and spares, work in progress and finished products. It is of great importance that the bulk of construction materials delivery requires proper management of stock control.

2.3 Empirical Analysis of Past Studies
In this part, the researcher considers what other researchers wrote in relation to the issue of ICT implementation in public procurement and the risks associated with, researcher will consider related studies that touches implementation process, applicability and ICT models that will suggest implementation. In this category numbers of scholars have tried to put their contributions.

2.3 The link between ICT and Supply Chain
The traditional way of managing supply chains has changed dramatically over the last decade. Face-to-face management, manual tracking systems, paper-dominated order processing systems, and wired communication links were the primary management tools available to logistics managers.

Today, they are obsolete Esposito (2004). The countries which have successfully experimented with the supply chain network and knowledge management in the private sector have definite experience to share and lessons and road-map to follow. It has been widely acknowledged that supply chain network has been successfully implemented by the business sector and governments Zollo(1994). SCM has gained importance in the marketing field as being one of the main marketing processes that has a positive influence on shareholder value Leonard-Barton, (1988). But there is a reality that indicates SCM is becoming complex for two reasons. First, a global imbalance in labor costs forces enterprises to source from countries with cheaper labor in order to control production costs to stay competitive. Second, consumers are becoming increasingly more sophisticated, demanding customized products that better meet their needs. The resulting increase in product variation makes demand
forecasting more difficult as an enterprise now has to predict both volumes and option mix instead of a single demand pattern. Furthermore, increased product types result in a greater number of suppliers to manage and higher coordination costs. In addition to optimizing its processes within itself, the enterprises within a supply chain must now coordinate with each other Gash (1994).

Being a complex network of suppliers, factories, warehouses, distribution centers and retailers, the success of any SCMS depends on how well these system components are managed. In recent times information has become a key player in determining the productivity of a complex enterprise. The enterprise’s ability to process information and make rapid but right decisions promises growth. In such a scenario it is necessary to forecast and estimate the demand, supply raw materials to the point of sale locations on and reorganize the business structure if necessary. To realize these goals a system must seamlessly integrate both information and material flow. Such a system can provide access to information, aid decision making and execution. At the other hand, the capital spending on information and communication technology is increasing in many countries Berger & Luckmann(1966). The impact of ICT on many different aspects of economy has been discussed with the help of the conceptual models.

However, only recently empirically grounded models have been presented, they found that ICT has a positive and significant impact on labor productivity and economic growth. The literature review identifies that ICT is expected to have a pivotal role in managing supply chains, now and in the future. In fact it seems that the use of ICT is crucial, especially in the fast moving industries: particularly for managing contemporary supply networks. Moreover, the close relationship of these two concepts, SCM and ICT, make it sometimes hard to assess which one contributes what benefits. For example, implementing a VMI6-model with EDI7- information transmission can lead to substantial reduction of inventories, and at the same time increase material availability. But could the benefits have been achieved without EDI by, for example,
exchanging information via fax? Or, on the other hand, could the information exchange even

2.3.1 The implementation process of information and communication technologies.
First of all, this paragraph illustrates the theoretical framework used by the authors in order to analyze the ICT implementation process. Once adopted, a new technology has to be implemented. In other words, it has to be absorbed by the organization that is involved in the implementation process (Orlikowski & Gash, 1994). This makes it possible for the new technology to become part of the routines of the adopting organization. According to this view, there are two key variables that characterize the implementation process: the organization involved in such process and the technology being implemented. Therefore, implementing a new technology means intervening on both aspects. However, according to the theoretical framework this paper takes advantage of (Berger & Luckmann, 1966; Capaldo, Raffa & Zollo, 1994; Leonard-Barton, 1988; Orlikowski & Gash, 1994, Capaldo, Esposito, Passiante & Raffa, 2004), to intervene on the technological and the organizational dimension is not a process that adheres to predetermined rules. Rather, the social-constructionist theory (Berger & Luckmann, 1966) states that to develop and implement a new technology is a contingent process that involves different factors. Therefore, technological changes cannot be analyzed through a fixed, unidirectional path. Rather, in order to explain such changes it is necessary to look at a number of technological controversies and difficulties that emerge randomly throughout the implementation process.

Although it is not possible to determine in advance the evolution path of the ICT implementation process, the theoretical framework mentioned above lays the groundwork for the identification of the phases that characterize such process. In the first phase, either external or internal drivers may push a firm towards adopting new ITCs. In some cases such distinction may be blurring. However, internal drivers are made up by perceived opportunities (Majchrzack & Salzman, 1989; Tiwana, 2000), perceived organizational problems (Weick, 1995), and change-needs related to the
implementation of a new ICT gizmo or to the upgradi
ing of antiquated information systems (Leonard-Barton, 1988; Capaldo, Raffa & Zollo, 1994). On the contrary, external drivers are related to actors operating beyond the boundaries of a specific firm. In other words, not only does this category refer to clients, suppliers, competitors. But it also deals with regulators that modify operating standards, governments that change legal frameworks, etc.

In the second phase, the actual implementation process starts. At the very beginning, the new technology and the organization implementing it are not aligned. In regards to internal organizational aspects, there are two factors that play a key role in causing such misalignment: management expectations and the so called technological frames.

Management expectations. The choice to invest in new technologies is heavily influenced by management-expectations. Such expectations could span different fields: opportunities related to the improvement of some specific processes (Majchrzack & Salzman, 1989; Tiwana, 2000) such as procurement and sourcing, the change in the supply-network strategies (Harland, 1996), etc. Such expectations have to be transferred to both technology experts and end-users. However, despite their power, managers cannot force these organizational actors to share their expectations (Harrison & Laberge, 2002). Moreover, such expectations may be beyond the reach of the technology and may not be in line with the absorptive capacity of the organization adopting it. These phenomena create a misalignment between the technology and the organization implementing it.

Technological frames. The way organizational actors describe a new technology is not given. Rather, it is influenced by technological-frames (Bartunek, 1984; Goodman, 1990; Orlikowski & Gash, 1994; Tyre & Orlikowski, 1994). New gizmos are characterized by technological features that are beyond the reach of the great majority of organizational actors. In other words, the so called “objective” component of a new technology is not visible to every organizational actor. As a consequence, these actors look at new technologies through their technological frames. Such frames include metaphors and images created through organizational actors’ beliefs and knowledge. According to Orlikowski and Gash (1994),
homogeneous organization-actor groups originate similar technological frames. In this respect, technological experts may look at new technologies through a set of lenses that are different compared to those utilized by managers on the one hand, and end-users on the other. As a consequence, such frames lay the ground work for the emergence of different images of the new technology. This in turn may instigate hostile behaviors towards the new technology, such as resistance, rejection, sabotage, etc. (Harrison & Laberge, 2002, Robey, 1979; Schultz & Slevin, 1975; Torkzadeh & Doll, 1999).

Once identified as the main factors that cause the emergence of misalignments between new technologies and the organizations adopting them, it is necessary to observe how organizations deal with such misalignments. According to the theoretical framework this paper takes advantage of, these misalignments disappear thanks to adaptive cycles involving both the technological and the organizational dimension. On one hand, the technology is modified and customized in order to fit into the organization adopting it. On the other, actions either at the macro or at the micro organizational level create the basic conditions for the homogenization of the technological frames of the organizational actors.

In this respect, the implementation strategy plays a key role in speeding up the adaptive cycles. According to Gallivan (1996) and Agarwal, Tanniru and Willemon (1995), it is possible to make a distinction among passive strategies, proactive strategies and total commitment strategies. Besides this classification, the implementation strategy encompasses a huge variety of actions aimed at dealing with the misalignment between the technological and the organizational dimension. Such actions may include providing incentives, implementing learning activities, promoting skill-building policies, modifying the graphic interface of a piece of software, etc.

In the third phase, the implementation process may be considered completed. Nevertheless, as this process is not linear, the so called “arrival-point” may be different from the one initially expected. In this respect, new opportunities may emerge and may originate new adaptive cycles.
Technology is changing rapidly and one key area to increase access to *Information Communication Technology* (ICT) in the society of both developed and developing countries through its application in procurement. The World Bank Survey of ICT and procurement in Africa indicates a growing interest in the use of ICT in procurement Glen, F & Shafika, I [2007]. Developing skills, knowledge and understanding of the proper use of ICT prepares stakeholders to become literate users of technology in their everyday working environments. However developing countries like Tanzania still depend on the importation of ICT technologies from developed countries. Although ICT has the potential to enhance efficient procurement, this potential has not yet been realized in practice in developing countries because many organizations cannot afford to buy new ICT equipment’s.

At the same time, the changes in ICT technologies continue to give more openings for cost effective and powerful technologies of potential use in procurement processes. This becomes more challenging to stakeholders planning to adopt the use of ICT in operations. There is a continuous gap on knowledge of the available ICTs in the market and what works in specific application. The gap is widely reflected in the research literature [Stevenson, 1997. Preston, 2000. And Kerrey 2000.]. Another researcher in Multimedia technologies argues that, historically new forms of technologies never replace the old one, (e.g. TV did not kill radio and Internet did not kill TV), instead new forms complement the old ones and naturally lead to greater choice for people Leinonen, T. (2007). As a solution for organizations to have access to ICT, Cawthera [2001] identifies three categories of ICT provision for schools in developing nations as, *using second-hand equipment*, *using refurbished second-hand equipment*, and *using new equipment*. However, caution is given that provision of new equipment is usually found in the wealthy organizations, or from centrally financed state provision and cost is one of the hindrances when planning the implementation of ICT in public procurement organs in developing countries [7, 8].

### 2.3.2 State of ICT in Procurement in Europe and America.

ICT development has enabled procurement processes to be done electronically through a web based interface. In this case a procurer sets up a web site. The web site
allows participants to submit sealed bid tendering. The supplier can bid for a single item or multiple items (lots) within a specified time through electronic interface. The awards, supply and service contracts can now be done online. The European Union adopted the application of online auctions since 2004 [38].

The United States of America (USA) adopted the e-procurement in mid-1990 and is rapidly spreading through different organizations in the USA [39]. Apart from these developed nations adopting e-procurement, they give different views on using electronic tendering process. On one side it is useful to improve procurement performance, process simplification, quickening of tendering processes, cost savings in case of awarding standardized products, that can be specified and evaluated in terms of price. While on the other side it is difficult to be applied for products and services which have to be evaluated by commission (e.g. the WB is one of the organizations to implement e-procurement solution for selection of consultants). Another institution prefers online tendering process because it reduces barrier of entry. Participants can submit an offer in the absence of their physical presence. However technological tools can be a barrier in case people cannot use ICT solutions. Hence despite the development of the technology, still there are some organizations in Europe and America use traditional award-to-tender based processes.

2.3.3 Studies in the Czech Republic.
According to the Czech law procedures for the award of public contracts are possible to be done electronically (further see Par. 149 of the Act). The Act works with two basic terms - electronic means and tools. Electronic means shall be understood as a network and services of electronic communications and fax shall not be considered to be an electronic means. Electronic tools shall be understood as a technical equipment or software and, where appropriate, parts thereof, linked to the electronic communication networks or services and facilitating the performance of acts in electronic format under the Act on Public Contract through such electronic communication networks or services, including processing, which comprises digital compression, and data storage.
There is no free of charge governmental computer program for contracting authorities excluding central authorities so private enterprises are developing computer programs which enable the e-procurement.

The computer programs must follow accreditation schemes at the Interior Ministry of Internal Affairs which care of e-Procurement together with the Ministry of Local Development because pursuant to the Act on Public Contract electronic tools may be used in an award procedure only when they have been attested in attestation procedure (Par. 149 sec. 2 of the Act on Public Contract). It means that “general ICT are not possible to use in public procurement. Attestation procedure is the framework of which the requirements concerning conformity of electronic tools with the requirements under the Act on Public Contract and implementing legal regulations to this Act and favorable outcome of the attestation ends with delivering of certificate (atstatement). Until today after three years of effectiveness of the Act on Public Contract there are several full operation computer programs for e-Procurement in the Czech Republic. E-procurement systems are computer programs according to the national legal regulations (see further). They are working on the Internet (an common Internet browser is needed) after log in (password is necessary) of a user, administration of a server with the program is usually by the program provider, electronic signature and data encryption are used in communication, then the program assure regular data backup, establishment of time measurement standards and registration of all activities done in the programs. Safety measures should be number one in providing service of e-Procurement and have to be systematically researched and developed. Security The Government Resolution No. 683 of 26th June 2002 about measures on coordinate spending financial resources for ICT orders and purchases up the financial limit 2 mil. CZK in electronic market GEM for subjects of government administration. Not only central authorities can use GEM free of charge but the program is not for tenders over the financial limit 2 mil. CZK. Defects can easily end in criminal conduct (further see the chapter Legal effects of breaching of electronic procedure of public procurement).
2.3.4 ICT Procurement Processes in Tanzanian
The trend to establish ICT in procurement in Tanzania started in recently since the PPA came into practice in 2001, so far the procurement cadre is at infant stage of development. Still there are number of area to be rectified so as to reach at a level that can be satisfactory for operations, there for it is the duty of procurement professionals to make sure that the cadre moves forward.

2.4. Conceptual framework.
This refers to the diagrammatic presentations of the concepts which the researcher will operationally set in order to achieve objectives. The theory is presented in a model where researcher variables and relationship between them are translated into visual picture to illustrate interconnections between the independent, extraneous, and dependent variables, (Onen, 2008).

The theoretical model has been developed on how implementation of ICT in public procurement in Tanzania, of which challenges have been considered as independent variables and implementation as dependent variables, since they do depend on the effectiveness of challenges. Some of these challenges are lack of system integration between suppliers and buyers, Low level of technology and lack of enough qualified specialists, High cost associated with investment in e-procurement, reluctance to change and senior management support.

The emergence of Information and Communications Technology (ICT) has provided means for faster and better communication, efficient storage, retrieval and processing of data and exchange and utilization of information to its users, be they individuals, groups, businesses, organizations or governments. What had begun as a faster, more accurate and simpler means of word-processing quickly lent itself to being used as a tool for processing and tabulating data as an aid in decision making. With growing computerization and increasing internet connectivity, this process has presently reached a stage where more and more users are motivated to modifying their ways of doing things in order to leverage the advantages provided by ICT.
In other words, this has led to ‘business process re-engineering’. So far as governments are concerned, the coming together of computerization and internet connectivity/web-enablement in association with process re-engineering, promises faster and better processing of information leading to speedier and qualitatively better decision making, greater reach and accountability, better utilization of resources and overall good governance. In the case of citizens, it holds the promise of enhanced access to information and government agencies, efficient service delivery and transparency in dealings and interactions with government.
Figure 2.1: The Conceptual Framework

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Independent Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation of ICT in public procurement.</td>
<td>Integration between suppliers and buyers (system integration)</td>
</tr>
<tr>
<td></td>
<td>Level of technology</td>
</tr>
<tr>
<td></td>
<td>Investment in ICT</td>
</tr>
<tr>
<td></td>
<td>Support from management</td>
</tr>
</tbody>
</table>

Source: Designed & Compiled by the researcher
2.5.1 Description of Framework

Figure 2.1 above show the relationship that exist between dependent and independent variable i.e. implementation of ICT in public procurement, the model above shows that implementation of ICT depend on number of factors, these factors are system integration as perceived to be essential element, because many companies have installed system that work, but in many cases there is no interconnection between companies that trade together, secondly level of technology and qualified skilled labor is among the factors, in many cases third world countries face budget constraint so to invest in ICT, still there is problem in realization of benefit of ICTs projects, to the extent some of senior doesn’t give enough support to the adoption of e-procurement.

The nature of interrelationship between the dependent variable and independent variables were discussed. The independent variables have been used to see whether they was effects on the dependent variable

ICT applications

In this section researcher considers the case of USAID to show how ICT help in distribution system in supply chain. Supply chain management is one of a series of initiatives to help USAID missions and implementing partners in sub-Saharan Africa use ICT more successfully to improve the impact of agriculture-related development projects, including Feed The Future (FTF) projects.

Using ICT to manage distribution and supply chains can increase efficiency and predictability and reduce waste in value chains and have positive impacts on all market actors. ICT applications presented in this paper are divided into the following categories: 1) applications that assist in the management of supplier networks, 2) applications that facilitate traceability, and 3) applications that assist input supply companies to manage their distribution networks.

Management of Supplier Networks. Large buyers often use ICT applications to manage their producer supply networks. Applications address record keeping,
monitoring field agent activities, procurement operations, credit and payment tasks, input distribution, measuring productivity, and forecasting.

ICT means information and communications technologies including cell phone and Internet services, radio, and a wide range of digital devices and related tools including cameras, GIS, and a wide range of hand-held computing devices. Buyers use a range of management information systems (MIS), from basic spreadsheets to complex software used to track resources and facilitate the flow of information. Increasingly, they are using mobile phone based systems for the “channel” to reach the suppliers or their own field agents.

Examples of supply chain management ICT enabled applications include:

**Suguna Poultry**, India’s pioneer in integrated poultry contract farming uses Oracle’s Enterprise Resource Planning (ERP) software database system so its field agents can input data via Web sites on its contract growers’ operations. Information tracked and consolidated includes number of chickens delivered, feed delivered, mortality rates, and prices paid.

**Dunavant Zambia** uses a supply chain management and electronic payment system that it developed jointly with IT company Mobile Transactions Zambia Limited (MTZL) to reduce transaction costs and improve information flows throughout its cotton supply chain, from input distribution to cotton gin inventory control. Suguna Poultry has implemented ERP without donor involvement. The system allows Dunavant to track output, timeliness and quality by individual Small holder farmers, allowing it to reward its best suppliers. The electronic payment system allows Dunavant to make payments to more than 70,000 cotton out growers. due by farmers before going to the field to collect cotton from farmers, allowing it to quickly calculate what is due to farmers and pay the correct amount on the spot, hence reducing “side selling” by farmers needing cash fast. **PROFIT**, a USAID-funded project, facilitated engaging MTZL to develop and implement these systems.

**EJAB Bangladesh**, a potato production and processing company in Bangladesh, developed an MIS for its potato outgrowing operations using a combination of Excel
worksheets and printed forms. Catalysts, a market development project funded by multiple donors, provided support.

**OLAM**, a global company that operates an integrated supply chain for 64 agricultural products in 20 countries, has sophisticated databases of their main suppliers of agricultural commodities with information on production levels, product quality, and input supply needs.

Homegrown, a Kenyan agribusiness company with a network of more than 1,000 outgrowers, uses Quick fire, an audit management software created by ICT company Muddy Boots, to help its outgrowers meet export market standards by ensuring farms supplying the produce are all audited and certified.

Management of Distribution Networks. Input supply companies selling seed, fertilizer, and animal feed frequently use ICT to help manage their inventory and rural distribution networks. These applications include systems that process seed orders and invoice products electronically, control inventory and costs, communicate with clients, and identify new markets. Applications vary and range from simple spreadsheets to more sophisticated tailor-made applications.

One example of a software company providing ICT applications for input supply companies is Feed Management Systems (FMS). FMS provides Microsoft based distribution management solutions that automate and optimize feed formulation, regulatory compliance, pricing, ordering and labeling of feed, inventory management, and risk management for small, medium, and large-sized feed supply companies in Asia, Africa, and the Middle East.

Though in its infancy, there is currently research being done on using Global Positioning System (GPS) mapping technologies to help companies manage their distribution networks. The Rockefeller Foundation and Bill and Melinda Gates Foundation have funded an Agro-Dealer
Strengthening Program in East Africa, one component of which is to support input suppliers to identify underserved markets using GIS and GPS maps. It is unclear at this point, however, how input suppliers will sustain this technology when the program closes (based on interviews with CNFA staff).

**ICT Technologies**

ERP is short for *enterprise resource planning*.

Enterprise resource planning (ERP) is business management software that allows an organization to use a system of integrated applications to manage the business. ERP software integrates all facets of an operation, including product planning, development, manufacturing processes, sales and marketing.

**ERP Software Modules**

ERP software typically consists of multiple enterprise software modules that are individually purchased, based on what best meets the specific needs and technical capabilities of the organization. Each ERP module is focused on one area of business processes, such as product development or marketing. Some of the more common ERP modules include those for product planning, material purchasing, inventory control, distribution, accounting, marketing, finance and HR.

As the ERP methodology has become more popular, software application have emerged to help business managers implement ERP into other business activities and may also incorporate modules for CRM and business intelligence and present them as a single unified package.

The basic goal is to provide one central repository for all information that is shared by all the various ERP facets in order to smooth the flow of data across the organization.

**ERP Vendors**

Depending on your organization's size and needs there are a number of enterprise resource planning software vendors to choose from in the large enterprise, mid-market and the small business ERP market.
Large Enterprise ERP (ERP Tier I)
The ERP market for large enterprises is dominated by three companies: SAP, Oracle and Microsoft. (Source: EnterpriseAppsToday; Enterprise ERP Buyer's Guide: SAP, Oracle and Microsoft; Drew Robb)

Midmarket ERP (ERP Tier II)
For the midmarket vendors include Infor, QAD, Lawson, Epicor, Sage and IFS. (Source: EnterpriseAppsToday; Midmarket ERP Buyer's Guide; Drew Robb)

Small Business ERP (ERP Tier III)
Exact Globe, Syspro, NetSuite, Visibility, Consona, CDC Software and Activate Solutions round out the ERP vendors for small businesses. (Source: EnterpriseAppsToday; ERP Buyer's Guide for Small Businesses; Drew Robb)

Risk associated with procurement.
This author wonders if the use of ICT practices could potentially help build an economy in a third world county, what are the risks to using ICT that could be challenging the process? Since ICT is quickly becoming a standard business practice in developed countries to realize cost savings, improve efficiency, and control the bottom line what is stopping these companies from sourcing through third world countries? This author believes that if there were not risks associated with this relationship that more countries would be taking advantage of a larger supplier network.

Some of the risks that are preventing e-procurement in third world countries are:
(i) Some third world countries do not have enforced regulations that prevent the use of child labor.
(ii) Many third world countries do not have any regulations in place for pollution control.
(iii) By sourcing with a company in a third world country, a host company may increase the cost of their paid warranty claims.
(iv) There may be a language barrier between the sourcing partners.

Bribery and corruption can be an issue in some cultures and may be more prevalent in a third world country where the standard of living is lower and the split between economic levels is more drastic (Capaldo 1994). It is a risk for a company in a developed country to source items from a company based in a third world country that is found to use child labor or bonded labor. This would have a considerable negative impact for the host company when their supply chain is analyzed and could potential ruin relationships with current or future business partners.

Within the United States and many other developed countries there are government regulated environmental restrictions. The compliance with many of the regulations is what can attribute to a company’s carbon footprint. Many third world countries do not require any kind of regulations on a business to take care of the environment. By sourcing with a company in a third world country it could negatively affect the company’s carbon footprint as well as generate negative publicity from many of the environmental watch agencies.

Another growing concern for sourcing with a company in a third world county is the issue concerning warranty of the product you are selling or distributing to your customers. Even though you may receive a large cost savings from the products you’re sourcing, the quality of the product may not be comparable and could cause issues with the overall quality of the product you are producing for your customers. This could negatively affect the amount of warranty claims you will have to pay.

A language barrier could present an issue for the e-procurement process. Many times companies in a third world country could be doing business in a second, or even third, language. To avoid issues with this a host company needs to clearly outline objectives and terms and have a clear knowledge that the sourcing company understands them.
Corruption throughout a supply chain could affect the wages being paid to workers. In order to overcome this challenge in a sourcing relationship, the purchasing company can require as part of the conditions of the sourcing relationship that the supplier sign a code of ethics that ensures that the workers are compensated for their efforts.

If a company from a developed country is interested in sourcing products or services from a company in a third world country there may be risks, but with the proper knowledge and steps in place to overcome them the benefits can outweigh the risks. By including a company from a third world country in your supply chain you could be contributing to the global economy with a more positive impact.

2.5.2 Summary

The summary of the literature review that has been covered in this dissertation as far as the challenges feces implementation of ICT in public procurement in Tanzania concern is as follows:

The Literature Review covers conceptual understanding which analyses the theories, definitions and concepts on ICT implementation and adoption challenges.

The model for adoption was developed so as to conceptualize road map for the whole adoption process, moreover the literature outlined risks associated with implementation of ICT bearing in mind it is the new concept. Literature had gone further to examine status of ICT procurement in the developed countries. lack of commitment and enough fund to invest in ICT implementation was among the most critical factor, shortage of skilled and well trained personnel in ICT was another setback that was perceived to be a problem. There are some of factors which were under researcher observation, like lack of legal and regulatory framework. Generally the literature exhausted almost every necessary issues related to ICT implementation.
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter is on the methodology which employed during the study. In light of this, the areas of the study and reasons which underpin the choice of area are explained. It provide explanations on research design and approach, the population, sample and sampling procedures, data collection methods and instruments to be used during data collection. Explanation on how instruments validated and how data collected and analyzed.

3.2 Research Design

For any study there must be an approach to guide it. A research approach/methodology is the philosophy of the research process including assumptions and values that serve as a rationale for the research and standards that researcher use for interpreting data and research conclusion (Cooksey and Lokuji, 1991). This part is a blue print for the data collection, measurement and analysis. The researcher employ case study design because the case study design emphasis on a full contextual analysis of a fewer events or conditions and their interrelations. Normally researchers employing case study design are able to examine small number of units that have been extracted from a large number of variables and conditions. In this regard, analyses of the data obtained from case study design have been used easily because only small numbers of units have been used.

Thus this study use case study, since it place emphasis on a full contextual analysis of a fewer events or conditions and their interrelations. Case study designs have been taken to be appropriate as it is less time consuming and due to financial constraints. Also we have selected the design due to its nature of having in depth, contextual analysis of the similar situations in other organization, as what we are research in (i.e.challenges and prospects for using ICT in Tanzanian
government entities). For a case study design, a single well designed case study can provide a major challenge to theory and provide a source of new hypothesis and constructs simultaneously. Thus in this study there has been in depth analysis of the matters pertaining to Information Communication Technology tools in procurement industry, including information’s on e- procurement, availability and the level of application of ICT tools, customer ICT adoption in Tanzanian government.

Saunder et al (2004:93) indicate that despite of the unscientific feel a case study has, yet it can be a very worthwhile way of exploring existing theory. They argue that, a simple well, constructed case study can enable you to challenge an existing theory and also provide a source of new hypotheses. Thus for the case of application of ICT in procurement services theory we expect to have new profound applicability of this theory.

3.3 Area of Study
The study was conducted at MGIT-Maryland Global Initiative Tanzania - Head office in Dar es Salaam city. MGIT Head office have been purposively selected due to flexibility in Data Collections, as well in headquarters there are highly experienced employees and many variety of customers of which most of them are dealing with huge procurement for all MGIT braches all those have been included in the study, MGITI have been selected since it follows PPA (2004) and its regulations of 2007.

3.4 Populations and Unit of Inquiry
Units of inquiry refer to the population from which the data are collected. A population is the totality of the objects under the investigation. It is a set of all cases of interest. With respect to this study target population have been MGIT all staff at head office Dar es Salaam.

3.5 Sample Size and Sampling Procedures
The study was carried out in Dar es Salaam. As Sampling is a range of procedures where a researcher uses to gather people, places or things to study (Kombo and Tromp, 2006), A sample is a group of respondents drawn from a population in which
the researcher is interested in collecting information. Therefore, the samples have been made up of 40 respondents. Out of these all procurement staffs will be included and other stakeholders, including User department, doctors (staff) and suppliers.

The researcher specifically target MGIT staff from Head office in Dar es Salaam. This study has adopted purposive and simple random sampling where by only those respondents which are believed to be able to deliver the required data/information’s regarding judgments about ICT procurement issues, with a purpose in mind and the sample thus be selected to include people of interest and exclude those who do not suit the purpose. This has deliberately include/exclude some of the elements in the sample; the majority consideration for including a person in a sample is to identify those respondents having direct connection with procurement. These include manager procurement, Procurement officer, Assistant procurement officers, operational service manager, and suppliers. With this purposively sampling whenever there are more sample, execution of selection rely on simple random sample.

Table 3.1 Number of Expected Respondents by Category

<table>
<thead>
<tr>
<th>S/No</th>
<th>Category Of Respondents</th>
<th>Selected Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IT and Procurement officers</td>
<td>18</td>
</tr>
<tr>
<td>2</td>
<td>Other Staffs and suppliers</td>
<td>22</td>
</tr>
<tr>
<td>5</td>
<td>Total</td>
<td>40</td>
</tr>
</tbody>
</table>

Sources: Designed & Compiled by the researcher

3.6 Data Collection Methods
In conducting the study, the researcher has applied various techniques for collection of both primary data and secondary data. These techniques employed by researcher to get in depth information on the ICT procurement at MGIT.
3.6.1 Secondary Data
Data collection refers to the gatherings specific information aimed at providing some facts. In this study Data comprise both primary and secondary sources. The researcher depended in documentary review where the researcher visited the MGIT records and any procurement survey done where necessary.

Documentation review is a process of reading various extracts found in offices or places dealing with or associated with the issue related to what the researcher is investigating. The report provides peer-to-peer comparisons of business risk factor analyses including operating, customer’s satisfactions, profitability, asset, size & diversity, overall adjustment and industry standard deviation. Thus all these reports plus various procurement journals will give out the clues to respond to these research objectives as to determine the including information’s. And it helps us to have the clues on the effectiveness of trainings and customer satisfaction in authority.

3.6.2 Primary Data
Primary data are information collected specifically for the purpose of investigation under the study. In collecting primary data; the researcher used interviews and questionnaires. In this the tools designed has been interview guide and questionnaires.

3.7 Data Collection Instruments
Interview
Interview is a method of collecting information through oral or verbal communication between the researcher and the respondents. Instrument that is Interview guide has been used as an instrument during interviews and in this case both structured and unstructured questions have been used to collect data from all respondents. Furthermore, interviews has been used due to flexible, adaptable and can be applied to many people and information can be obtained in detail.
In this study separate interview guide has been structured and conducted to company staffs and customers. Among the questions the interviews really aim at having the Authority help to its customers in fulfilling their needed services. Thus using the said interview guide we discover the relationship between customer retention and customer satisfaction differences among the companies. And it helps us to have the clues on the effectiveness of paying attention to customer satisfaction on Authority profitability. Data collected from interviews provided primary data for the study.

**Observation**

An observation has been used to acquire first hand, live, sensory accounts of phenomena as they occur in a real world settings. Non-participatory observation method has been used during the study, and in this case, the researcher not actively be indulged into the participants’ activities but observed the situation with regard to gender treatment and the like.

The rationale for intending to use observation during data collection is because the research method gives an opportunity to gather live data form live situation. Furthermore, observation enables the researcher to observe at what is actually taking place during the study. Researcher is expected to cover every type of observation whereby at MGIT at a particular point in time and access the continuity of the daily operation pertaining to customer satisfaction. Thus, data which have been obtained from observation provided primary data.

**Questionnaires**

Questionnaire has been designed for scheduled interview; most of them have been self-administered with both open and closed ended questions to the official in respective departments. The purpose of the questionnaire will be to compare the reviewers’ comments and the authors’ perception of the problems. Questionnaires are categorized according to target group sections as listed below, questionnaires for MGIT and suppliers. Thus generally questionnaire focus more on
meeting the objective of the study, thus in each section there has been sort of questions which reflect the particular research question.

### 3.8 Data Analysis Procedure

Data analysis is an important step towards finding solution of a problem understudy. It is a systematic process involving working with data, organizing them and dividing them into small manageable parts. Data are further synthesized in order to discover what has been important and what has been learned so as to decide what to tell others.

In this case, the first step has been to categorize data based on the research objectives. Data analysis begins with individual response and responses from different respondents purposively sort and grouped to make them tally with research objectives and research questions. Comparison of data has been done to identify those similar. This reduced data into small manageable and analytical packages which have been used for analysis and drawing the conclusion and recommendations.

There after General descriptive statistics through frequency tables, figures and graph has been used to examine, explore, and evaluate the association and comparison. This involve the use of pie charts which show the contribution of each value to a total, bar graphs which has been used to compare multiple values, line graph which are used to display trends overtime and exploded doughnut chart which has been used to show contribution of value to total while emphasizing the individual values like unexploded pie chart but it not contain multiple values.

After gathering the required information, Quantitative and qualitative data analysis techniques has been employed in this study. Data have been edited, entered, cleaned and coded, ready for analysis.

**Editing:** Data editing is the procedure that improves the quality of data for coding. The information from the study has been carefully checked to ensure completeness, accuracy clarity and uniformity.
**Data entry:** Data has been entered in a computer and then it has been transferred to SPSS format and analyzed using Statistical Package for Social Science (SPSS) and MS-Excel.

**Coding:** By coding, data collected are categorized and transformed into symbols that may be tabulated and accounted as used. Based to the result from the questionnaire and data entry the data has been kept in the format which yield the better SPSS outputs, this means after coding data are ready for analysis. Most of the data in the study are in quantitative form though also qualitative data are featuring in.
CHAPTER FOUR

PRESENTATION AND ANALYSIS OF FINDINGS

4.1 Introduction
This chapter presents and analyses research findings which have been collected from a sample of 40 respondents being employee of MGIT with the aim to identify and assess the challenges and prospects for using ICT in the public procurement in Tanzania.

MGIT Based on the results, different factors that hinder ICT implementation in public procurement has been identified and possible strategies have been recommended. The population under this will be a total number of 40 respondents from MGIT.

4.2 General Profile of the Respondents
Researcher used MGIT as a case study, respondents have been divided into two main categories, majority are men who comprise 78% of total respondents while the remainder are Woman who comprises 22% of total respondents, this unequal proportional of gender balances is due to the nature of job at MGIT,. Data collection was carried out in March and it intended to collect views from respondents with the main aim of assess the challenges and prospects for using ICT in the public procurement in Tanzania.

The research methodology was adopted. The research methodology used different techniques and instruments to collect data from the field of study, questionnaires were used, documentary reviews on job designing and satisfaction and its impact in overall operation, and interviewing top managers and employees of various departments from the case under study. A semi structured questionnaires was used to guide interview.
Table 4.1 Gender Representation

<table>
<thead>
<tr>
<th>Percentage of respondents</th>
<th>No of Respondents</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>78%</td>
<td>32</td>
<td>100%</td>
</tr>
</tbody>
</table>

Figure 4.1: Gender Representation

source; researcher field data.

4.3 Duration of Employment At Work

There is a huge range duration of employment at MGIT, there are young employees who are below 2 years as well as oldest employees who are above 10 at work, and therefore the difference is about has huge implication on level of experience between employees, this means that there are more experienced workers as well as graduate trainee, generally those with no experience they derive it from more experienced staff, this tradition of blending experienced personnel with trainee bring about blending or passing knowledge by induction.

Result from data collected from the field shows that majority of respondents have worked at the range of 5 - 10 years 45%, range of 10 years and above are 21%, moreover about 34% of respondents have worked for less than 5 years. That means majority have worked for more than 5 years this means that there are element of satisfaction between employees, otherwise there would have been more turnover of employee at work from MGIT. The figure below conceptualize the statistical result from the field which shows the level of percentages from different category,
Table 4.2: Duration of employee at work

<table>
<thead>
<tr>
<th>Category of response</th>
<th>Below 2 years</th>
<th>2 &lt; years &lt; 5</th>
<th>5 &lt; years &lt; 10</th>
<th>&gt; 10 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of years</td>
<td>11%</td>
<td>17%</td>
<td>43%</td>
<td>29%</td>
<td>100%</td>
</tr>
<tr>
<td>No of respondents</td>
<td>4</td>
<td>7</td>
<td>17</td>
<td>12</td>
<td>40</td>
</tr>
</tbody>
</table>

Source: Researchers figure, 2013

From the data above one can easily determine that at least every one has worked for some time at the organization, this means these respondents are experienced enough and can give their correct views, level determining issues and capability to make analysis of issues is measured through duration at work (work experience) and education of respondents, it is believed by researcher that the questions needed just simple logic to think and decide, the figure below shows clearly categories and their percentage occupation.

Figure 4.2: Duration of Employee at Work

Source: Researchers figure, 2013
Moreover researcher wanted to find out the level of involvement of employee in different activities including ICT applicability and the people who are involved by knowing the exact number of people who are involved, by finding out the number of managers and non-managers, that means 32(81%) of total respondents are Non managers staff, this population leaves aside 8(19%) respondents as managers staff, of total respondents. Researcher intended to identify these level so to narrow down analysis to specific enquiry, knowing exactly the working environment, nature of job and level of education helps researcher to understand level of involvement and application of ICT, so this helped much in deriving the best analysis and come up relevant result.

Table 4.3: Job Level of Respondents

<table>
<thead>
<tr>
<th></th>
<th>% Job level of respondents</th>
<th>No of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managerial position</td>
<td>19%</td>
<td>8</td>
</tr>
<tr>
<td>Non-managerial position</td>
<td>81%</td>
<td>32</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>40</td>
</tr>
</tbody>
</table>

Source; Researchers figure, 2013

Based on above data presented in the table it can be seen clearly that majority of respondents are Non managers staff, about 32 (81%) are lower level staff. The remaining 19% are managers and senior executives.
With regards to the job level the study found that manager’s respondents were 19 or 19%, while Non manager’s respondents were 81 or 81%.

Section II General Awareness of ICT and Procurement

4.4 Recognition of the ICT concept at MGIT
Researcher questioned respondents in order to assess the level of understanding of ICT concept at MGIT in order to assess challenges and prospects of using ICT in public procurement, researcher wanted to know if respondents are aware of the ICT practices and their application in procurement. Results obtained from the field show that out of total respondents supplied with questionnaire majority responded that they know the concept, around 95% of total respondents said YES they know the concept while fewer 5% said NO they don’t know the concept of ICT. Researcher believe that this trend is resulted by the fact that majority of respondents are graduate, as it has been shown in the above section of education; therefore they have broad knowledge of different application of ICT. The above analysis is presented in the figure below which shows that majority view that majority understand the concept.
Table 4.4: The illustrates the Obtained from the field

<table>
<thead>
<tr>
<th>Recognition of ICT concept</th>
<th>YES</th>
<th>NO</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of response</td>
<td>38</td>
<td>2</td>
<td>40</td>
</tr>
<tr>
<td>Percentage of response</td>
<td>95</td>
<td>5</td>
<td>100</td>
</tr>
</tbody>
</table>

Source; Field data researcher, (2013)

The information displayed in the table above is presented in the pie chart below which shows the percentage of response from respondents depicted from the field of study, the chart shows majority of respondents understanding ICT concept at MGIT, while fewer are not.

Figure 4.4: Number of Response

Source; Researchers figure, 2013

4.5 Do you apply ICT in Daily Procurement Process?

The application of ICT is becoming vital for enhancing efficiency, transparency and cost saving, in general ICT has proved to be essential in bringing procurement practices closer to the door of supplier and user, Researcher questioned respondents over the application of ICT in procurement, majority of respondents, procurement department and user department clearly indicated that they apply ICT in procurement i.e. 81% of total respondents indicated YES they do apply ICT, WHILE 19% of remaining respondents indicated that they do not apply ICT in procurement practices,
this may be because some of the respondents in the organization perform function that is not close to procurement operations

### Table 4.5: The illustrates the Data obtained from the field.

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application of ICT</td>
<td>32</td>
<td>8</td>
<td>40</td>
</tr>
<tr>
<td>Percentage of response</td>
<td>81%</td>
<td>19%</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Source:** Field data researcher, (2013)

The data collected above collected from the field is presented in the Pie chart below, the clear view is shown and from the pie chart the larger portion shows that majority of respondents accept that the organization do apply ICT in procurement operations compared to smaller portion that represent smaller group of respondents that do not comply with the fact that no application of ICT in procurement. This is explained due to the fact that majority of respondents are graduate and their fore they understand and they can apply ICT in procuring, requisitions and identifying needs.

**Figure 4.5:** Data From the Field

![Application of ICT Pie Chart](image)

**Source:** Researchers figure, 2013
4.6 Challenges Associated in using ICT to Procure

In using ICT there are so many associated challenges that individual/ organization face, researcher therefore questioned respondents on the challenges that they face in using ICT to procure goods and services, there is element of technology and skill of the personnel that respondents highlighted as critical area, Technology is an enabler but cannot fix flawed processes (presutti, 2003). Therefore efficient procurement processes should be in place. To benefit from ICT procurement, redundancies in all purchasing processes need to be eliminated before its application. Besides, the system requires the possession of adequate knowledge by users to run smoothly. These highly qualified professionals are difficult to find, recruit, develop and retain because once qualified they are needed everywhere in today’s technological business world. Thus, the need to train and develop employees in the area of procurement and supply chain management as a whole will continue to exist and rise. Respondents indicated that technology is one of the big challenges 57%. ICT procurement requires management investment support without it cannot succeed. Therefore proponents of this technology have to make sure that they have sound business case for now and in the future. Reluctance on the part of some executives to invest the time money to new technology is still a challenge.

Table 4.6: Field Data

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application of ICT</td>
<td>32</td>
<td>8</td>
<td>40</td>
</tr>
<tr>
<td>Percentage of response</td>
<td>81%</td>
<td>19%</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field data researcher, (2013)

4.7 Application of ICT in Procurement and Impact on Performance

Researcher wanted to know the impact of ICT in procurement and its impact on performance, respondents from different department were questioned over the impact of ICT in performance, Respondents were asked to indicate their preference, majority of respondents accepted that ICT has direct impact in performance by influencing speed of operation, efficiency and profit maximization, respondents i.e. user department have experienced improve in speed of service to their requirement, while
finance department have been witnessing the increase in profit in overall operations, around 86% of total respondents accepted that ICT influence performance, while 9% did say that it does not influence and 5% said had no opinion. The table below conceptualizes the statistical result from the field which shows the level of percentages from different category,

**Table 4.7 ICT Performance data**

<table>
<thead>
<tr>
<th>Impact of ICT on performance</th>
<th>influence</th>
<th>No influence</th>
<th>No opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of response</td>
<td>28</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>88%</td>
<td>9%</td>
<td>3%</td>
</tr>
</tbody>
</table>

**Source; Researchers figure, 2013**

From the data above one can easily determine that application of ICT in procurement has been a major boost in increasing performance of an organization in general, this means efficiency, speed and profit maximization has been noticed in. it is believed by researcher that the questions needed just simple logic to think and decide.

**Figure 4.7: ICT Performance data**

**Source; Researchers figure, 2013**
Researcher further to find out more if majority accept that ICT have impact on performance, then what are the impact observed, majority of respondents which is 88% of total respondents who accepted that ICT has impact on performance indicated that speed of operation is the major impact which has been observed as major impact, moreover from increase in speed of operation many other benefit will be realised.

SECTION III: Views of suppliers/user departments on the use of ICT in procurement.

4.8 Do you Recognize the Concept of Application of ICT in Procurement?

In this section researcher contacted suppliers, and the company provided list of 5 suppliers who frequently provides services to MGIT, researcher wanted to know if suppliers has that level of understanding of the concept of ICT in procurement, since it is very essential for suppliers to understand the concept, because they are major players in business.

Therefore researcher questioned respondents in order to assess the level of understanding of ICT concept.

Results obtained from the field show that all suppliers questioned accepted that they understand the ICT concept; moreover they went further indicating that they do apply the ICT for internal operations as well as external operations.

4.9 Capacity and Resource to Invest In ICT

Researcher wanted to know if the suppliers have that capacity to invest in ICT and resource. All five respondents supplied with the questionnaire were willing to express their comments, and majority about 60% of total respondents said that they don’t have enough capacity and resource to invest in ICT since it is very expensive, it require massive investment of fund while 40% accepted that they have the resource and fund to invest in ICT and, since they believe investment in ICT will enhance good business by increasing efficiency, speed and profitability ,moreover this is era of science and technology of which without investing in ICT company may not be
able to mingle with external suppliers, though the challenges are many, which are highlighted below.

4.10 What are the perceived challenges in this ICT application in procurement?
Researcher questioned respondents on the challenges that are associated in application of ICT, respondents were given free room to express their views on the type of challenges, respondents mentioned challenges that are critical, below are number of challenges that appeared to hinder the operations,
(i) Level of applicability is minimal
(ii) Limited Integration between suppliers and buyers (system integration)
(iii) Low level of technology & lack enough skilled personnel.
(iv) Reluctance to change & lack of senior management support

4.11 Researcher Observation
Researcher has observed number of major factor that hinder application of ICT in the country, it has been observed in the country source of power as a major hindrance in general operation of ICT, and cut of electricity has been common phenomenon, moreover researcher has consulted number of documentary and it has been noted that, investment of ICT is very expensive, level of technology and integration are among critical problem that hinder application of ICT.

4.12 Summary
This chapter analyses the data collected from respondents to identify and assess the challenges and prospects for using ICT in the public procurement in organizations. At MGIT, the study analyses the factors that hinder ICT, and it was found that there are number of challenges like the lack of huge fund to invest in ICT, there is no system integration, poor technological level and lack of skilled and well trained personnel are the contributing factors toward ICT implementation., despite these hindering challenges the study identified number of benefit that will be obtained if ICT is implemented in the organizational level as well as country wide.
CHAPTER FIVE

DISCUSSION OF THE FINDINGS

5.1 Introduction
This chapter provides a detailed discussion of the results of the statistical analysis in relation to the hypotheses, previous research and related literature. Data has been presented on the challenges and prospects for using ICT in the public procurement in organizations.

Current status of ICT in the country and perceived benefit; discussion will be centered on the areas that have been presented.

5.2 Respondents Positions in their Organization
The study consulted mainly respondents who hold relevant positions in their organizations, as 19% of respondents were Top managers, while 81% were non managers, these are supporting staff i.e. user.

Respondents appear to be very knowledgeable with ICT and its application in procurement and are very much aware of the challenges associated with application of ICT, since these respondents have been selected purposeful from the organization that are directly connected in procurement, whether they are user or service provider, respondents from finance department are very conversant in quantifying the cost that is required to install versus benefit that is likely to be obtained, ICT department respondents are in a position to measure the technical aspect of the ICT in connection to procurement operation and integration, Administrative and personnel gave out their views on strategies, planning est.

Researcher collected views from respondents of whom majority were involved in procurement operations, i.e. specialists, finance, procurement and administrative who collectively compose a total of 81% while managers comprise only 19%, in general job position had impact on the type of data collected, as position always describe
responsibilities an employee is entitled with, these responsibilities reflects on experience which was very relevant in answering this questionnaire.

5.3 Challenges as stated by both Service provider and suppliers.

5.3.1 Low level of technology of ICT and lack of skilled personnel.

Results collected from the field shows that majority of respondents around 86% of total respondents consulted indicated that there is low level of technology of ICT and we do not have enough people who are skilled.

A study conducted by Davilla Gupta and Palmer (2002) asks a question, what ICT technologies are better suited to the needs of a particular segment? It was argued that organizations should judge the market segment they are in so that they can know which ICT will dominated the industry and make choices accordingly. Companies within developing countries should ask themselves what is best for them. Mere imitation of what others are doing may not benefit developing counties. Choosing technologies that is relevant to particular organizational needs is what will benefit developing countries as well as small scale companies.

Generally, there is a need to develop ICT technologies in procurement. Since ICT is at very infant stage in our country, many organizations in Tanzania end up utilizing e-mail only, utilization is very partially, moreover there is lack of knowledge on how to use it and very poor interface between users, therefore developing ICT technology remain as critical strategic factor.

5.3.2. Discussion on Management Supports on ICT implementation

ICT requires management investment support without which it cannot succeed. therefore proponents of this technology have to make sure that they have sound business case for any implementation now and in the future.

It is very hard to quantify the benefit that will be derived from ICT investment, it the main that management afraid to invest in this technology, researcher argue it is very vital for procurement professionals to come up with very sensitive proposal to the management, showing the benefit that will be obtained when we implement ICT,
regardless the number of obstacles that the technology faces still procurement professionals can make valuable argument that will convince management to invest in ICT, the investment in requires really huge amount of money, therefore it is necessary to prepare heavy relevant facts that will enable management to invest in ICT.

5.3.3. Fear of security Issue and risk in using e-procurement
ICT technologies are still perceived to involve significant risks. From a technology point of view, the lack of an overall accepted standard is holding back a sizeable number of companies from using technologies. These companies fear buying into a “closed” technology that cannot communicate with other technologies and thus limits access to a broader network of supply chain constituencies. But the risks are not limited to technology; they also involve the business model that will emerge to support ICT technologies. These technologies will redefine the supplier-customer relationship who can be a supplier, who pays for the investment required to access the technology, what information gets shared. The success of some ICT technologies relies on network effects that appear only if enough players use these technologies. Finally, there are risks that bridge business and technology, including security and control systems that will insure the reliability of ICT technologies. The good news is that companies that have aggressively moved into these technologies perceive these risks to be lower than companies that have adopted a “wait and see” approach. If this lowers risk perception is related to their experience with ICT.

5.6. Generalizations
The study was concerned with the challenges and prospects for using ICT in the public procurement in organizations.

As seen from the summary and discussion of the findings, all of the factors hold proof to the challenges that faces ICT implementation in procurement organizations in Tanzania, the study identified number of factors that hinders ICT implementation, it was noted that the project require huge some money to install the software and connect lunch the system, moreover it was identified that the project faces major transactional risk, over payment and operation, technological advancement were seen
to be another factor that have impact on ICT implementation. Generally the ICT implementation faces number of limitation. Regardless theses hindrance still the value of ICT is huge, it is believed that the project will reduce cost and cycle time to a reasonable standard and will improve efficiency as well.

**General Discussion from Observation, Documentary Review and Collective Summary**

The fact that ICT up-take can be beneficial to e-procurement is well justified by the respondents. Results from the survey show that gaining competitive advantage, reducing procurement costs and profitability are among the most important benefits that an e-procurement strategy would bring. The most probable explanation could be the increased competition among organizations of the like. Another perception from the respondents could be that e-procurement offers exciting new opportunities to widen their marketplace whilst saving substantial operational costs on ICT deployments. This perception has been identified in Tetteh and Burn (2001) study. Tetteh and Burn (2001) recommend SMEs can achieve global competitiveness without necessarily increasing physical infrastructures (significantly) of the company, but through the expansion of ‘virtual’ assets such as IT skill, expertise and e-business knowledge. 81% of the respondents to the study indicate that staff who are involved in the procurement process are IT literate. However, lack of ICT infrastructure has been the major obstacle for effective e-procurement among the respondents. This can be seen from less than 50% of the respondents having adequate ICT infrastructure for conducting e-procurement effectively. The decision on training current staffs rather than outsourcing and hiring IT specialists to gain IT skills was overwhelming. Perhaps this reflects the greater flexibility in the demand of in-house IT skills and endeavors to lower costs, which have come along with ICT infrastructure implementation, customization and operation. This is not surprising as more and more SMEs have greater use of computer in administration and finance (e.g. secretarial tasks and payroll) but have little investment in outsourcing IT specialists for innovative and advanced ICT infrastructures for core business. Findings from the questionnaire responses and subsequent telephone interviews
further confirmed that, the most common ICT applications are administrative tasks, company website, internal networking (sharing of computing infrastructures).

Respondents indicated that, most of the ICT applications were off-the-shelf systems. This indicates that ICT applications mainly for economic benefits at the preliminary stage of ICT investment. It is believed that small firms tend to focus on general applications (e.g. off-the shelf systems) to enhance internal communications and improve secretarial and managerial tasks whilst exploring ICT to fulfill the generic needs for a small organization. This trend is most obvious for the respondents with less than 50 employees. Another rising concern is the decision on ICT investment and implementation. Feedback from the respondents indicates that there is a prolific choice of ICT applications and solutions. New products and ICT standards are constantly emerging to replace the older version. The latest technologies have proved a good alternative for improving the existing products. However, to select and evaluate the most appropriate one could be a tedious task.

This is due to the cost for justifying such benefits often exceeds its true value and could be impractical for small firms. This is not surprising as Irani and Love (2002) and Love, et al (2000) have found IT investment tends to be a major challenge during its evaluation process. Overall, the findings show that SMEs are gaining benefits through the use of ICT that enable them to automate routine and repetitive works. Typical examples of these are tools for administrative tasks, documents and communications at the inter-organizational level, exchange of inter-organizational documents and business information. The findings advocate lack of commitment to invest in ICT uptake in the future to capture the potential offered by ICT among the respondents. Overall, the adoption and resulting gains from ICT uptake are dependent to the extent, and types of respondents.

This is due to the spread of ICT uptake from respondents (i.e. mediums sized construction firms) who are already engaged with ICT applications, to those small construction firms who are just commencing to use ICT. Successful transformation of business processes through ICT implementation has been achieved incrementally
by many large construction firms. Over recent years a significant number of small to medium sized retail and service firms have identified ICT uptake would help their organizations to gain benefits. In future, the late comers to ICT (i.e. particularly small construction firms) may find it hard to survive whilst competing in the same market.

5.7. Summary
The summary of discussion of the findings in chapter five is as follow; the chapter highlighted the discussion on various findings obtained from chapter four, it was noted that ICT faces implementation difficulties, among them are cost related to investment and the support from top management since they do not really understand the benefit that will be derived from the application of e-procurement, moreover the chapter went further to show that some factor like security issues and technological advancement still a problem, moreover it was identified that there lack professionals who can really work with the system, this is because the ICT in procurement was not taught at colleges and universities until recently, so the procurement proponents have come to realize and see ICT application when they are at work. Researcher conducted documentary review and observation in this research, and it was revealed in this chapter that power is the critical problem in attempt to implement ICT in Tanzania, there has been serious power cut off for a long time without clear solution, generally the study covered the discussion of findings.
CHAPTER SIX

CONCLUSION AND RECOMMENDATION

6.1 Introduction
The main objective of the study was to determine the prospects and challenges of using ICT in Tanzania, by the use of case study which are vivid one, MGIT, researcher were able to collect the respondents views on the prospects and challenges of using ICT in Tanzania, the study went further to identify some other related issues concerning relation of ICT implementation and its impact,

With reference to the critical analysis of the data obtained from the field through various approaches as pointed out earlier, interpretation of the results together with discussion of the findings obtained, presented in this chapter are the conclusion and recommendations i.e. the results obtained will form the basis for conclusion and recommendations.

6.2 Conclusions
As seen from the summary of empirical findings, researcher concluding by saying that Technology is here to stay, it comes to us with promising benefit as well as with limitations, ICT professionals have to select the best for their organization to utilize, the selection should fit the business need and should not deviate the from organizational view of business. From the study researcher derive number of conclusions on the basis of the study,

6.2.1 Conclusion on usage of ICT implementation
From the data collected and results presented in chapter four, researcher draw conclusion on state of ICT in procurement in organizations in Tanzania, all arguments comply with the fact that ICT in procurement does have impact in performance and thereby increasing speed, efficiency and profitability, therefore researcher generally conclude that ICT is very essential in taking procurement cadre to next successful stage
General Conclusion

Generally the state of ICT implementation is at highest level and its applicability is maximum, it was noted and concluded that majority of respondents at MGIT are aware of the ICT concept and its application though the difference or problem identified is number of suppliers are not able to install systems that will link with MGITs system due to the fact that it is too expensive and moreover researcher concluded that it’s true that the ICT implementation face number of challenges including system integration, lack of skilled personnel and technological advancement, power supply, these are among the factors that are at the heart of failure of ICT implementation.

6.2. Conclusion and Recommendations

It goes without saying that ICT is a very good practice if Companies organization were to achieve excellence in as far as interacting with different suppliers for feedback to create checks and a balance in their business strategy. ICT is a channel through which the Buyers interact with its suppliers. Improves public service delivery and processes, and builds external interactions. This creates a win-win relationship where the work of the government is made easier by providing a public service at the disposal of a citizen. Also, time is saved, corruption is reduced and hence transparency and accountability of different resources is facilitated.

This paper has looked at different ICT initiatives and implementation that have been employed to achieve appropriate ICT. The cases presented from different organisations (Tanzania’s) organizations employing different ICT strategies suggest that Tanzania may not be completely ready to fully implement or replicate the implementation of ICT in procurement. The paper outlines the different challenges that are faced in the ICT implementation in procurement in Tanzania.

In light of the above, the component of ICT implementation is encouraged and emphasized in the proposed organizational context. It is desired that there is a flow of information between the government organization and different stakeholders involved in
the development process. In order to achieve this, the following recommendations are in order:

(i) The government should create an enabling environment for the implementation of ICT in everyday lives of its stakeholders as this is will enable and influence efficiency in public organizations. ICT is the backbone of e-procurement therefore it’s inevitable for government and it must heavily emphasize /create suitable environment for ICT implementation and impact performance on procurement.

(ii) The government should play a leading role in developing the ICT infrastructure as this is a requirement for successful e-procurement implementation. This can be making sure that the nation’s internet backbone and the International Gateway are managed responsibly. Further, the government should encourage developing of fiber-optic network for efficient broadband communication, reducing the rates for internet access through ISPs, and subsidizing the prices for getting Personal Computers (Desktops and Laptops). This can be done indirectly by reducing import duty on internet accessories, computers and computer gadgetry.

(iii) The government should take full advantage of various initiatives taken by the international community to assist African governments in their bid towards developing ICT in Africa such as the Information Technology Center for Africa (ITCA); and the World Bank. These initiatives basically offer technical support and training procurement professionals to different African governments.

(iv) There should be a lot of awareness campaigns sensitizing the suppliers on the benefits of ICT application- procurement for them to fully adopt it and incorporate it as part of their culture.

(v) The development of ICT PROJECTS systems should be funded locally. Over-dependence on foreign (donor) support has its own repercussions.
(vi) Academicians should present sound business case for adoption, as well as inclusion of e-procurement new syllabi to the young professionals, PPRA should conduct campaign on the necessity of e-procurement and hence convince government so that adoption can be reached.

6.4. Areas for Further Study

This study is limited in that only to one ICT case has been presented. It is desired that in future, more cases will be analyzed and to the deepest detail. This will pave way for even testing of this model to ascertain its usefulness. Other future works for this study are comparing ICT initiatives with other cases from other countries in the EAC (East African Community) region. This will bring us to understand the major issues and challenges that are faced in this region in as far as ICT implementation is concerned and how we can overcome these. At the end of such a study, a general conceptual model for the entire region of East Africa can be designed. The usefulness of such a model would be to create checks and balances against the implementation of ICT in the EAC region and ascertain whether the EAC strategic framework for the development of procurement and ICT is working or not.
REFFERENCE


Appendix 1: Questionnaire

A study on challenges and prospects of using ICT

Dear respondents

The researcher questionnaire has been prepared in order to facilitate the collection of data for the research on a study on challenges and prospects of using ICT. The research is a partial fulfillment of the requirement for the award of Masters of Science in procurement and supply chain management MSc PSCM OF Mzumbe university Dar es Salaam Business school. Researcher thanks in advance for the time that you will spend to complete these questionnaires

Please note that, the information you will provide is intended to be used for research purpose and not otherwise, and be ensured that ALL information that you will provide, must be treated confidentially.

Digna Masika.
SECTION I: Demographic characteristics of the respondents

1. What is your gender?
   (i) Male  
   (ii) Female  

2. For how long you have been working at your organisation?
   (i) Below 2yrs.  
   (ii) Over 2yrs, but ≤5yrs  
   (iii) ≤10yrs, above 5yrs  
   (iv) Over 10yrs  

3. Which position do you hold in your organization?
   (i) Managerial position  
   (ii) B. Non managerial position  

4. What is the highest level of education having you attained?
   (i) University degree  
   (ii) Basic certificate  
   (iii) Ordinary diploma  
   (iv) Masters degree  
   (v) Secondary education
SECTION II: General awareness of ICT and procurement

1. Do you recognize the concept of application of ICT in procurement?
   (i) Yes
   (ii) No
   (iii) Don’t know

2. Do you apply ICT/find it applicable in daily procurement processes?
   (i) Yes
   (ii) No

3. In applying ICT to procure/to supply what are the challenges you encounter?
   (i) Level of applicability is minimal
   (ii) No enough Knowledge of using
   (iii) System integration is huge problem

4. Do you think that the application of ICT in procurement has impact on performance?
   (i) Influence
   (ii) B. Does not influence
   (iii) C. No opinion

5. If yes, what have you observed as critical impact in your daily operation?
   (i) Increase the speed of operations
   (ii) Minimization of cost

6. What are the major challenges that hinder effective application of ICT?
   (i) It require massive investment of fund
   (ii) There is no enough personnel
   (iii) C. Don’t know
SECTION III: Views of suppliers/user departments on the use of ICT in procurement.

7. Do you recognize the concept of application of ICT in procurement?
   (i) Yes
   (ii) No
   (iii) Don’t know

8. If yes, do you have that capacity and resource to invest on ICTs software and systems?
   (i) Yes
   (ii) No
   (iii) I don’t know

9. What are the perceived challenges in this ICT application in procurement?
   (i) ………………………………………………………………………………………………………
   (ii) ………………………………………………………………………………………………………
   (iii) ………………………………………………………………………………………………………

Thank you for your kind co-operation.