PROCUREMENT AND INFORMATION COMMUNICATION TECHNOLOGYIN RURAL AREAS THE CASE OF KIBAHA DISTRICT COUNCIL

PROCUREMENT AND INFORMATION COMMUNICATION TECHNOLOGYIN RURAL AREAS THE CASE OF KIBAHA DISTRICT COUNCIL

By

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A Dissertation Submitted to Mzumbe University Dar es Salaam Campus in Partial Fulfilment of the Requirement for the Award of Degree of Master of Science in Procurement and Supply Chain Management (MSc-PSCM) of Mzumbe University

2014

CERTIFICATION

We, the undersigned, certify that we have read and hereby recommend for acceptance by the Mzumbe University a dissertation entitled: *"Procurement and information communication technology"*, in partial/ fulfillment of the requirements for Award of the Master Degree of Science in Procurement and Supply Chain Management of Mzumbe University.

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I**, Norah Mkonyi** declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

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Date_____

ACKNOWLEDGEMENT

DEDICATION

To my parents W. Siyanga, M. Siyanga, P.A Mkonyi and my husband S.H.Mbesi who have been with me hand to hand in their mind throughout my studies. May Almighty God pay them abundantly!

LIST OF ABBREVIATIONS

e-PPs   -   Electronic Public Procurement system

GN   -   General Notice

ICT   -   Information Communication Technology

KDC   -   Kibaha District Council

PMU   -   Procurement Management Unit

PPA   -   Public Procurement Act

Reg.   -   Regulation

SERVQUAL -   Service Quality

TAM   -   Technology Acceptance Model

URT   -   United Republic of Tanzania

UTAUT   -   Unified Theory of Acceptance and Use of Technology

ABSTRACT

The purpose of this research was therefore to look at the challenges facing the application of Information and Communication Technology (ICT) in procurement process, in rural areas specifically Kibaha District Council. In order to come out with a clear conclusion the study had to identify current procurement practice and existing application of Information Communication Technology in procurement process, activities/areas in which ICT is currently applied, benefit of ICT application and challenges facing ICT application in Procurement Process.

In the study primary and secondary data were collected from fourty seven respondents including; Kibaha District Council Staff and their suppliers through questionnaires, interview and observation. The analysis was done qualitatively where summary of results was drawn in frequency and percentage tables, bar graphs and pie charts with the use Excel program.

The results of the study show that the rate of ICT application in procurement process in rural areas is low due to; inadequate knowledge of staff on the use of ICT tools, inadequate availability of ICT tools, high cost of maintaining the use of ICT tools and poor ICT policy. However, low rate of ICT adoption in procurement process, has resulted to late delivery of goods and services from suppliers, problems in keeping and tracing procurement documents and inaccuracy of procurement data.

According to this study results, to increase the existing rate of ICT application in procurement process, Kibaha District Council needs to provide trainings to staff, establish ICT policy relating to procurement proceedings, and include cost of ICT tools and installation in their budget.

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CHAPTER ONE

INTRODUCTION

1.1   Background

Kibaha District is one of the 6 districts of the Pwani Region, Tanzania. The district is bordered to the North by the Bagamoyo District, to the East by Dar-es-Salaam, to the South by the Kisarawe District and to the West by the Morogoro Region. According to the 2002 Tanzania National Census, the population of the Kibaha District was 132,045.

The Kibaha District is administratively divided into 9 wards: Kibaha, Kwala, Magindu, MailiMmoja, Mlandizi, Ruvu, Soga, Tumbi and Visiga. ('District of Tanzania', 2013)

The District mission is to be "A world-class, vibrant, socio-economic affordable and progressive council where people feel safe to live, to visit, enjoy their locality and access wealth", with a mission says, "To provide the highest quality council services in an efficient, courteous manner through planning and visionary leadership".

Kibaha District has its core values that guide behavior towards vision achievement. They are several; results orientated, costumer focused, commitment to personal and fiscal integrity honesty in all council actions, innovation in meeting the present and future needs of the council, respect for, and belief in, individual difference and the worth of every one, good governance and democracy, openness and Integrity, punctuality and hardworking, being respectful and sensitive to human needs and dignity, supporting and encouraging staff growth and development.('District of Tanzania', 2013)

On the other hand, KDC has been applying electronic procurement in its procurement activities in order to achieve above values as well as fulfilling its mission.

Today's procurement differs from traditional procurement since it involves handling of vast data and information that calls for computerization because manual operations are very slow and cumbersome; and information might not be available right on time. Due to that, many organizations have been investing in procurement electronically since nineties just to get a program that will deliver the right goods or services from the right source of a right quality at a right price and time. Generally, Information Communication Technology application is expected to increase efficiency and effectiveness in procurement proceedings ."…it can significantly simplify the way procurement is conducted, deliver better procurement outcomes and save costs by improving the efficiency of public expenditure,"(p.8) (Bausa et al, 2013).

The first computer in Tanzania, an ICT 1500, was installed in the Ministry of Finance in 1965. By 1974 there were seven computers in the country and the Ministry of Finance had already acquired a new computer, an ICL 1900. The introduction of computers was beset by problems in almost all installations. In 1965, Tanzania started application of Information Communication Technology (ICT) in business operations including procurement. This was done under the ministry of Finance, (www.unu.edu, p. 1).

When ICT is adopted in the procurement process, procuring entity is expected to experience cost reduction and efficiency, quick and easy access to critical data in real time, speedier communication with suppliers, more time can be spent on strategic purchasing, achieving of improved information accuracy, and integration of systems with other departments, (Leenders et al 2006).

However, researcher's experience shows that different procuring entities in Tanzania including District Councils, Government Agencies, other public and private Institutions have adopted ICT in the procurement process; especially the use of computers. But the rate of adoption is still questionable.

Like some other procuring entities in Tanzania, Kibaha District Council has adopted the use of ICT. The extent ICT application has been challenged in the whole process of procurement is an issue that still requires a study.

1.2 Statement of the Problem

National ICT Policy of the United Republic of Tanzania(URT, 2003) emphasizes on the application of ICT in various development sectors including Trade and Industry (URT, 2003, p.3). The government also recognizes e-Procurement through the Public Procurement Act 2011 and its regulations, "the e-PPs shall be implemented by all procuring entities in full or partially in parallel with the conventional manual procedures" ,(PPA, 2011, GN 446, Reg 342, p.251).

Several studies have revealed challenges on ICT adoption in procurement process as it is an imported innovation in most of the non-western developing countries (Heeks, 2002). Kulaya (2009) was among of the researchers who studied ICT in procurement. His study attempted to identify efforts dedicated for organizations to adopt easily the use of ICT .His findings indicated that the rate of adoption of ICT application in many organizations in Tanzania is going slow.

Venkatesh (2003) discussed the adoption in procurement through a Unified Theory of Acceptance and Use of Technology (UTAUT). The theory captured attention of most of researcher as it addressed the degree to which an individual perceives that organizational and technical infrastructure exists to support the use of ICT system.
With reference to United Nations report on East African countries rate of ICT application , Tanzania needs to find out the hindrances and finally plan for solutions(refer Appendix II, table 1.1) which shows that Tanzania performs low behind East African Countries in terms of web participation, infrastructure and human capital capacity indices, that is 0.2258, 0.024, and 0.631 respectively.

Despite the government's recognition of e-Procurement through the Public Procurement Act 2011 and its regulations, the United Nation's report above shows

there is a need for further research in Tanzania rural areas as most of studies to assess the level of ICT adoption were also conducted in other countries.

1.3   Objectives

1.3.1   General Objective

The main objective of this study is to identify challenges facing Information Communication Technology application in procurement process in Tanzania; buying though tender process.

1.3.2   Specific Objectives

The above study shapes the researcher on the following;

(i)   To find out the procurement-practices used in procurement process.

(ii)   To identify areas in which ICT is applied in procurement process.

(iii)   To find out benefits of ICT application in Procurement Process.

(iv)   To explore the challenges facing ICT application in Procurement Process.

1.4   Research Questions

1.4.1   General Question

The main question of this study is, "what are the challenges towards ICT application in procurement process in Tanzania?"

1.4.2   Specific Questions

(i)   What are the procurement-practices used in procurement process?

(ii)   Which areas ICT can be applied in procurement process?

(iii)   What are the benefits of ICT application in procurement process?

(iv)   Which challenges does ICT application face in procurement process?

1.5   Scope of the Study

The study has made a brief cover on traditional procurement and transition to electronic procurement. Vast coverage has been made on challenges facing electronic procurement being; ICT tools availability, staff and suppliers knowhow and facilities cost in relation to smooth application of ICT in procurement process at KDC.

1.6 Significance of the Study

This study will assist budget planners, decision makers and users to realize the magnitude of each electronic procurement challenge;

Budget planners will allocate enough fund depending on how serious the challenge is in hindering smooth application of ICT in procurement process.

Decision makers will make policies that prioritize major challenges so as to have smoother ICT application to Procurement process.

Users will invest more effort on major hindrances and have their blurred image in ICT application solved.

1.7 Rationale of the Study

This study is oriented to save time and money lost in application of ICT in procurement process by analyzing potential challenges to be worked-out in order to have virtual procurement world at KDC and related Tanzania District Councils.

1.8 Organization of the Study

This study is organized in two phases, first is the research proposal and second is the research report. The research proposal includes three chapter; Introduction, this includes; background, statement of the problem, research questions, objectives, scope of the study, significance, rationale or justification of the study and organization of the study. Literature review includes; theoretical part, empirical part and conceptual framework. Research methodology is the third chapter which includes; type of the study, study area, study population, units of Analysis, variables and their measurements, sample size and Sampling techniques, types and sources of data, data collection methods, validity issues, and data analysis methods. However References and Appendices are included.

The research report includes; Introduction or problem setting, Literature review and Research methodology, Presentation of findings, Discussion of the findings, Summary, conclusions and policy implications. References and Appendices will be included.

1.9   Limitation of the Study

The current study based on small sample size be taken from only one public office the Kibaha District Council's Office .Therefore the results be generalized to other government districts offices especially in the analytical terms. The researcher would have preferred to cover all government districts offices. However, time and resource constraints made the researcher cover only one area .However the researcher expects that the findings will be representative of what is happening at other government districts offices in Tanzania.

Online availability data of Kibaha District Council is insufficient. More time was required for data collection due to unavailability of online published reports like; budget and procurement plan. All findings had to be traced from the office physically, which is not convincing in the world of electronic procurement.

Kibaha District council has got no academic or in-office writings on electronic procurement. This was a great barrier in referencing the secondary findings of the problem under study. Procurement management unit could write the challenges of ICT in procurement and make a presentation to the management. This would help in solving the problem and support academic researchers on the same study.

CHAPTER TWO

LITERATURE REVIEW

2.1   Chapter Overview

This chapter explain about theoretical and empirical bases of the studies, conceptual framework and research model and hypotheses. It is important chapter as it shows how other scholars/authors says about matter on study.

2.2   Theoretical Study

This part has been discussed according to research questions

2.2.2   What are the Procurement-Practices Used in Procurement Process?

2.2.2.1 Traditional Procurement Practice

Traditionally, procurement was a paper-based process that often characterized by fragmented purchasing off-contract buying, and lack of control over expenditures. It was a manual procurement system that required private and public sector employees coordinate vast (infinity) amounts of paper works such as purchase orders, supplier acknowledgements, shipping and receiving documents, invoice and account reconciliation reports (Sanga, 2009).

Coile et al (2003) say that, traditional procurement process involves several steps as explained here under:

Identifying or re-evaluating Needs

Procurement transaction is usually initiated in response to either a new or the existing needs for the user (by individual or department within the buyer's firm). The buyer should then check if there is already some commitment by long term contract, in which case an order could be placed immediately. In the absence of such agreement, the buyer will ask if there is an existing source of supply whose performance is satisfactory, the usual practice is to re-order from the same source unless there is reason to review the current position.

Reasons to review the current status might include market price changes request, supplier failure to meet specification, unsatisfactory performance as demonstrated by vendor rating, internal pressure to save money, or that some time has elapsed since the position was reviewed.

Defining and Evaluation of User Requirements

Once the needs have been determined, its requirement should be presented in some type of measurable criteria.

Make or buy Decision

This is where the firm should ask themselves whether the product or services needed can be made or bought to satisfy the user's needs. Then the buyer should identify the type of purchase. This is necessary to satisfy the user's needs and will determine the amount of time required for the procurement processes and the complexity of the process.

Conducting a market analysis or research

Source of supply can operate in a purely competitive market or a monopolistic market. Knowing the type of market will help the procurement professional determine the number of suppliers in the market where the power or dependence balance lies and which method of buying might be effective negotiation, competitive bidding and so on.

Identifying all Possible Suppliers Available

This involves the identification of all possible suppliers that might be able to satisfy the user's requirements. It includes possible suppliers that the firm has not used previously. If the company is very small it may rely upon more common sources of such information such as the company's yellow page directory.

Pre-screen Possible Sources

Pre-screening reduces the pool of possible suppliers to those that can satisfy the user's requirements. It involves evaluating the suppliers' base. This reduces suppliers to those that can meet the user's negotiable requirements or desires. This can be done through the use of competitive bidding if the procurement items are fairly simple or standard and there is sufficient number of vendors, if not using engineer test or simulated end use situations.

Choosing Suitable Supplier

The choice of supplier also determines the relationship that will exist between the buyer and how the procedures of such relationships will be structured and implemented. This activity also determines how the relationship with the non-selected suppliers will be maintained.

Receiving Delivery of Products or Services and Post Purchase Performance Analysis

Once the services has been performed or the product delivered, the supplier's performance must be evaluated to determine whether it has truly satisfied the user's requirements.

Also, the traditional procurement cycle involve the following step as they are shown in the figure2.1 below.

Figure 2.1: Procurement Circle
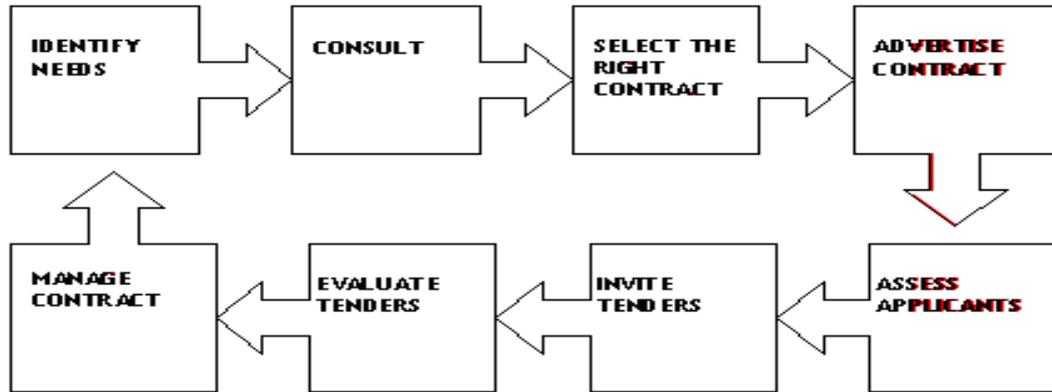
Source: www.cityoflondon.gov.uk, retrieved on 19/03/2014

However, the government of the United republic of Tanzania has recognized E-procurement through its 2013 procurement regulations, part xi: procedures for conducting electronic procurement(PPA, 2011 GN 446, p.247). In 2013 regulations from 2011 procurement act regulation 342 sub-regulation 1, enforces that, "the e-PPs shall be implemented by all procuring entities in full or partially in parallel with the conventional manual procedures."(PPA, 2011 GN 446, p.251).

2.1.3   Which areas ICT can be applied in Procurement Process?

Areas in which ICT is applied in procurement process, that is Electronic procurement practice in procurement process:

Many ICTs' especially electronic procurements are designed with flexibility and usability in mind of any user. It is easy to install, integrate and use, and very flexible especially in the sourcing options it provides to company buyers (www.epitech.com).

In www.epitech.com, (retrieved on 19/03/2014) three common different sourcing mechanisms are available. These are:

(i)   Request for Quotes or proposal

(ii)   Reverse Auction

(iii)   Negotiation

(i)   Request for Quotes (RFQ or RFP)

During procurement process, most people are familiar with the acronym RFP which stand for Request for Proposal. Normally RFPs are created by business entities and sent to suppliers in order to get a full quote on an item. Generally, RFP contains the price, as well as any other important details that the business might need to consider during the review process. The price stated in the RFP is often considered being the bid price for the project. Responses to RFPs are not considered formal bids therefore, can be changed if the same buyer later sends out a more formal RFP. The quotation form is filled and sent to the intended suppliers electronically showing all the information required by buyer. In return all suppliers who are interested replies on-line. This is done easily through electronic sourcing as buyer can send to many suppliers as possible. There is software which can be used by the buyers, linked to suppliers. Whenever there is a need the systems automatically send electronic mail alerts to the supplier that a quote for certain item is needed, so an immediately reply can be generated ("User acceptance of Computer Technology", 1989).

(ii)   The Reverse Auction

This is a procurement technique uses secured internet based technology. Auctions offer efficient, open and transparent negotiations as part of full procurement process. This means that the time needed to carry out competitive negotiation are minimized as it starts at or near the market price. Auction may either be structured around the lowest price or most economically tender, and value for money efficiency improvement in public sector contracts. The reverse auction process involves intensive work on behalf of the buyer and market maker to structure the bidding process and prepare suppliers for required qualifications (www.ausweb.scu.edu.au,).

(iii)   Electronic Procurement

E-procurement is the business-to-business purchases and sale of supplies and services through the internet as well as other information and networking systems, such as electronic data interchange (EDI) and Enterprise Resource Planning ('Electronic Data Interchange",2014).

The term e-procurement also refers to the use of new technologies to automate and optimize the purchasing function of the entity. It refers to a transaction between two companies that allows a buyer to consult the product catalogue of a seller online and to directly place orders according to a defined purchasing workflow. Things to e-procurement, the process of requesting estimates, issuing a purchase order and billing is handled electronically and in a centralized manner at the level of the two enterprises, which makes it possible to shorten the ordering and delivery times while simplifying the purchasing process. E-procurement therefore makes it possible to cut and improve handling of purchasing matter ("Electronic Procurement", 2014).

(iv)   E-tendering or Electronic tendering

This is a term used to refer to the use of the internet to request estimates and receive bids on the other.

(v)   E-Commerce or Electronic Commerce

This is a term used for buying and selling process that is supported by electronic means. It is the term for electronic business transactions between companies and their customers that are wholly or partially conducted over the internet or similar public or private computer networks. At times, internet marketing, such as electronic mail advertising for example is included in e-commerce (Kotler, 2012).

Also, Kotler (2012) provides different terms used in e-commerce. He stated them as follows:

(a)   Electronic Market Places

An electronic market place is an internet based trading platform where buyers and sellers can meet and conduct business. By bringing supply and demand together more efficiently, market transparency is increased and greater cost savings are reached. Business to business places can have different numbers of buyers and sellers. If the market place is ran buy a single buyer it is referred to as an e-procurement solution or an electronic purchasing system.

(b)   Electronic market

Electronic markets are sponsored information utilities that; describes the products and services offered by sellers and allows buyers to reach for information identify what they need or want, and place orders using credit card, the product is then delivered physically to the customer's premises or office or electronically.

(c)   On-line auction

This refers to virtual auctions. The seller sells the product to the person who offers the highest price on the internet. Online auctions open up new sales channels for new products and offer buyers favourable purchasing conditions.

(d)   Electronic Sourcing

It covers electronic methods of finding suppliers and establishing electronic contract process. They include electronic tendering which is the use of internet enabled applications and decision support tools that facilitate competitive and collaborative interactions among buyers and suppliers through the use of online negotiations and reverse auctions.

Despite the book sources above, the government of the United republic of Tanzania has made e-procurement more practical. The Public Procurement Act 2011 and its regulations of 2013, state the practical part of e-Procurement. Areas which Electronic procurement should be used are analysed and procedures are stated, (PPA, 2011GN 446 Reg 346-368)

Tender Preparation

Tenderers shall prepare their tender documents required to be uploaded within the time specified in the instructions to tenderers after signing of the same by an authorized representative of the tenderer. Tenderers shall submit their tender responses before the closing date and time, after which the e-PPs shall automatically reject any late submission, (PPA, 2011 GN 446 Reg 346).

E-advertisement for e- tendering and e-auction

Procuring entities shall prepare invitation for tenders using online template available from their secured dashboards. The invitation for tenders shall be published in the e-PPs portal in accordance with these Regulations, by proper authority from the procuring entity. The prepared invitation will contain detailed description of the goods, works or services, time-schedule and any other conditions and where applicable, the tendering documents shall be made available on the procurement opportunities section of the e-PPs portal and shall be available to all interested users. The date of tender notice published in the e-PPs portal shall be treated as the start date of tender preparation (PPA,2011 GN 446 Reg 347)

Uploading tender document for e-tendering

Tenderers shall submit their tenders online before the deadline specified in the invitation for tenders after signing of the same with the e-signature or digital signature, whichever is applicable, by their authorized representative. (PPA, 2011 GN 446 Reg 348).

Clarification and pre-tender meeting

Where it is specified in the tender notice, the e-PPs shall provide features for online pre-tender meetings on the specified date and time. A request for clarifications by tenderers and responses to queries shall be posted online before or during pre-tender meeting, or within the time prescribed in the tendering documents(PPA, 2011 GN 446 Reg 349).

Amendment to tender Documents

To the extent permissible under the Act and these Regulations, procuring entities may amend the tender documents at any time prior to the deadline for receipt of tenders. Procuring entities shall issue and publish an addendum in the relevant section of the e-PPs accessible to all prospective tenderers who received the tender document; and short messages or email will be used to alert tenderers of all such changes (PPA, 2011 GN 446 Reg 350).

E-submission

A tender submitted electronically shall be considered to be true and legal version, duly authorized and duly executed by the tenderer and intended to have binding legal effect. The tender shall bear e-signature or digital signatures for identity and authentication purposes and the identity of the tenderer may be verified with a follow-up due diligence process(PPA,2011 GN 446 Reg 351).

Online tender opening

The procuring entities receiving the tenders shall use the appropriate dashboard on the e-PPs perform all tender opening functions in e-PPs portal as prescribed in guidelines issued by the Authority. Tenderers may physically be present at the tender opening meeting, although option shall be made available in e-PPs portal for those who wish to participate online during the session, where the committee will post the tender opening records in the appropriate section of the e-PPs (PPA, 2011 GN 446 Reg 352).

Formation of Evaluation Committees

The procuring entities receiving the tenders shall create a tender evaluation committee on e-PPs portal and its members shall perform all functions of the Committee as prescribed in the Act and these Regulations. Procuring entities shall ensure that members of the committee are conversant with the online tools to enable them effectively and efficiently accomplish the evaluation process (PPA,2011 GN 446 Reg 353).

Use of e-PPs by Evaluation Committee

Access to the dashboard by the evaluation committee shall be only for the specified period of time as defined by procuring entities in e-PPs or its extension. The committee members shall fill and sign the online covenant forms individually before evaluation and joint certification after evaluation as provided online by the system and in accordance with the Act and these Regulations (PPA,2011 GN 446 Reg 354).

Approval, notification of award and contract signing

Final evaluation report shall be routed in e-PPs through system workflow to the appropriate approving authority stipulated in the Act and these Regulations and the approval shall be granted online using appropriate digital signature or e-signature.

A procuring entity shall issue award notification to a successful evaluated tenderer online through tenderer's dashboard and email or short messages alerts and the tenderers shall be required to acknowledge receipt through e-PPs(PPA,2011 GN 446 Reg 355).

Application of e- auction

E-reverse auction shall be used in the procurement of standard goods for which specifications can be determined with precision, where price or quantity is the only determinant and where there exist significant numbers of potential tenderers. E-forward auction shall be applied in the disposal by tender of goods whose specifications can be described precisely and whose salvage value have been established (PPA,2011 GN 446 Reg 356) .

System Preparation for e-auction

The auction shall be applied in the procurement or disposal of goods where; the auction scope and the evaluation criteria for selection and award of a contract is clearly established and advertised. The value of items to be procured or disposed of is high enough to make it commercially viable for a competitive supplier or buyer base, but not so high as to materially reduce competition, the procuring entity verifies that all operational conditions are met for starting the auction, including connecting all participants to ePPs and ensuring that conditions required for safeguarding anonymity are in place (PPA,2011 GN 446 Reg 357).

Bidding Instructions

The requirements for participating in e-auction shall include; (a) all conditions such as the event and timing of the auction, rules for participation, valid bid

increments for e-reverse auction or decrement for the case of e-forward auction; how to bid and whether the auction is divided into successive phases (PPA,2011 GN 446 Reg 358).

Advertising in e-auction

A procuring entity shall post notification of an e- auction on the appropriate section of the e-PPs portal. The notification shall include all the specification, terms and conditions for the proposed contract; and a sample contract shall be made available online with the notification. The notification period shall be measured from
the date of publication on the e-PPs portal (PPA,2011 GN 446 Reg 359).

Operation of e-auction

The procuring entity shall run the auction according to information specified in the invitation to the e-auction and the e-PPs shall collect electronically and without
human intervention, anonymous bids which shall be automatically ranked by the system. The e-PPs shall automatically and instantaneously inform bidders of new ranking(s) as they occur, together with price in such a way that bidders are able
to ascertain their ranking at any moment(PPA,2011 GN 446 Reg 360).

Correspondence, amendments, and clarifications

All pre-auction clarifications and amendments of the bidding documents, as well as any pre-auction meetings shall be posted simultaneously onto the appropriate section of e-PPs portal, and whenever possible these will also be emailed to potential tenderers that have previously shown an interest. Modifications to any of the procedures, operations, specifications or conditions by any operator shall be tracked and recorded for audit(PPA,2011 GN 446 Reg 361).

Access to e-auction process

Access shall be open, equal and unrestricted to all eligible tenderers who must have registered as tenderers in accordance with these Regulations. Where the suppliers or buyers are to be prequalified before the auction, the pre-qualification process shall be

conducted online in the system or offline in accordance with the Act, these Regulations and Guidelines issued by the Authority (PPA,2011 GN 446 Reg 362).

Contract award under e-auction

An e-auction award shall be based solely on ranking of prices; such that the contract is awarded at the lowest price to the corresponding qualified tenderer in case of purchase or highest price in the case of disposal. Contract awards from e-auctions shall immediately be published online in the appropriate section of e-PPs, together with the name of successful tenderer and the awarded price(PPA,2011 GN 446 Reg 363).

Contract progress monitoring and control

The procuring entities shall nominate individuals for managing contracts, who have the required knowledge, skills, and abilities to effectively carry out their responsibilities by using the dashboard provided in the e-PPs. The Authority shall prepare procedures on how contract shall be monitored and controlled online and all procuring entities shall enter all contract information, during and after the implementation of the contract into e-PPs for the purpose of records and reporting or assessing and determining any deviations from the contract terms and conditions (PPA,2011 GN 446 Reg 364).

Certification and payment processing

The procuring entity shall use standard forms generated from the e-PPs for issuing different types of certifications such as acceptance certificates, quality certificates, and other relevant documents. The procuring entity shall verify receipt of goods, performance of services or execution of works in accordance with the contract prior to authorizing payment of invoices online (PPA,2011 GN 446 Reg 365).

Dispute resolution

Dispute resolution in case such as information theft, misuse, backing, spamming, disclosure, misrepresentation shall be handled through the provisions made in the Act, and any other existing law, and the complaint shall be initiated online and

handled using procedures to be prescribed by the Authority. The Authority shall configure a workflow in the e-PPs to facilitate all communications relating to disputes for expedient and transparent resolution of any such matter arising out of the e-procurement carried out over the system (PPA,2011 GN 446 Reg 366).

Fees

The Authority shall charge a fee from its e-PPs users for the use of e-PPs and its different services, which include registration fee, annual fee and any other fee relating to transaction made in e-PPs (PPA,2011 GN 446 Reg 367).

Payment Arrangements

The e-PPs shall have features for e-payment using bank cards and the procedures for making such payment will be provided by the Authority through the system user manual, and should be in harmony with existing financial laws and regulations. Other conventional offline non-cash means of payment will also be accepted, provided that details of completed transaction are entered into the system with all necessary supporting documents as required by the e-PPs (PPA,2011 GN 446 Reg 368).

2.1.4 What are the Benefits of ICT Application in Procurement Process?

Leenders et al (2006) provide various benefits to the organisation;

Cost reduction and efficiency gains can be achieved by streamlining the purchasing processes and freeing up supply staff to do more value adding task. Some organisations have automated purchasing processes to reduce transaction costs by reducing the number of people touching the process and reducing the cycle time from need recognition to receipt of good or service required.

Quick and easy accessibility to critical data in real time is helpful for sound decision making, makes it easy to identify supply problems earlier, and provides information for negotiations with prospective suppliers.

The aim of the e-PPs is to enhance the efficiency and ensure transparency in public procurement through the implementation of a comprehensive e-PPs solution to be

used by some or all public bodies in the Country for carrying out e-procurement. The use of the e-PPs shall only be for lawful purposes that do not infringe the rights of or restrict or inhibit the use of the system by any third party (PPA,2011 GN 446 Reg 341).

Speedier communication with suppliers improves supply chain effectiveness and efficiency, especially when dealing with non-domestic suppliers. Faster turnaround times can lead to increased market share and less inventories.

From the Public Procurement Regulations communication is equitable which avoid tendering deviations. All pre-auction clarifications and amendments of the bidding documents, as well as any pre-auction meetings shall be posted simultaneously onto the appropriate section of e-PPs portal, and whenever possible these will also be emailed to potential tenderers that have previously shown an interest (PPA, 2011 GN 446 Reg 361).

More time can be spent on strategic purchasing initiatives and focusing on important suppliers and supply projects because less time is needed for administrative and tactical supply activities.

Improved information accuracy can be met by replacing manual systems with automation. The benefits can include lower inventories (example, safety stock), reduced stock-outs, lower follow-up costs, and improved customer satisfaction.

Integration of systems with other departments, suppliers, and customers can provide accurate information on a timely basis to help with decision making in the areas of production and material requirements planning.

Enterprise systems provide control over how and where the money is used. IBM uses and enterprise resource planning (ERP) system to feed information to its business database network, here all spend data are housed and assessable by users. IBM's online spending tools help to ensure compliance with supply policies, that is; contract compliance and a significant reduction of maverick spending,(Laudon, 2004)

Moreover, ICT increases efficiency of existing processes that are capable of transforming the business. It automate many steps in business process that were formerly performed manually, such as checking client's credit card, or generating an invoice and shipping order.

Laudon also adds that, ICT change the flow of information, making it possible for many more people to access and share information, replacing sequential steps with tasks that can be performed simultaneously in parallel and eliminating delays especially in decision making. "Access shall be open, equal and unrestricted to all eligible tenderers who must have registered as tenderers in accordance with these Regulations", (PPA, 2011 GN 446 Reg 362).

Also Heeks (2006) says the main role of ICT within procurement contribute to:
(i)   The automation of notification and bidding processes
(ii)   Creating reliable channel for suppliers in public acquisition auctions
(iii)   It is a vehicle for storage and dissemination of information on the purchase of public institutions, available to anybody with internet access.

On the other side, ICT gives employees greater control of their worth, providing employees with access to the information they need for their job allowing them to work more efficiently, effectively and faster. As a result people are productive and creative. Thereby contributing to a sense of advanced control over their jobs and to greater esteem (Parsons et al 1999)

The internationalisation of ICT applications affects businesses. The ability to transfer information seamlessly through shared electronic files and networked computers advances the efficiency of a business processes such as documentation, data processing, and other back-office functions. For instance, increasingly sophisticated ICT applications such as a customer resource management and electronic data interchange allow firms to store share and use the acquired knowledge. All this can reduce inefficiencies in the case of capital and labour and can lower operational and transactional costs among economic agents, thus advancing the productivity and profitability of firm (Clack et al 2004).

In addition, O'Brien and Marakas (2007) says that, ICT has brought new employments and eliminate monotonous or obvious tasks in the office that formally had to be performed by people,(P. 429-430). This is to say ICT has been progressively replacing manual work procedures with automated procedure, work flow and work processes. Electronic work flows have reduces paper and manual routine that accompany it. Improved workflows have enabled many corporations to cut costs significantly and improve customer services.

2.1.5   Which Challenges Does ICT Application face in Procurement Process?

On the other hand, physical observation shows that not all Procuring Entities enjoy benefits of ICT in procurement, This is due to existence of number of challenges in the field as identified by number of researchers.

Strauss et al (2005) has shown that we have been not enjoying electronic application in full. One of the exibit he named as: The most important benefit of electronic business to us has shown unconvincing percentages.

Table 2.1:   Benefits of Electronic Procurement

Benefit	Mentioning
Better quality customer relationship	61%
More business development opportunities	50%
Better brand visibility	50 %
Drive fat from supply chain	42%
Reduce time to market	33%
Increase customer quantity	25%

Source: Strauss et al (2005, P. 26)

Despite the mentioned benefits, it is not true that developing world like Tanzania enjoy all of it. By comparing with the table 2 above, we have been enjoying very little. This is why we need to investigate how deep the roots of existing challenges that we may properly invest in uprooting them.

(i)   Knowledge of Personnel Involved in Procurement Field

Bausa et al (2013) said that, inadequate computer skills among users involved was and still is something of a challenge for effective use a system .The inadequate skill in using ICT facilities and low knowledge on what ICT can do is one of the issues that affect the effective use of ICT in procurement. A number of non-legislative flanking measures are needed in order to support Member States in their transition to full e-Procurement in a single market. Any such flanking measures or other future intervention by the Commission should be enhanced by lessons learnt in the 'field' so that it can be relevant and overcome current barriers efficiently and effectively."(p.9).

Neef (2001), "It is estimated nearly 75% of established e-businesses will fall the next year"(p.129). Many other smaller organizations have fallen through the cracks even if they have not come far in their strategic use of internet. It appears that a lack of awareness remains about what the internets can actually do for organization. They are much focused on day to day struggles and as a result unable to invest the time and efforts to investigate how the internet can help them to achieve the mission better. They see the internet as something new, perhaps treating and overall as an additional obligation that will increase their workload rather than as a tool that can help them to improve the work they are already doing.

Technological knowhow is one of the challenges facing ICT application in Procurement. Human capital is necessary for any business, its role in a startup business is especially critical because for a time it is the only resource available, (Rayport and Jaworsk, 2004 P. 374)

The inadequate skill in using ICT facilities and low knowledge on what ICT can do is one of the issues that affect the effective use of ICT in procurement process. For instance, inadequate computer skills among public sectors employees involved was and still is something of a challenge for effective use a system (Heeks, 2006).

Also Hishigsuren (2007) says a final but equally important factor is education and awareness rising about ICT among potential clients, but this step is often not taken seriously. Even when the right infrastructure and regulations are in place, if clients are still uncomfortable of using technology, then its not going to go anywhere.

In addition, many ICT projects face the challenge of sharing information with people who have little experience of the technology low levels of technological knowhow, little time or money, limited specialized knowledge or the necessary language requirements to use the technology all contribute to making ICT project seems complicated and difficult to use (Grimshaw 2007).

Mlinga (2008) also says that, unfortunately we cannot reach the desired goal "value for money" in our procurement reforms, if procuring entities and the general public will not take interest in using simple ICT facilities like the internet.

Likewise, Eigen (2007) says that, many other smaller organisations have fallen through the cracks even if they have not come far in their strategic use of internet. It appears that a low awareness remains about what the internet can actually do for organisation. They are much focused on day to day struggles and as a result unable to invest the time and efforts to investigate how the internet can help them to achieve the mission at a good level. They see the internet as something new, perhaps treating and overall as an additional obligation that will increase their workload rather than as a tool that can help them to improve the work that they are already doing.

(ii)   Cost   for   Purchase   of   Information   Communication   Technology Equipment

E- Procurement is supposed to be costly in its way to operation since new models must be applied from existing ones. …e- business will always have its own model, concept and practices (Strauss et al, 2005, P.27).

This has led to training costs, that give rise to users knowledge on this technology sometime being questionable.

From change perspective, ICT is a dynamic technology, Turban et al(2000), addressed electronic application being an evolving and changing discipline that people are looking for a stable area before they enter into it(P.17). This comes to cost arena where soft wares are sold and replaced now and then that stability is questionable. Example: Window versions; 1997,2000,2003, 2007 and 2010. Though most current speak of more efficiency.

On the other hand, O'Brien and Marakas,(2007,) continues, ICT application seems to bear cost in its adoption due to its inflexibility, elimination of human relationship, dehumanize and depersonalise tasks. There are also health issues of job stress, eyestrain, radiation exposure, damage of neck and arm muscles,(P. 431), these are challenges but they come after adoption apart from what we want to investigate that hinder adoption. All in all ICT has vast number of advantages than disadvantages, ICT reduces operating and inventory costs, internet technology can facilitate management of the rest of the business like publishing employees policies, reviewing account balances and production plan, scheduling plant repair and maintenance, design documents and coordinating task force and teams. This leads to e-business, which is defined as the use of internet and other digital technologies for organisational communication coordination and management of the business.
Sometimes the ICT is not used as it is intended in the office, instead of providing supporting to the main function it has been used to perform other functions.

Williams et al (2005) argues that, computer may be costing companies of the United State of America (USA) tens of billions of dollars a year in downtime, maintenance and training costs, useless game playing and information overload. Employees look busy, as they stair in their screen with brows crinkled. But, sometimes they are just hard at work playing quake or browsing online malls or looking at their investments or pornographic sites. Indeed, one study found that recreational web surfing accounts for nearly one third of the office workers time online.

(iii) Information Communication Technology(ICT) tools or infrastructure availability

Rabaiah (2010):…"these technical components are crucial for building basic infrastructure" (p. 101). Firms need to build infrastructure that withstand huge increases in peak loads and routines assaults from hackers and viruses while conserving electrical power because customers and employees expectation for services are increasing, firms need to increase their services level to meet customers' demands the trend in hardware and software platforms we now describe address some or all these challenges.

On the other hand**,** ICT application becomes effective if proper infrastructures are available. Thus, improper infrastructure has been among other the obstacles for effective use of ICT in procurement, "The low level of technical sophistication among many suppliers is one issue, compounded by general lack of system compatibility within buyers own organization."(Neef, 2001, P.132).

ICT application becomes effective if proper infrastructures are in position. Thus, improper infrastructure has been among other the obstacles for effective use of ICT in procurement process (Hishigsuren, 2007).

ICT Application tools Availability

Leender (2006) says, it is not easy task, however, to make decision which of the many tools will best serve the organisation's purposes, especially when technology is changing rapidly. He suggests some of important tools for adaptation of ICT such software, fax machines, fax/modem, e-mail, and voice mail. He also comments on these tools as follows:

Software Tool

To operate the computer, two kinds of software are needed. The first is the system software, a group of programs provided by the computer manufacturer that runs the computer-starts it and makes the components work effectively. They do things such as copy information from one storage disk to another and cause the printer to work. The system software currently is very enough for the tasks at hand.

Second is the application software, which are the programs that manipulate data for a specific purpose, like maintaining the open order file or taking supplier performance statistics and formatting them into a supplier performance analysis and report. There are a number of off-the-shelf procurement software packages available. This software is constantly changing and improving, and the published guide to current programs appears frequently. These software programs may be designed for the exclusive use of supply, or they may be a module in an enterprise resource planning (ERP) system designed to link together all of an entity's business processes.

(i)   Facsimile form of transmissions

(ii)   Fax or modem

(iii)   Electronic mail

(iv)   Voice mails

(v)   Bar codes

On the other hand, legal factors like privacy, digital property, expression and fraud are also challenges facing the field of electronic procurement, (Strauss et al, 2005, P. 28)

(iv)   Rate of ICT Application by Suppliers

By considering suppliers as part of procuring entity's procurement process then, we cannot go virtual while leaving suppliers behind. All partners in procurement must make same steps to have Information communication technology effectiveness in procurement process.

The 2011 Public Procurement Act insist on procurement partners to be registered in electronic procurement system. A prospective users shall register in the e-PPs under an appropriate user category in order to have appropriate access points and to get access to working dashboards with authorized features of the e-PPs. The user categories acceptable by the system are procuring entities, prospective tenderers, systems administrators, auditors, development partners, banks and financial institutions, civil society organizations and any group as approved by the Authority (PPA, 2011 GN 446 Reg 345).

Leenders et al (2001), many ICT projects face the challenge of sharing information with people who have little experience of the technology low levels of literacy, little time or money, limited specialized knowledge or the necessary language requirements to use the technology all contribute to making ICT projects seem complicated and difficult to use . "E-procurement need industry wide informational database."(p. 144).

In addition, internet technology is then conceived as enabling tool for effective electronic procurement through availability of real time information. Information transfer via internet facilities more interactive partnership in multi directions as opposed to the traditionally linear movement of information within the supply chain (Boyson et al 2003).

2.2   Empirical Study

2.2.1   Overseas Studies

E-procurement which involves ICT in the developed countries is used and is very popular. According to one recent survey shown in the www.capsresearch.org, cited on 19/03/2014 shows that twenty three per cent of 360 companies bought products or services from online auction in the last three months of 2001, compared with 17 per cent in third quarter.

Sony which has 2500 suppliers of components and materials has cut the number by half in a "life-changing" effort to streamline its challenging procurement network and has cut costs by about 500 billion yen after starting to apply e-commerce. The move by the entertainment and electronics group marks another shift in the Japanese business environment, which over the past six months has undergone more rapid changes than at any other time in the past 20 years. Corporate Japan has responded more quickly and ferociously than expected to the economic crisis- a dramatic fall in consumer spending that has hit Japan hardest of all the leading economies (www.business.timesonline.co.uk,).

Strauss et al (2005) had study made in India showing challenges facing ICT application. India being not far from Tanzania in development level, we can study

the related problems in ICT field."…significant barriers limit the growth of future adoption and electronic business."(P. 518)

On the other hand, Nasscom and Boston Consulting Group outlined several barriers to ICT , saying that: Personal computers and other devices to access the net for individual are less than 1%, telephone line penetration is limited to less than 3% of the population, poor telecom and communication infrastructure for reliable connectivity, internet connectivity is very slow and access costs are still very high, legal and regulatory barriers, safeguard to protect privacy of personal and business data not in place as well as low penetration credit cards(strauss et al, 2005 P. 518) Kopezak et al (2003), states that, the synchronization in a value system require a sophisticated information system to foster real time information processing, sharing coordination and decision making by the entire supply chain system. This study shows the need of ICT to sophisticate the information system in the procurement process since procurement is within the supply chain.

In 2003, the Government of Kenya (GoK) began to implement reforms to address inefficiency in the use of public resources and weak institutions of governance. Reforms included also the Public Procurement and Disposal Act 2005. This was believed it would make the public procurement process more transparent, ensure accountability, and reduce wastage of public resources. A 2005 Independent Procurement Review, conducted jointly by the GoK and the European Union, identified several critical problems with Kenya's procurement system. The review found weak oversight institutions, a lack of transparency, poor linkages between procurements and expenditures, delays and inefficiencies, and poor management of records. The GoK sought to improve public procurement systems by enacting the Public Procurement and Disposal Act and creating the Public Procurement Oversight Authority (PPOA). Regulations implementing the Act were gazetted by the GoK on January 1, 2007(Kenya online.)

According to the Director of Rwanda Public Procurement Authority, Mr.Seminega Augustusa, the challenges of capacity in public procurement process: lack of manpower of qualified procurement officers; lack of training and the lack of institutions to train the available procurement officers. Another challenge is turnover which is characterized by mobility of labour. Once an officer has acquired experience and the technical knowhow in procurement, it becomes hard to get a replacement when they leave, given that recruitment is expensive and getting the person with the required qualifications in Rwanda may not be easy.(" Implementation reform", 2014)

2.2.2 Local Studies

Mapunda (2005) in the study "effectiveness of Public Procurement in Adherence to Good Governance Principles" concluded that, training and re – training programme of PMU staff be reviewed from time to time to expose them to new modern technologies, PMU staff should also adhere to the law of the country.

Also, Tesha (2006) argues that "Now days, purchasing and supplies has flourished in terms of skills, techniques and its end products through an enabling factor which is ICT. He added that, a study has revealed that ICT is not the barrier at all to the procurement and supplies practitioner rather it simplifies work so as to increase efficiency and accuracy; not only specialists need to spend many hours in planning and improving the system and the software involved in supply chain management, but the attitude of those who are to use the system need to be carefully studied.

Mlole (2003) in his article titled "Inventory management and control problem in Tanzania" showed that computers are needed to systematize the function and apply sophisticated application packages and tools. Argues that, most organizations have acquired personal computers but very small portion of computer are used to the research works, financial and materials management operations at office bases. Likewise, the agency in the material management field in most organization of Tanzania is that of having out-dated record and comments, therefore there are almost effective and efficient application of computer in operations is obtained if the organisation in question has had a good manual recording system.

Moreover, Sanga (2009) in the study on 'Assessment of benefit of electronic procurement in government departments", a case of MSD in Tanzania argues that, electronic procurement increase efficiencies, reduce wastes and save money. He recommended that, special steps must be taken to effectively implement the system and avoid the types of problems that can hinder the successful adoption of electric procurement system.

Despite the above literature, Tanzania specifically faces the same problem of literacy and facilities or infrastructure. We can clearly depict this from, Ridhiwani (2009) in the study on "Impact of ICT in managing inventories through supply chain in business organizations" a case of Bytrade Tanzania LTD reveals that, data related to inventories are not entered in time in the system of information from warehousing department with other departments. Also, data entered are not accurate due to late recording and little computer knowledge of the personnel in the warehousing offices and also, no direct entering of inventories warehousing data which was supposed to be done by the warehousing officer. He also concluded that ICT needs accurate data transfer from the start to the end without any delay on the routine operations. I t is of importance to this study as far as procurement process associate with inventory management information.("Information Communication Technology", 2014).

2.3   Conceptual Framework and Research Model

The purpose is to gain and present a detailed theoretical understanding of ICT adoption in procurement practices. This understanding is crucial for informing us about methods to adopt, theoretical and practical limitations, and the required contributions in future stages and operations.

From above "statement of the problem" mentioned theories are hereby discussed; the theory of reasoned action (Ajzen&Fishbein, 1975), the theory of planned behavior (Ajzen, 1985), diffusion of innovations (Rogers, 1995) and technology acceptance model (Davis, 1989). Gilbert and Balestrine (2004) identify three approaches with sound theoretical and empirical bases, that is Diffusion of Innovation (DOI) by

Rogers (1995), the Technology Acceptance Model (TAM) by Davis (1989) and the application of existing frameworks to technology (example, Parasuraman, 1985). In 2003, Venkatesh, et al proposed another model, the Unified Theory of Acceptance and Use of Technology (that is: UTAUT).

In DOI, adoption is the acceptance of innovation taking place in five steps, which are; knowledge, persuasion, decision, implementation and confirmation (Rogers, 2003). Adopters can be categorized as innovators (2.5%), early adopters (13.5%), early majority (34%), late majority (34%) and laggards (16%). Social networks, such as media and interpersonal Theories on ICT adoption 35 contacts, provide information and influence adoption opinion and decision over time. DOI suggests that perceived characteristics of an innovation such as relative advantage, compatibility, complexity, triability and observability, determine the adoption or rejection of innovation.

TAM is a popular model in adoption research (Bagozzi, 2007). TAM suggests that technology acceptance is determined by perceived usefulness and perceived ease of use of that innovation. Also, perceived ease of use influences perceived usefulness. Perceived usefulness and perceived ease of use are both influenced by external variables such as system characteristics, organizational influences, and the nature of development stages. Davis, Bagozi and Warshaw (1989) dropped attitude towards use in their TAM model. Davis (1989) posits that perceived usefulness refers to the degree to which a person believes that using a particular system would
help to perform his job better, while perceived ease of use refers to the degree to which a person believes that using a particular system would be free of effort.

UTAUT (Venkatesh, et al., 2003) is another theory used. It was developed as an attempt to unify the constructs of the prominent IT acceptance models, including TAM. UTAUT conveys four key constructs that is performance expectancy, effort expectancy, social influences and facilitating conditions (Venkatesh, et al., 2003). Performance expectancy relates to the degree to which an individual perceives that using a new innovation can facilitate improving his performance. Effort expectancy

measures the degree to which an individual perceives that innovation will be easy to use. These two theories are similar to those from TAM. Social influence refers to the degree to which an individual perceives that an important person around him feels that he should use the innovation.

Finally, facilitating conditions measure the degree to which an individual perceives that organizational and technical infrastructures exist to support the use of the system. Venkantesh et al. (2003) suggest that adoption will occur when user perceives that performance expectancy; social influence and facilitating conditions are high. Contrarily, a high degree of effort needed to use an innovation will not favour adoption to a higher rate. Other researchers (example: Al-Qeisi, 2009; Li & Kishore, 2006) have tried to extend the Enhancing Adoption of ICT Initiatives in Tanzania, because the significance of the UTAUT factors may vary in different contexts.

This makes it necessary to identify contextual interpretation and implication. While DOI, TAM, and UTAUT predict adoption from a pre-consumption perspective, scholars have applied existing post consumption models to study the process of technology adoption (Gilbert & Balestrine, 2004). In this perspective, scholars (example: Carter & Bellanger, 2005; Parasuraman et al., 1991; Townsend, 2000) focus on the domestication potentials of new innovation (Colesca & Liliana, 2009). In their view, innovation that allow users to make them their own will achieve higher acceptance in adoption. SERVQUAL (Parasuraman et al., 1991) is a popular theory in this category. SERVQUAL emphasizes that quality is an important aspect in determining the success of information system. Adoption quality is a function of the user evaluation of tangibility, reliability, responsiveness, assurance and empathy.

Although the theories differ in their specific constructs, they highlight the importance of adoption in the success of information communication systems. They also show that successful adoption of an information system is a function of dealing with multiple issues. Example, while the theories agree upon the importance of ease of use, they also recognize the role of aspects such as responsiveness and assurance.

Other theories recognize other aspects such as culture and human issues (Carter & Weerakkody, 2008; Kovačić, 2005) to play a role in information communication system adoption. This implies that adoption requires a consideration of multidimensional aspects, or else little will be achieved by information system deployment and so lead to failure.

And the expected outcome of effective adoption of ICT in procurement process is efficiency and effectiveness in procurement proceedings. These variables can be mapped as shown in table 2.2;

Table 2.2: **Variables involved in ICT application in procurement process**

Independent variables	Dependent variable	Outcome
Knowledge of personnel	Effective application of ICT in procurement process	Effective and efficient procurement proceedings
Rate of ICT application by suppliers		
ICT tools/infrastructure availability		
Cost for purchase of ICT equipments.		

CHAPTER THREE

RESEARCH METHODOLOGY

3.1   Introduction

This chapter indicates the systematic approach through which this research has been undertaken. It consists of the type of the study, study area, study population, units of analysis, variables and their measurements, sample size and sampling techniques, types and sources of data, data collection methods, validity issues and data analysis methods.

3.2   Type of the Study

The researcher will use exploratory case study design, where by it involved in-depth contextual analysis of similar situations in the KDC, where the nature and definitions of the problem happen to be the same as experienced in the current situation.

The motive for adopting a case study was due to the following advantages;

(i)   It is flexible in respect to data collection methods.

(ii)   It is an exhaustive method which will enable the researcher to study deeply and thoroughly different aspects of the phenomenon.

The demerits of this method are;

(i)   It consumes a lot of time and required lot of financial cost.

(ii)   It is suitable for a limited sphere, it is not possible to use in a big society.

(iii)   The danger of false generalization can probably be experienced.

3.3   The Study Area

The study was carried out at the Kibaha District Council-Coast region which was established in 1972 in Tanzania mainland. The region has 33,539 kilometre square which is 3.8 percent of the whole Tanzania mainland area. 32,407 kilometre square equivalent to 96.6 percent is economic land and 1,132equivalent to 3.4 percent is covered by water. The region is located at the Eastern part of Tanzania mainland.

Coming to administration, the region has six districts which are; Bagamoyo, Kibaha, Kisarawe, Mafia, Mkuranga and Rufiji with also six district council. The most amazing for Kibaha is that, it is also a town council above all districts.

By making reference to appendix II, the map of Pwani region shows better of the Kibaha district council.

3.4   Study Population
The study took all Tanzania district councils, where the Mainland has 159   and the Isles has 10 district councils. These make total of 169   district councils in Tanzania.("District of Tanzania", 2013)

Units of Analysis
For examining this study, a total of 60 people who are directly involved in the procurement process were involved. Table 3.1 below shows where these people belong.

Table 3.1:   Units of Analysis

S/N	Organs /Departments	Expected respondents In numeric form
1	PMU	15
2	User Departments	26
3	Suppliers	9
	TOTAL	**50**

Source: Constructed by Researcher

3.5   Variables and their Measurements
Variables under this research have been measured through study of the factors affecting adoption of electronic procurement in Tanzania situation at Kibaha District Council. The researcher collected information from participants in the procurement process.

3.6   Sample Size and Sampling Techniques

3.6.1   Sample Size

There were 50 respondents involved in this study as to minimize the number of study area to match the type of the study.

Kibaha District Council

The representative population in this study involves KDC as one among 169 District Councils in Tanzania with no very high or with very low advancement in ICT application in procurement with relevant service providers in form of suppliers. The researcher purposely selects the Kibaha district council due to accessibility too.

Sub-sample: Expected respondents

15 members of the procurement management unit, 9suppliers and 26 user departments were given questionnaires. Similarly heads of the user departments were given questionnaires as well as interviewed basing on the questionnaires.

3.6.2   Sampling Techniques

The sampling technique was purposive sampling;

Kibaha District Council

Taking into consideration the type of the study, the judgment/purposive sampling technique was used to select KDC. Exploratory needs deep study of which KDC location favours the researcher for the study. Also limit of time and budget, KDC enabled the researcher to complete study in time and obtain required data.

Sub-sample: Expected respondents

Since the study was based on the challenges affecting adoption of electronic procurement, under the study the researcher needed special participants, so the researcher used purposive sampling for respondents in order to get the expected information from potential respondents especially for those who are directly or

indirectly involved in the procurement processes. Thus, procurement management unit, suppliers and user departments, were used.

3.7 Types and Sources of Data

Both primary and secondary data were collected in this study. Further details of each group of data collected are in the proceeding sub-sections under this section.

3.7.1 Primary Data

This includes data from the original source that has not been processed. These will be originating from observations, questionnaires and interviews.

3.7.2 Secondary Data

This includes processed data that are recorded from different sources such as financial reports, journals, magazines, internet web, and various articles.

3.8 Data Collection Methods

3.8.1 Interviews

An interview was used when a researcher needed clarification from the people who were purposively selected in order to get answer of the research questions. Some respondents especially those at senior posts seem to be busy and were bothered by filling in the questionnaires. Therefore, information was obtained by interview basing on the normal questionnaires filled by other respondents.

3.8.2 Observation

The researcher employed observation by observing procurement activities so as to get firsthand information economic, political, and societal and variables in order to analyze the factors affecting the performance of procurement hence achieving value for money procurement of every shilling spent.

3.8.3 Questionnaires

Structured and unstructured questionnaires were administered to different respondents group such as PMU members, suppliers and user departments, in order to get information regarding the factors affecting adoption of electronic procurement.

3.8.4 Documentation

The content of written materials such as records, documents letters and newspapers served a basis of influences. The analysis was made objectively and systematically. The objectivity Refer to the making analysis on the basis of explicit rules which will enable the researcher to obtain the same results from related documents. Systematic analysis refer to the making of inclusion or exclusion of contents according to consistently applied criteria of selection only material relevant to the researcher's topic under the study. The combination of using these tools cleared doubt about the certainty or truth, as what has been said is what has been taking place within the council.

3.9 Validity

Validity is the extent to which differences found with measuring instruments reflects true differences among those being tested, (Kothari C.K 1990). Under this study content validity was used because is the extent to which a measuring instrument provides adequate coverage of the topic under study.

3.10 Data Analysis Methods

In this study, qualitative and quantitative approaches were used. The qualitative approach entails through comparing data and aggregates them into a theme. The quantitative approach involves manipulation of numbers, percentages, and use of table of frequencies from Excel program.

CHAPTER FOUR

PRESENTATION OF FINDINGS

4.1   Introduction

This chapter is a presentation, and analysis of facts obtained in the field study. The presentation and analysis of such facts are done basing on the research questions as provided here under.

4.2   What are the Procurement-Practices Used in Procurement Process?

Procurement practices used in procurement process in Kibaha Distrrict council.

In investigating problems associating with existing rate of ICT application in Kibaha District Council, the researcher started by investigating whether procurement process is done frequently through ICT tools or manually. This investigation amounted to investigating ways used in communication among PMU, user departments' staff, and suppliers. Results show that communication between PMU and user department's staff is done through papers as pointed out by twenty seven respondents; fifteen respondents said communication is done through telephone and five respondents said communication is done through internet. The summary of these responses is show in table 4.1.

Table 4.1:   Ways of Communication between PMU and User Departments' Staff in Kibaha District Council

Ways for communication	Responses	
	Frequencies	**Percentage of frequencies**
Papers (Manual)	27	57.7
Telephone	15	30.8
Internet	5	11.5
Total	**47**	**100**

Source: Study findings at Kibaha District Council, 2014.

Results in table 4.1 show that communication between PMU and user departments' staff is frequently done manually, that is through papers. However, it was found that ways to be used to communicate depend on the urgency of the needs.

Also, investigation shows that communication between Kibaha district council PMU and Suppliers is through internets, postal letters, telephone and fax. Seventeen respondents said PMU and Suppliers communicate through internet; fifteen respondents said PMU and Suppliers communicate through telephone; nine respondents said PMU and suppliers communicate through fax; and six respondents said PMU and Suppliers communicate through postal letters. The summary of these responses are as shown in table 4.2;

Table 4.2:   Ways of Communication between PMU and Suppliers in Kibaha District Council.

Ways for communication	Responses	
	Frequencies	**Percentage of frequencies**
Internet	17	36.4
Telephone	15	31.8
Fax	9	18.2
Postal letters	6	13.6
Total	**47**	**100**

Source: Research findings at Kibaha District Council, 2014.

From table 4.2, communication between PMU and Suppliers in Kibaha District Council seems to be done more frequently through Internet and Telephone. Additionally, it way reported that Kibaha District Council procures some items from international suppliers; and main ways used to communicate with international suppliers are internet and fax.

Also table 4.1 shows that papers are highly used in communication between PMU and user department staffs as the frequency distribution is higher in the use of paper than that of communication between PMU and suppliers. Also this table shows that there was no respondent experienced the use of fax in communication between PMU and user department staffs. Likewise the responses presented in table 4.2 show that internet is highly used in communication between PMU and suppliers than in communication between PMU and user department staffs.

With the use of investigation results presented in table 4.1 and table 4.2 on the ways of communication among PMU, user departments' staff and suppliers, the rate of ICT application in procurement process may be viewed ineffective at very primary level. This is justified by the fact that communication through papers is highly used especially between PMU and user department staffs. However, communication between user departments' staff and PMU was observed to be through papers because ICT tools such as computers with internet connection are not available. Furthermore, investigation on practices associated with the existing rate of ICT application in procurement activities came out as summarized in table 4.3.

Table 4.3:   Practices Associated with the Existing rate of ICT Application in Procurement process in Kibaha District Council.

Problems of existing rate of ICT application	Responses	
	Frequencies	**Percentage**
Late delivery of requirements	9	18.5
Time consuming in reviewing documents	12	25.9
Problems in keeping documents	3	7.4
Results into inaccuracy of data	5	11.1
Problems in tracing documents	14	29.6
Congestion of documents	2	3.7
Problems in producing reports	2	3.7
Total	**47**	**100**

Source: Research findings in Kibaha District Council, 2014.

From table 4.3, 9 (18.5%) respondents said manual procurement activities results into late delivery of requirements; 12(25.9%)respondents said manual procurement activities consume more time in reviewing documents; 3(7.4%) respondents said manual procurement activities results into problems in keeping record such as grouping and condensing of records together become difficult; 5(11.1%) respondents said manual procurement activities results into in accuracy of data; 14(29.6%) respondents said manual procurement activities makes difficult in tracing of documents when needed; 2(3.7%) respondent said manual procurement activities results into congestion of documents in the office; 2(3.7%) respondents said manual procurement activities results into problems in producing procurement reports such as monthly and annual reports. These results show that the main problems of manual procurement activities are in tracking documents, time taken for documents review, and time taken in delivering the requirements considering are the ones with higher frequencies than others.

On the other hand, because ICT application in procurement process has been seen to have positive outcomes, and there are problems of not applying ICT effectively in procurement process, Kibaha District Council must have been anxious to apply ICT in procurement process effectively. Apart from others, one of top management staff during the interview reported that "we wish to use modern technologies in procurement proceedings as possible". Challenges which make Kibaha District Council not applying ICT effectively in procurement process are shown in the following sections.

4.2 Which areas ICT Can be Applied In Procurement Process?

Activities/ Areas in which ICT is applied in procurement process at Kibaha District Council

Study involved an investigation on PMU activities that use ICT in procurement process. Under this investigation, study looked first if the PMU has ICT tools to use in procurement process. The main tools considered to be of more useful in ICT were computers, telephones, fax machines and Internet connections. The researcher visited some of departments' offices to see tools used for communication and other

procurement process. The observation results showed that PMU had a computer, and other few user departments such as planning, agriculture and accounting. The internet and telephone, connection and fax machines were in the District Executive Director office as well as agriculture department only. However, District Executive director assistant said that, when their internet or fax machines are not working properly they get services from neighbour stationeries dealer. It was further reported that the departments' staff normally communicate through their personal mobile phones when it is very urgent in such away they cannot go to District Executive Director Office.

From that point, the study went on investigating procurement activities which involve ICT application in Kibaha District Council. To get responses on that the questions were posed in the questionnaires to PMU Staff requiring them to mark procurement activities done through computers performed in Kibaha District Council. It was found that, Computers are used in order processing, keeping records, and finding suppliers, preparing procurement reports and procurement plan for the District council. The summary of frequencies of responses on each activity is in the below table.

Table 4.4: **Procurement Activities Which Involve ICT Application**

Activities	Frequencies	Percentage of frequencies
Order processing	11	23
Ordering items	7	14
Keeping records	13	27
Finding suppliers	8	18
Preparation of procurement reports	4	9
Preparation of procurement plan	4	9
Total	**47**	**100**

Source: Findings from the field, 2014.

As shown in table 4.4; 11 (23%) respondents said ICT tools are used in order processing activities such preparation of purchase order; 7(14%) respondents reported that ICT tools are used in ordering items. Under ordering items, it was reported that, some of orders are sent to suppliers through electronic mail or fax. 13(27%) supposed ICT tools are used in keeping procurement records such as contacts of suppliers, and drafts of purchase orders. 8(18%) respondents said ICT tools are used in finding suppliers, it was reported that in case argent requirement supplier are searched through telephone or electronic mail. 4(9%) respondents said ICT tools are used in preparation of procurement reports such monthly and annual procurement reports. Also, 4(9%) respondents said ICT tools are used in preparation of procurement plan.

The tables show that keeping records and order processing covers large area than other procurement activities performed through ICT in the PMU. It was reported that computer in PMU is used to keep records of the procurement undertaken daily so as to simplify compilation of procurement monthly and annual reports. Again, computer in the PMU is used to prepare purchase orders of which there is soft copy purchase order draft kept in a computer edited and printed according to need. In addition, procurement officer reported that, follow ups of orders to suppliers are sometimes done through telephone. And in some cases orders are sent to suppliers through fax and e-mail especially for tenderers outside Coast region. Likewise, the agricultural officer during the interview reported that in most of the time when there are requirements to be requested from PMU telephones are used and then request for requirement documents are sent to store later in case of emergency.

Furthermore, top management staff during the interview said that, PMU staff and all other departments' staff have been emphasized to keep their records in the available computers and others modern technology tools like compact discs. This is to reduce problems of delay in preparing reports.

4.3 What are the Benefits of ICT Application in Procurement Process?

Benefits of ICT application in procurement process at Kibaha District Council.

As it is shown in the previous section Kibaha District Council applies ICT in some of procurement activities. Researcher also wanted to know the impact of ICT application in Kibaha District Council. To get the respondents views the question in the questionnaire to each group was asked on the advantages do they get from the use of computers and other new technological tools in procurement proceedings.

Respondents reported different benefits of ICT application in procurement activities. 8(18%) respondents revealed that application of ICT simplifies communication during procurement proceedings; it was exposed by 5(10%) respondents that ICT simplifies payment process, thus the coordination and control among PMU, accounting department and suppliers become easy with the use of fax, telephone and internet; 5(10%) respondents believed that ICT application lead to reduced paper works; 2(4%) respondents said ICT application makes order processing more easier; 3(6%) respondents said ICT application provides a room of working with different kind of suppliers, thus with internet communication the PMU can communicate with suppliers who are difficult to access physically or through postal letters on time especially international suppliers; 4(8%) respondents held that ICT application reduces loss of PMU documents; 11(26%) respondents said ICT application saves time than paper would do; 2(4%) respondents said ICT application simplifies record keeping in the PMU; and 3(6%) respondents said ICT application increases accuracy of information and less queries. The summary of benefits of ICT application in procurement process at Kibaha District Council is provided in table 4.5.

Table 4.5:   Benefits of ICT Application in Procurement Process

Impacts of ICT application	Responses	
	Frequencies	Percentage of frequencies
Simplifies communication	8	18
Simplifies payment system	5	10
Reduces paper works	5	10
Makes order processing easy	2	4
Reduces ordering costs	3	6
Provides a room of working with varieties of suppliers	4	8
Reduces loss of documents	4	8
Saves time	11	26
Simplifies record keeping	2	4
Increases accuracy of information	3	6
TOTAL	**47**	**100**

Source: Study findings at Kibaha District Council, 2014.

4.4   Which Challenges does ICT Application Face in Procurement Process?

Challenges facing ICT application in procurement process in Kibaha District Council.

In finding challenges facing ICT application in procurement process in Kibaha District Council 19(39.3%) respondents reported that most of staff who are require to use ICT tools are not knowledgeable enough on how to use the tools; this makes the available ICT tools not effectively utilized. 15(32.1%) respondents reported that there are no enough ICT tools to handle the procurement process, in the interview staff continued to say that, computers are few and the available are not fully connected to internet which makes difficult for them to link each other during procurement proceedings. They also reported that fax machine is not working efficiently and to use fax machine out of the office is very expensive timely and financially.

8(17.9%) respondents reported that cost of using computers and other ICT tools such as internet connection and fax services is high. They also pointed out that internet service providers do charge high rates which is not easy for a Council to allow each internet user to access. Likewise, it was reported that the use of ICT associates with setback such as privacy, since some of procurement activities need secrecy in order to have fairness to suppliers of goods and services. Also, 5(10.7%) respondents reported that there is no ICT policy in Kibaha District Council and for that case there are no stated activities for ICT application in the procurement process. The summary of challenges facing ICT application in procurement process in Kibaha District Council is provided in table 4.6.

Table 4.6:   Challenges facing ICT Application in Procurement Process in Kibaha District Council

Challenges	Responses	
	Frequencies	Percentage
Inadequate knowledge of staff	19	39.3
Inadequate ICT facilities	15	32.1
Cost of using computers	8	17.9
Lack of ICT policy	5	10.7
Total	**47**	**100**

Source: Research findings in Kibaha District Council, 2014.

From table 4.6, in adequate knowledgeable staffs is the challenge with high frequency of responses, this is followed by inadequate ICT tools, implying that they are the main challenges facing ICT application in procurement process in Kibaha District Council. But in general all challenges reported might be the cause of the existing rate of ICT application in Kibaha District Council.

CHAPTER FIVE

DISCUSSION OF THE FINDINGS

5.1   Discussion

This study covered different spectrum associating with ICT application in Kibaha District Council including activities in which ICT is applied in procurement process; ways of communication among PMU, User department Staffs and Suppliers; procurement practice associating with the existing rate of ICT application in procurement process; Areas where ICT can be applied in procurement process; benefits of ICT application in procurement process; and challenges facing ICT application in procurement process.

5.2   Procurement Practice and Existing Rate of ICT Application in Procurement Process

The study shows that procurement process is done through ICT tools and manual operations that involve use of papers. Findings show that the use of ICT tools is less than manual operations in procurement process in Kibaha District Council. Late delivery of requirements, problems in tracking documents and spending of more time in reviewing documents are the main problems associated with the present situation of doing procurement activities in Kibaha District Council. Other problems found in the study are inaccuracy of data, problems of keeping documents, congestion of documents in the office and problems of producing required reports being quarterly or annually based.

These findings reflect traditional procurement practice which is paper-based process that often is characterized by; fragmented purchasing, off-contract buying and lack of control over expenditures (Sanga, 2009).

5.3 Areas in which ICT is applied in procurement process at Kibaha District Council.

Study findings show that ICT is applied in areas like; order processing, keeping records, finding suppliers and preparation of procurement plan and reports. It was found that ICT is mostly applied in keeping records, order processing and finding suppliers.

In order processing it was found that computers are used to prepare purchase orders and to develop schedule of user needs. Likewise, records of suppliers are kept in computers and paper files. The procurement records kept are not only those related to suppliers but also the routine procurement activities are stored through computers to gather with procurement plans. The kept procurement records assists procurement staff in preparing procurement reports such as monthly and annual procurement reports.

On the other hand, it was found that ICT is used in finding suppliers by communicating with them through telephones, internet and fax.

These activities are in the same line with activities mentioned by different authors including Dobler (1996), which are: Maintenance of inventory records, Computation of order quantities, Preparation of purchase requisitions for inventory items, Preparation of request for quotation, Preparation of purchase orders, Maintenance of order status records, Distribution of accounting charges, Automatic preparation of follow-up memos, Posting of delivery and quality records, by part and by supplier, Preparation of numerous operating reports for management, Provision of decision support system information, Auditing of invoices and preparation of cheques for payment, and Electronic data interchange communications. Though, Kibaha District Council has not utilized all of these activities with ICT.

The user Department is the sole applicant of ICT in procurement. This is the point where all the items procured are utilized in the procuring entity.

Function of the user Department

(i)   Liaise with and assist the procurement management unity throughout the procurement or disposal by tender process to the point of contract placement.

(ii)   Initiate procurement and disposal by the tender requirement and forward them to the Procurement management Unit.

(iii)   Propose technical input to statement of requirement for procurement requirements to the Procurement Management unit.

(iv)   Propose technical specification to the Procurement Management Unit when necessary.

(v)   Input with technical evaluation of tender received as required by the Procurement Management unit.

(vi)   Certify for payment to suppliers, contractors or consultants.

(vii)   Report any departure from the terms and conditions of any awarded contract to the Procurement Management Unit.

(viii) Forward details of any required contract

(ix)   Maintain and archive records of contract management and

(x)   Prepare any report required for submission to the Procurement Management unit, the tender Board or the accounting officer.

As the functions stated above show the Procurement Management Unity supports the functions of the tender Board although the procurement management unit has its own function in facilitating procurement. The user department liaises with and assists the Procurement Management Unit throughout the procurement and disposal by the tender process to the point of contract implementation.

 These organs work in collaboration to ensure better performance of the function of procurement as required by the public procurement Act No.21 of 2004.In fulfilling its duties, user departments are supposed to be efficient through ICT application. All above stated functions will be met with less movement, more accurate while improving data retrieval.

5.4   Benefits of ICT Application in Procurement process at Kibaha District Council

The study findings show that ICT application has impact in procurement undertakings. Many respondents reported that ICT application saves time used in the procurement process. Some other benefits include simplification of communication

process, order processing, record keeping, reduction of paper works, loss of documents, accuracy and opportunity of working with varieties of suppliers.

These results are similar with the literature review on the advantages of ICT application. They are similar because most of literatures show that ICT application results to cost reduction and increased efficiency, quick and easy access to critical data in real time, speedier communication between buyers and suppliers, less time is required in administrative and tactical supply activities, improved information accuracy and integration of system with other departments (Leenders et al 2006).

5.5 Challenges facing ICT Application in Procurement process in Kibaha District Council

The results of the study show that the existing rate of ICT application in procurement process in Kibaha District Council is to a large extent due to inadequate knowledge of staff and ICT facilities in Kibaha District Council. Other reasons include lack of ICT policy and cost of using computers with its related accessories.

Also, it was found that, there are few number of computers in departments which makes difficult for all staff to perform their duties through computers. It is assumed that if the number of computers could be uniformly distributed in departments according to number of staffs, rate of using them in procurement operations could probably increase. Likewise, less use of internet, fax and telephone in undertaking procurement activities is affected by shortage of computer facilities.

On the other hand, the use of ICT tools like fax machines, computers and internet connection were reported to associate with high running costs, which makes the council some times to avoid it by not having such tools.

These findings succeeded to capture the idea of researcher in conceptual framework that, effective adoption of ICT application depends on knowledge of personnel or staff, availability of ICT tools and ICT adoption costs.

Thus, many respondents reported that, most of participants including user department staffs are not knowledgeable enough to use ICT tools.

There are some cases in the field which show that there is no enough knowledge of the Information Communication Technology to staff at KDC and to the suppliers who engage in tendering process. Some staffs do not understand well the procedures and the importance of each procedure involved in Information Communication Technology use. Lack of knowledge on the e-procurement, Procedures involved in its application has been evidenced in Kibaha District Council, the process of evaluation, approval and award of contracts. Technology requires the members of the Tender Board and other committees involved in procurement to use ICT, but some members due to lack of awareness on the effects that will be suffered they don't bother to take any action towards this interesting knowledge in which case they keep on complaining every year and become reluctant to changes. Also lack of enough knowledge to procurement staffs has been shown in the advertisement of tenders where some tenders where advertised through newspapers which have no wide circulation, this has resulted in small number of participants in tenders advertised by the municipal which also result into lack of competent bidders in some bids, the law requires the entity involving in procurement by tender to advertise the tender in the wide circulating magazines and in the website of the Public Procurement Regulatory Authority.

Source bidders also do not have enough knowledge of the Requirements of Information Communication technology and how to follow the bidding document in order to prepare responsive bids. This has been observed in one case where one of the bidders who was not satisfied with the announcement processes. This is because, not all suppliers have access to ICT technology especially when related to electric power.

Due to lack of knowledge on how to attend to use ICT tools bidders have failed to secure announced tenders due to failure on how to use ICT tools. bidders are required to prepare their bids in accordance with the requirements stated in the bidding documents provided to them by the procuring entity, failure to meet any one of the requirements leads to disqualification of the tender and can not be taken further to the evaluation stage.

When responding to the question on whether the members involved in Public Procurement in Kibaha District Council have a sound training and knowledge in the field, most of the respondents answered that they are not having enough knowledge and awareness on the requirements of the ICT application.

CHAPTER SIX

SUMMARY, CONCLUSION AND POLICY IMPLICATION

6.1 Summary and Conclusion

Existence of ICT application in procurement in process in Kibaha District Council has been proven true but manual operations are dominant. ICT is applied in activities like order processing, keeping records, communicating with suppliers, preparing procurement reports and procurement plan.

This study on investigating challenges for the existing rate of ICT application in procurement process has conclusively proven that ICT is applied in order processing, keeping records, finding suppliers, preparing procurement plans and reports. It has been also proved that manual procurement activities are dominant in procurement process in Kibaha District Council.

Also this study acknowledge that there are benefits of applying ICT in procurement process such as cost reduction, management of records, increased efficiency in ordering processing and working with suppliers. Also the study findings have shown positive relation with other thinkers that manual operations associate with problems like; late delivery of requirements due to delay in information flow in procurement proceedings, more time taken in working with documents and inaccurate information.

Moreover, the study findings show that the existing rate of ICT application in procurement process is mostly due to; inadequate knowledge of staff on the use of ICT tools and inadequate ICT facilities. Also, study findings show that, other reasons for the existing rate of ICT application in procurement process in Kibaha District Council are cost of using ICT tools and lack of ICT policy to govern ICT application in procurement process.

6.2 Policy implication

Based on the findings of this research, the following recommendations should be considered in facilitating other Tanzanian District Councils towards ICT in procurement processes.

6.2.1 Knowledge of Staff

It has been found that ICT application in procurement process is highly affected by knowledge of staff on the use of ICT tools. In order to enhance the use of available ICT tools such as computer, training should be provided to staff for smooth technological knowhow. Also, training should reflect procurement activities and relevant documents. The training have to be provided to all parts included in procurement proceedings especially user departments' staff, suppliers and PMU staff.

6.2.2 Availability of ICT tools

The study has observed that there are inadequate ICT tools for smooth ICT application in procurement process. Because it has been found that application of ICT is of benefit to the Council, therefore the council need to include in its budget and other fund that they can plan for more ICT tools acquisition. In acquiring ICT tools, the Council need to acquire both hard ware and soft wares customized for procurement undertaking.

6.2.3 Cost of using ICT tools

Study findings show that ICT application in procurement process in Kibaha District Council is also affected by the cost associated with the use of ICT tools. Also, in dealing with cost of internet and fax service providers, the Council needs to include cost reduction agreements with service providers. In addition to that, the Council needs to search for best internet service providers since in the present liberalized economy service providers are many.

The results also shows that budgeted funds for procurement of goods, service and works are not released on time and funds are not enough to meet the requirement this

lead to late or poor completion of works. Late payment to the suppliers, contractors affect procurement as a whole and even more supplier due to less belief in e-world. The other major reason for poor ICT adoption rate is inadequate management support to the procurement unit. Top management set overall tone and philosophy for the organization.

The analysis shows that the allocated funds for purchases are not adequate to meet the requirement and are not issued at time. The funds budgeted for purchases are not released as per budget. In addition, lack of enough funds and timely issue of funds has affected negatively the services of the supplies function to user department. As result of this, suppliers who are service provider are not paid promptly as stipulated in the contract. The way money has been misused in public procurement is a mirror to all professionals that have not achieved high degree in adhering to ethical code of conducts and integrity in public procurement. This makes less achievement on procurement of support tools, first being ICT tools.

6.2.4   Suppliers Participation for ICT Application

Business community is a crucial part in creating a favorable environment for effective and efficient Information Communication technology in rural districts. they should be trained on open tendering procurements as per requirement of the public procurement Act. Equally important bidders need to be trained on the access of tender opportunities in the PPRA website instead of waiting for local magazines.

Enough information and knowledge should be provided to bidders on how to submit their claims concerning dissatisfaction of procurement procedures though internet. This will help the bidders to lodge the claims be within the time when complaining for their rights and also will help them to recall any communication easily instead of using paper based communication which can be lost or misplaced.

6.2.5   Recommendations for the Government

The government need to train its personnel's on how to use proper methods of procurement in order to enhance efficient and effectiveness. For the staff who have

low basic education but long experience they should be provided with regular short courses in services and some times off the job vocational training and encourage them to undergo some special evening class programmes.

The Government should make sure that procurement professionals are supported by giving them confidence on doing their job. In addition the environment should be created to them like how they treat other professionals e.g. Accountant, Engineer etc. The district should add more staff to the procurement section which can establish very well the unit as recommended by PPRA and the job should be done smoothly. The government should allocate adequate procurement funds for any procuring entity.

Procurement needs to be recognised as one of important element in development processes hence the need to implement it in proper manner as to achieve national development objectives.

The VPO is advised to supervise the contract effectively from the initial stage to the final stage so as to avoid complains and poor implementation of the desired work

Procurement officers should be recognized like other professionals like Accountant, Engineer, Doctor etc, also organization structure should be well established to show where procurement officers are there, this will build confidence to them.

The Government is advised to train and emphasised on the knowledge of contract management and the regulations pertaining to procurement should be emphasized to every one within the ministry so as to enhance efficiency in public procurement.

Good relationship should be established between management and PMU. This will built the confidence for procurement officers.

6.2.6   Recommendations for Procurement Professional

The professionals should accept changes in purchasing and supplies department. Changes could occur by breaking from routine of monitoring and evaluating the supplier for their performance and rate them. They have to build confidence on doing their job. Procurement professional should no longer as they behave previously have to go with the changes of the technology .Professional should not be rigid but be

flexible in order to cache out the new world changes which occurs day to day. The purchasing rights of time, quality, quantity place and source are taking a new meaning taking into account the technological environment.

Effective and efficient procurement activities require the setting up of instruments of transparency. The instrument should build and maintain confidence and participation of both supplier/contractors and the general public. The big instrument of the public procurement is the PPA-2004 and Regulations 2005.
Professional should supervise procurement contract efficient and effectively from the initial stage to the final stage of the contract.

Professional should ensure of working their job without conflict of interest, selfishness, and to ensure co-operation, themselves in the department and to other professionals like engineer, accountant etc. They have to work close associated by other public officers who are involved in the supply of goods.

6.2.7 Recommendation for the Procurement Management Unit.

This is a team of procurement and other technical specialists together with the necessary support and administrative staff. This section should make familiarization with ICT technology since it performs number of activities crucial for PMU.

Functions of the Procurement Management Unit

(i)   Manage all procurements and disposal by tender activities of the procuring Entity except adjudication and the award of contract.

(ii)   Support the functioning of the tender board

(iii)   Implements the decision of the tender board

(iv)   Liaise directly with the authority on matters within its jurisdiction.

(v)   Act as a secretariat to the tender board.

(vi)   Plan the procurements and disposal by tender activities of the procuring entity

(vii)   Recommend procurements and disposal by tender procedures

(viii) Check and prepare statements of requirements

(ix)   Prepare tendering document

(x)   x)Prepare advertisements of tender opportunities

(xi)   Prepare contract documents

(xii)   Issue approved contract documents

(xiii)   Maintain and archive records or the procurement and disposal process.

(xiv)   Maintain a list or register of all contracts awarded.

(xv)   Prepare monthly reports for the tender board

(xvi)   Co-ordinate the procurements and disposal activities of all department of the procuring entity, and

(xvii)   xvii)Prepare other reports as may be required from time to time

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APPENDICES

Appendix 1:   Questionnaires

Dear Respondent,

This questionnaire is for a study titled **"Procurement and information communication technology"**. It is for academic purpose only. You are requested to fill them with clarity and the answers you offer will be confidentially treated.

NB: Mostly = more than 50%

Write: T   for   TRUE

      F   for   FALSE

Question one:

- What are the procurement-practices used in procurement process?

1. Information communication technology is fully applied in procurement process.____
2. Information communication technology is moderately applied in procurement process.____
3. Information communication technology is not applied in procurement process.____
4. We communicate with suppliers mostly through internet.____
5. We communicate with suppliers mostly through postal letters.____
6. We communicate with suppliers mostly through telephone.____
7. We communicate with suppliers mostly through fax.__
8. We communicate our requirements to Procurement Management Unit mostly through computer and internet.__
9. We communicate our requirements to Procurement Management Unit mostly through paper document.__
10. We communicate our requirements to Procurement Management Unit mostly through telephone.__

Question two:

- Which areas ICTcan be applied in procurement process?

1. Assessment of supply market is mostly done electronically(who offer what in the market).___

2. Negotiation with suppliers is mostly done electronically.___

3. Office spending assessment is mostly done electronically(to find what should be bought).___

4. Office spending assessment is mostly done electronically(find where should we buy).____

5. Office spending assessment is mostly done electronically(find at what price should we buy).____

6. Tender advertisement are mostly done electronically (example: on website).___

7. Tender advertisement are mostly done manually (example: news papers).___

8. Supplier submit tenders mostly physically (hard copy documents).___

9. Tender results are communicated to suppliers mostly electronically.___

10. Contracts with suppliers are signed electronically.___

11. Purchase orders are mostly sent to suppliers electronically.___

12. Supplier confirm orders mostly electronically.___

13. Order receipt documents (example: delivery note) are sent to us mostly electronically.___

14. Most of payments are paid manually (example: cash, physical paper cheques).___

15. Most of payments are done electronically (example: credit and debit cards, bank transfer).___

16. Procurement records (example: order and contracts) are mostly kept electronically.___

17. We mostly communicate with other departments through computer.___

18. We mostly communicate with other departments though papers.___

19. We mostly communicate with other departments through telephone.___

20. We mostly communicate with other departments through fax.___

21. We mostly communicate with other departments orally in meetings.___

22. Most of our office supplies are from International suppliers.__

23. We mostly communicate with international suppliers through internet.__

24. We mostly communicate with international suppliers through postal letters.__

25. We mostly communicate with international suppliers through fax.__

26. We mostly communicate with international suppliers through telephone.__

27. I mostly communicate with my buyers through internet.__

28. I mostly communicate with my buyers through postal letters.__

29. I mostly communicate with my buyers through telephone.__

Question three:

- What are the benefits of ICT application in procurement process?

1. ICT application in procurement results to low cost of information.__
2. ICT application in procurement results to low costs of buying or selling.__
3. ICT application lowers barriers to market entry.__
4. Through ICT application operation costs are reduced.__
5. Through ICT application prices are more transparent, maverick buying (purchases that occur outside of an organization's guidelines) is avoided.__
6. Through ICT application businesses can easily use preferred supplier networks.__
7. Through ICT application there is better balance of power between buyer and seller given that information is much more available.__
8. ICT application in procurement systems also allow more efficient integration of supply chains.__
9. ICT application provide better organization and tracking of transaction records for easier data acquisition.__
10. Through ICT application transactions can be standardized and all bids for products and services can be tracked more easily.__
11. ICT application promotes shorter product-development cycles.__
12. ICT application gives shorter ordering cycles.__
13. ICT application enhance wider adoption of "just-in-time" practices.__
14. ICT application increased supplier involvement in product development.__

Question four:

- Which challenges does ICT application face in procurement process?
1. ICT application in procurement need high training cost.__
2. ICT application in procurement brings higher risk of data security.__
3. ICT application in procurement will need full organizational restructuring.__
4. Most staff havelow technology know-how.__
5. ICT application in procurement results to rapidly growing multiple standards.__

6.   ICT application is challenging as it is still growing and changing. TRUE, FALSE

    7.   Lack of enough skills in ICT hinders its application in Procurement.__

    8.   Lack of trust and security problems hinder ICT application in procurement.__

9.   Piracy and presence of fake suppliers put ICT application in procurement slow   moving.__

    10.   Difficulty in integrating Information System hinder ICT application in procurement.__

11.   Set up costs and running costs hinder application of ICT in procurement.__

    12.   Reluctance of suppliers on ICT application, hinder its application speed.__

13.   Quality assurance (no physical inspection) hinders application of ICT in procurement.__

Thank you for your cooperation.

Appendix 2:   Readiness of some selected East African Countries

Table 1.1

Country	2008	2005	Rank in 2008	Rank in 2005
Mauritius	0.5086	0.5317	64	52
Kenya	0.3474	0.3298	124	122
Uganda	0.3133	0.3081	133	125
Rwanda	0.2941	0.2530	142	143
Tanzania	0.2929	0.3020	144	127
Burundi	0.1788	0.1643	174	166
Region	0.2879	0.2836		
World	0.4514	0.4267		

Source: UN, 2008.

THE MAP OF PWANI REGION DICTRICT COUNCILS, SHOWING BOUNDARIES OF KIBAHA DISTRICT COUNCIL.

Source: http://en.wikipedia.org/wiki/File:Kibaha.GIF;Kibaha District.

The red highlight on the map shows Kibaha District of which the study is going to be centered.

Appendix 3: Districts of Tanzania

2. DISTRICTS OF TANZANIA

As of the 2012 census,[1] the thirty regions of Tanzania were divided into 169 districts. The districts are listed below, by region:

Arusha Region

The district and city councils of the Arusha Region as of the 2012 census, along with their populations:

- Arumeru District Council 268,144
- Arusha City Council 416,442
- Arusha District Council 323,198
- Karatu District Council 230,166
- Longido District Council 123,153
- Monduli District Council 158,929
- Ngorongoro District Council 174,278

Dar es Salaam Region

The municipal councils of the Dar es Salaam Region as of the 2012 census, along with their populations:

- Ilala Municipal Council 1,220,611
- Kinondoni Municipal Council 1,775,049
- Temeke Municipal Council 1,368,881

Dodoma Region

The district and municipal councils of the Dodoma Region as of the 2012 census, along with their populations:

- Bahi District Council 221,645
- Chamwino District Council 330,543
- Chemba District Council 235,711
- Dodoma Municipal Council 410,956
- Kondoa District Council 269,704

-     Kongwa District Council 309,973
-     Mpwapwa District Council 305,056

Geita Region

The district councils of the Geita Region as of the 2012 census, along with their populations:

-     Bukombe District Council 224,542
-     Chato District Council 365,127
-     Geita District Council 807,619
-     Mbongwe District Council 193,922
-     Nyang'hwale District Council 148,320

Iringa Region

The district, municipal, and town councils of the Iringa Region as of the 2012 census, along with their populations:

-     Iringa District Council 254,032
-     Iringa Municipal Council 151,345
-     Kilolo District Council 218,130
-     Mafinga Town Council 51,902
-     Mufindi District Council 265,829

Kagera Region

The district and municipal councils of the Kagera Region as of the 2012 census, along with their populations:

-     Biharamulo District Council 323,486
-     Bukoba District Council 289,697
-     Bukoba Municipal Council 128,796
-     Karagwe District Council 332,020
-     Kyerwa District Council 321,026
-     Missenyi District Council 202,632
-     Muleba District Council 540,310
-     Ngara District Council 320,056

Kaskazini Pemba Region of Zanzibar

The districts of the Kaskazini Pemba Region in Zanzibar as of the 2012 census, along with their populations:

- Micheweni District 103,816
- Wete District 107,916

KaskaziniUnguja Region of Zanzibar

The districts of the KaskaziniUnguja Region in Zanzibar as of the 2012 census, along with their populations:

- Kaskazini A District 105,780
- Kaskazini B District 81,675

Katavi Region

The district and town councils of the Katavi Region as of the 2012 census, along with their populations:

- Mlele District Council 282,568
- Mpanda District Council 179,136
- Mpanda Town Council 102,900

Kigoma Region

The district, municipal, and town councils of the Kigoma Region as of the 2012 census, along with their populations:

- Buhigwe District Council 254,342
- Kakonko District Council 167,555
- Kasulu District Council 425,794
- Kasulu Town Council 208,244
- Kibondo District Council 261,331
- Kigoma District Council 211,566
- Kigoma-Ujiji Municipal Council 215,458
- Uvinza District Council 383,640

Kilimanjaro Region

The district and municipal councils of the Kilimanjaro Region as of the 2012 census, along with their populations:

- Hai District Council 210,533
- Moshi District Council 466,737
- Moshi Municipal Council 184,292
- Mwanga District Council 131,442
- Rombo District Council 260,963
- Same District Council 269,807
- Siha District Council 116,313

Kusini Pemba Region of Zanzibar

The districts of the Kusini Pemba Region in Zanzibar as of the 2012 census, along with their populations:

- ChakeChake District 97,249
- Mkoani District 97,867

KusiniUnguja Region of Zanzibar

The districts of the KusiniUnguja Region in Zanzibar as of the 2012 census, along with their populations:

- Kati District 76,346
- Kusini District 39,242

Lindi Region

The district and municipal councils of the Lindi Region as of the 2012 census, along with their populations:

- Kilwa District Council 190,744
- Lindi District Council 194,143
- Lindi Municipal Council 78,841
- Liwale District Council 91,380
- Nachingwea District Council 178,464
- Ruangwa District Council 131,080

Manyara Region

The district and town councils of the Manyara Region as of the 2012 census, along with their populations:

- Babati Town Council 93,108
- Babati District Council 312,392
- Hanang District Council 275,990
- Kiteto District Council 244,669
- Mbulu District Council 320,279
- Simanjiro District Council 178,693

Mara Region

The district and municipal councils of the Mara Region as of the 2012 census, along with their populations:

- Bunda District Council 335,061
- Butiama District Council 241,732
- Musoma District Council 178,356
- Musoma Municipal Council 134,327
- Rorya District Council 265,241
- Serengeti District Council 249,420
- Tarime District Council 339,693

Mbeya Region

The district, city, and town councils of the Mbeya Region as of the 2012 census, along with their populations:

- Chunya District Council 290,478
- Ileje District Council 124,451
- Kyela District Council 221,490
- Mbarali District Council 300,517
- Mbeya City Council 385,279
- Mbeya District Council 305,319
- Mbozi District Council 446,339
- Momba District Council 196,818

- Rungwe District Council 339,157
- Tunduma Town Council 97,562

MjiniMagharibi Region of Zanzibar

The districts of the MjiniMagharibi Region in Zanzibar as of the 2012 census, along with their populations:

- Magharibi District 370,645
- Mjini District 223,033

Morogoro Region

The district and municipal councils of the Morogoro Region as of the 2012 census, along with their populations:

- Gairo District Council 193,011
- Kilombero District Council 407,880
- Kilosa District Council 438,175
- Morogoro District Council 286,248
- Morogoro Municipal Council 315,866
- Mvomero District Council 312,109
- Ulanga District Council 265,203

Mtwara Region

The district, municipal, and town councils of the Mtwara Region as of the 2012 census, along with their populations:

- Masasi District Council 247,993
- Masasi Town Council 102,696
- Mtwara District Council 228,003
- Mtwara Municipal Council 108,299
- Nanyumbu District Council 150,857
- Newala District Council 205,492
- Tandahimba District Council 227,514

Mwanza Region

The district and municipal councils of the Mwanza Region as of the 2012 census, along with their populations:

- Ilemela Municipal Council 343,001
- Kwimba District Council 406,509
- Magu District Council 299,759
- Misungwi District Council 351,607
- Nyamagana Municipal Council 363,452
- Sengerema District Council 663,034
- Ukerewe District Council 345,147

Njombe Region

The district and town councils of the Njombe Region as of the 2012 census, along with their populations:

- Ludewa District Council 133,218
- Makambako Town Council 93,827
- Makete District Council 97,266
- Njombe District Council 85,747
- Njombe Town Council 130,223
- Wanging'ombe District Council 161,816

Pwani Region

The district and town councils of the Pwani Region as of the 2012 census, along with their populations:

- Bagamoyo District Council 311,740
- Kibaha District Council 70,209
- Kibaha Town Council 128,488
- Kisarawe District Council 101,598
- Mafia District Council 46,438
- Mkuranga District Council 222,921
- Rufiji District Council 217,274

Rukwa Region

The district and municipal councils of the Rukwa Region as of the 2012 census, along with their populations:

- Kalambo District Council 207,700
- Nkasi District Council 281,200
- Sumbawanga District Council 305,846
- Sumbawanga Municipal Council 209,793

Ruvuma Region

The district and municipal councils of the Ruvuma Region as of the 2012 census, along with their populations:

- Mbinga District Council 353,683
- Songea District Council 173,821
- Songea Municipal Council 203,309
- Tunduru District Council 298,279
- Namtumbo District Council 201,639
- Nyasa District Council 146,160

Shinyanga Region

The district, municipal, and town councils of the Shinyanga Region as of the 2012 census, along with their populations:

- Kahama Town Council 242,208
- Kahama District Council 523,802
- Kishapu District Council 272,990
- Shinyanga District Council 334,417
- Shinyanga Municipal Council 161,391

Simiyu Region

The district councils of the Simiyu Region as of the 2012 census, along with their populations:

- Bariadi District Council 422,916
- Busega District Council 203,597
- Itilima District Council 313,900

- Maswa District Council 344,125
- Meatu District Council 299,619

Singida Region

The district and municipal councils of the Singida Region as of the 2012 census, along with their populations:

- Ikungi District Council 272,959
- Iramba District Council 236,282
- Manyoni District Council 296,763
- Mkalama District Council 188,733
- Singida District Council 225,521
- Singida Municipal Council 150,379

Tabora Region

The district and municipal councils of the Tabora Region as of the 2012 census, along with their populations:

- Igunga District Council 399,727
- Kaliua District Council 393,358
- Nzega District Council 502,252
- Sikonge District Council 179,883
- Tabora Municipal Council 226,999
- Urambo District Council 192,781
- Uyui District Council 396,623

Tanga Region

The district, city, and town councils of the Tanga Region as of the 2012 census, along with their populations:

- Handeni District Council 276,646
- Handeni Town Council 79,056
- Kilindi District Council 236,833
- Korogwe Town Council 68,308
- Korogwe District Council 242,038

- Lushoto District Council 492,441

- Muheza District Council 204,461

- Mkinga District Council 118,065

- Pangani District Council 54,025

- Tanga City Council 273,332

(http://en.wikipedia.org/wiki/Districts_of_Tanzania: This page was last modified on 24 December 2013 at 15:56.)