THE ROLE OF E-GOVERNMENT IN EFFECTIVE SERVICE DELIVERY

A Case Study of Tanzania Electric Supply Company Limited (TANESCO)

UNIVERSITY *of the*
WESTERN CAPE

By

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ABSTRACT

The essence of e-government is to link government activities with the advanced technology that the world is having today. This technology has already shown a remarkable job in bringing efficiency in private sector through e-business, e-banking, e-procurement etc.

It is, therefore, recommended by this study that government and its agencies could utilize e-government initiatives to bring service delivery closer to citizens. By so doing government officials and citizens would become much closer and perform their duties well and efficiently.

The experience from various countries shows that there are various Information and Communication Technology (ICT) and e-government initiatives even in poor countries. In rural areas of Tanzania where electricity has never been thought to reach where illiteracy rates are increasing and where poverty is high, people are using mobile phones for their activities. This is possible as the prices of mobile phones are low and networks are available in such rural part of the country.

Tanzania enacted ICT policy in 2003 which, among other things, emphasizes the need to have success in e-government services. Experience on ground, though, reveals that this policy is often not implemented. What seems in the implementation of ICT policy in Tanzania difficult is the lack of political will and the will to agree to change.

On the other hand, Tanzanian citizens have been for a long time ready for change. A good example may be advent of the mobile phone industry in the country. Many respondents in this research expressed the need to adopt ICT to advance ordinary people.

These respondents recommended that government officials accept change with regard to ICT, to introduce developmental plans and be innovative and creative enough in establishing service delivery programmes. As borne out by this study, ICT can also be used to link the private sector, public sector and service delivery to citizens.

Still though, poor countries, apart from having many priorities to contend with, have to acknowledge that the world is changing rapidly and in order to combat poverty more effectively, technology is useful as it makes people understand the trends and changes that the world is witnessing today. Indeed, Tanzania can use ICT to move ahead in e-government because it has a good telecommunication system, a factor that would allow for the success of online services.

THE ROLE OF E-GOVERNMENT IN EFFECTIVE SERIVE DELIVERY A CASE STUDY OF TANZANIA ELECTRIC SUPPLY COMPANY LIMITED (TANESCO)

Boniphace Makene

KEYWORDS

E-Government

Information and Communication Technology (ICT)

Information Technology (IT)

Government to Business (G2B)

Government to citizens (G2C)

Government to Government (G2G)

Governance

Government

Service delivery

Tanzania Electric Supply Company Limited (TANESCO)

DECLARATION

I declare that *The Role of E-Government in Effective Service Delivery: A case study of Tanzania Electric Supply Company Limited (TANESCO)* is my own work that it has not been submitted for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged by complete references.

Boniphace Makene   September 10th 2009

Signed:……………………………

ABBREVIATIONS

BOT ....Bank of Tanzania
CIA ....Central Intelligence Agency
CPI.....................................Corruption Perception Index
CNP....................................Contribution Network Project
DFID...................................Department for International Development
EC......................................European Commission
GDP...................................Gross Domestic Product
G2B....................................Government-to Business
G2C....................................Government-to-Citizens
G2G....................................Government-to-Government
HDI ....Human Development Index
ICT.....................................Information and Communication Technology
ICT4D............................... ICT for Development
IMF.................................... International Monetary Fund
IP..Internet Protocol
IT.. Information Technology
ITU..................................... International Telecommunication Union
IXP.....................................Internal Exchange Point
MEDT.................................Ministry of Economic Development and Trade of
                                           Russian Federation
NPM................................... New Public Management
PC.......................................Personal Computer
TANESCO........................... Tanzania Electric Supply Company Limited
TCC ....Tanzania Communication Corporation
TCRA..................................Tanzania Communications Regulatory Authority
TPC ....Tanzania Posts Corporation
TTCL................................... Tanzania Telecommunications Company Limited
UNESCO............................. United Nations Educational, Scientific
                                           and Cultural Organisation
UNDP ....United Nations Development Programme

ACKNOWLEDGEMENT

What makes a human human? Which steps make a human able to endure steel? Who distinguishes the character and behaviour of a human being? These are some of the questions that stimulated my journey towards sacrificing, suffering and struggling to go back in school for a Masters in Public Administration, the field that I really love and in which I pursue my research even as I was facing hardship in my working area.

After working in Tanzanian's newsroom, I found that administration and management posts are not provided to people based on merits or qualification but rather on technical know-how or on counting days, months and years that one has spend in a newsroom. I started being a victim after challenging this experience and told myself I will never surrender until I plant what Augustine Comte referred to as social dynamics in human change.

In actual sense, newsrooms in Tanzania are administered and managed by intuition and imitation. This is another subject that can be researched. It is difficult to bring people together and expand efficiency and effectiveness in organisations. This type of administration in Tanzanians newsrooms has been there for years. It has created a sense of dictatorship, discrimination and other qualities of bad governance which–a young Tanzanian, like me, couldn't allow to affect most of my life.

To find a solution, I decided to quit working and go to school for MPA programme at the University of the Western Cape. I wanted and still wish to be a stimulus in bringing a wind of change, hope and courage in administering newsrooms in Tanzania. John Kerry, the Democrat Presidential Candidate in 2004, and a Senator from Massachusetts, used to say: "I know we can do better." I actually believe in this notion of change.

I do acknowledge the following people and organisations for making my dream happen. The DAAD Board, Robert Gallagher, Comrade Zahor Haji and Angolwisye Malaisyo for contributing whatever they had to help me attend my studies at UWC.

Special thanks must go to Tina Ndonde (none can pay you back for what you have given me in my life), my family members, my fellow students Sydney and George, comrades Ramadhan Msangi and Gasper Materu and my younger brother Kulwa Makene. All in all this work was nothing if it did not pass through the eyes of Wangui Kimari (a sister and a friend), Melissa Dean, the only and only one Professor, Brother and Comrade John James Williams. I understand the list is long and I cannot afford mentioning everyone. I do end up by thanking the 'Super Power' for giving me courage, protecting me in hardship and making me strong in this journey. My Mom, Esther Makene, this is another work coming from the hands and the brain of your son.

DEDICATION

I do dedicate this Minithesis to the following: the people of the United Republic of Tanzania, I wish this work to compliment and care for our people and generations to come; then to the families of Monica Rudala, Esther Maingu, Machumu Milali and all others who have sacrificed in so many ways to sustain me and lastly to the internet generation in the world, 'let us believe in technology as it helps to simplify our lives'.

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Source: CIA 2008 World factbook

MAP OF TANZANIA

Source: CIA 2008 World factbook

CHAPTER ONE

THE PROBLEMATIC OF E-GOVERNMENT IN TANZANIA

Introduction

Improvements in the field of Information and Communication Technology (ICT) are allowing governments to create and apply policies governing the role of ICT in government[1] activities. These policies aim at advancing the level of service[2] provision in the public sector by using the support available from electronic and digital equipment such as websites, online services like bill payments and other citizen service applications. ICT facilities make both the public and private sector work more effectively by giving attention to the needs of citizens/customers while, at the same time, reducing costs, time and improving the quality of services.

The private sector is currently more advanced in its provision of electronic services than the public one. As a matter of fact, improvements to electronic services have been shown to be beneficial to the private sector; this has created a need for the public sector to adopt the same techniques in order to be sustainable. It was economically advanced countries that began introducing electronic processes in the public services. They were then followed by less

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[1] In this study, government refers to a body that has the authority to make, and the power to enforce laws within a civil, corporate, religious, academic organization (Kitaw, 2006). At a nation level, government commonly refers to the administration of a state in general, the executive function or branch of the body of the exercising authority.

[2] Services in this study is defined as products that consists of activities, benefits or satisfaction that are offered for sale that are essentially intangible and do not result in the ownership of anything (Kotler, Wong, Saunders & Armstrong, 2005). Many local governments offer services such as water, sanitation, electricity, schools, hospitals and housing. TANESCO offers electricity to Tanzanian citizens.

developed countries such as Mauritius, Ethiopia and Rwanda. This study investigates the role of electronic government services in Tanzania and assesses how adopting this technology impacts service delivery[3].

The UNDP Human Development Index (2007/08) ranks Tanzania the 159th least developed country. This position places Tanzania among the poorest countries in the world. Obviously, poverty has its effect on ICT application but it does not remove all chances that a country will invest in electronic facilities in its day to day activities. In the case of Tanzania, the government has already added electronic features to some of its services. The need to evaluate the extent and nature of this development motivates this study.

The Ministry of Economic Development and Trade of Russian Federation (MEDT) (2007), analyses the concept of e-government as a new form of activity of government bodies aimed at providing citizens and organizations with more flexible, efficient and conveniently delivered public services as well as informing the public about the results of governmental activities through a wide application of Information and Communication Technologies (ICT). According to the MEDT definition, e-government helps public services to be delivered to citizens or an organization without the need for a personal visit to the governmental agency, it improves the quality of public management and ICT-based public services delivery and considerably increases

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[3] According to Dijkzeul (2005) service delivery is regarded as a process between a provider and a client or target group that creates benefits by facilitating a change in the client(s), a change in their physical possessions, or a change in their intangible assets. Through this definition, it is necessary to understand that, service delivery reveals the relationship between two sides, one side being of the provider and the second of the receiver.

the efficiency[4] of budgetary funds allocated to the development and update of the state information systems. In this understanding, simplification of services delivery procedures and reduction of delivery time reduces administrative costs incurred by citizens and organizations in obtaining services and allows for the introduction of uniform standards of service delivery.

E-government makes information about the activities of government bodies more open and allows for access to information by and direct participation of, citizens organizations, and civil society institutions, when they examine decisions taken at all government levels. It also improves administrative and managerial process quality through perfection of information and analytical support of decisions made at all government levels, and through provision of flexible, efficient and complete control over the performance governmental agencies.

Research background
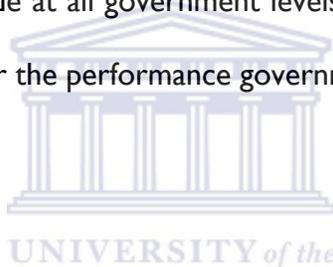
The idea of conducting this kind of study came about after I realized that many governments are using ICT facilities to deliver services to citizens all over the world today. This involvement of governments in using electronic devices for government functions is called 'e-government'. E-government can be measured in each country and this study takes a particular look at the Tanzanian case.

Research conducted in Rwanda indicates that though Rwanda is a poor country, it has nonetheless managed to incorporate ICT facilities into its activities and consequently has managed to minimize problems caused by the red-tape in governmental services delivered to its citizens (Kitaw, 2006). The example of Rwanda seems to indicate that successes in e-

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[4] Efficiency means getting any given results with the smallest possible inputs, or getting the maximum possible output from given resources. See Black, J (1997) Oxford Dictionary of Economics

government start with a country's readiness to employ ICT facilities in its functions and by changing from the old paper based bureaucracy[5].

E-government increases efficiency and effectiveness[6] of government delivery. Through that notion, governments must consider positively applying sound e-government qualities and help their citizens to utilize them. This means that e-government must be included in factors for sound governance because it helps to minimize conflicts between citizens and civil servants, increases the level of citizen participation, reduces governmental costs in service provisions, and makes communication easier between government and its agencies on one hand and with citizens on the other.

Though Tanzania faces problems such as poverty, illiteracy and power shortages, these problems cannot be a roadblock towards applying e-government qualities in service delivery. This study focuses on TANESCO, Tanzania's only electricity producer and Distributor Company. TANESCO by virtue of being a governmental agency must adhere with e-government processes in delivering electricity to citizens.

This study is particularly timely and important because it has the potential to influence Tanzanian government to change or enact policies in e-government that will enable more

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[5] Bureaucracy is the theory that stipulates the duties and roles of each official in the system of administration and describes their responsibility (Marshall, 1998). The father of this theory was a Germany Philosopher Max Weber. More details on chapter two of this thesis.
[6] Effectiveness means success, productiveness, competency, capability, ability, efficacy and effectuality: see Oxford Thesaurus Dictionary 1994

citizen participation[7] in service delivery. It may also help citizens and TANESCO to understand a better management system that will increase efficiency in its day to day activities.

Statement of the research problem

This study focuses on the impact of e-government on service delivery and it seeks to understand whether or not it improves service delivery. The study uses the Tanzania Electric Supply Company Limited (TANESCO) as a case study. TANESCO is the only power company in Tanzania. As such, this company has a big role in making e-government happen for the Tanzanian people because internet and computer usage have direct connection with electricity as source of power. Currently TANESCO serves only 11% of 38 million Tanzanians. Electricity plays a big role in influencing e-government and taking TANESCO as a case study creates the potential for this research to come out with remarkable findings that could help to improve the position of e-government in Tanzania.
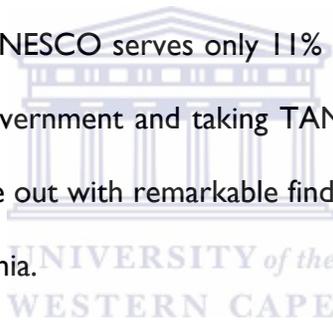
Research objectives: This study has two objectives, which are discussed below:

a) Main objective

The main objective of this study is to investigate the role of e-government in effective service delivery. I consider electricity as the main service that this study investigates and observe how e-government may influence its provision. To achieve this objective, this study evaluates

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[7] Participation means a process through which stakeholders influence and share control over development initiatives and the decisions and resources which affect them (World Bank, 1996). The broad aim of participation in development is to actively involve people and communities in identifying problems, formulating plans and implementing decisions over their own lives (DFID, 2002; Guijt and Shah, 1998).

available online services that TANESCO has in comparison to manual (mail and interpersonal based) services. In measuring efficiency and effectiveness this study considers factors such as cost, time and public engagement in using online services compared with traditional manual services.

b) Secondary objective

This study seeks to evaluate the community's understanding of e-governance and how it influences aspects of good governance[8] such as; transparency[9], accountability[10], participation, responsiveness[11] and human rights. To achieve this objective the study chooses its stratified random sampling based on gender, age and level of education. This choice is important because there is a crucial relationship between age, gender and level of education with e-government usage.
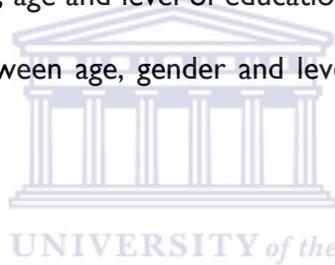
Research questions: To achieve the above objectives, this study tries to answer the following questions:

- Does e-government contribute to cost-cutting in the public sector?

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[8] This study defines governance using a definition from the World Bank. Through this definition governance refers to an economic role for the state, a set of policy reforms and other non economic role of the state such as transparency, accountability, participation, and responsiveness in the process of government (cited in Munshi, 2004). This definitions marks important roles of both citizens and governments and indicates the necessity to develop performance in governance processes for the benefit of citizens and the government as an institution.

[9] Transparency means the act of oppenness, frankness, candidness, directness, forthrightness and ingenuousness: see Oxford Thesaurus, 1994
[10] Accountability means the requirement for representative to answer to the rtepresented on the disposal of their power and duties, act upon criticisms or requirements made of them, and accept some responsibility for failure, incompetence, or deceit (Black, 1996)
[11] Responsiveness refers to the act of quick reaction, be sensitive, sympathetic, aware or open : see Oxford Thesaurus Dictionary 1994

- Does e-government empower citizens in terms of developing direct participation in service delivery?

- Does e-government help citizens to receive services more easily and timely?

- Does e-government improve the quality of service in the government institutions? Does e-government stimulate trade and industry in the public sector?

- What is the effectiveness of e-government in a country such as Tanzania where the majority of its citizens do not receive electricity service therefore they do not have access to internet?

Research assumptions

This research is informed by the following assumptions: E-government improves service delivery and thus increases the chances that citizens will receive government services accurately and in a timely manner. Does this assumption have a reality based on the Tanzanian community?

Then, there are vivid examples from various countries such as United States of America, South Africa, and Rwanda showing that e-government minimizes costs of production for government organisations that provide services to citizen. This is also another assumption that this study seeks to prove by using TANESCO, which is a governmental institution, as a case study.

Significance of the study

E-government is a new phenomenon in the field of public administration. It is a new challenge to bureaucrats and citizens. It signals the use of ICT facilities in government's activities and requires new technological skills for both bureaucrats and citizens. ICT challenges the

traditional way of handling matters in private and public sectors as it allows for the simplification and facilitation of service delivery, customer relations and institutional communications.

The role of ICT is very useful in the field of business where e-business and e-banking are provided to customers for effective service deliveries. The introduction of ICT to government institutions, especially in Africa, faces many challenges such as poverty, illiteracy and poor infrastructure that are hindering the effectiveness of e-government in service delivery.

The results of this study may help the Tanzanian government to understand the position of its citizen's on online governmental services and their level of participation in e-government, to evaluate costs encountered when services are delivered through the internet as compared to manual activities, and to seize initiatives to expand the quality of e-government services.
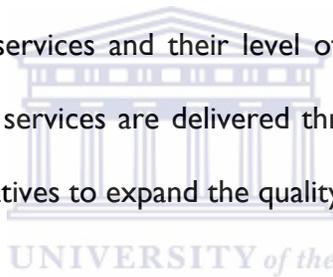
It is also the fact that there is little literature on e-government, especially in Africa. Research that has been done in the developed world lacks the specificities of the African context. This study therefore aims to bridge this knowledge gap for academics, bureaucrats, citizens and organizations dealing with governance, ICT and Development Studies who are interested in learning more about e-government in Africa.

Research methodology: The following section will cover issues related to research design; information on case study research; research pre-planning activities; methods of data collection; the process of data analysis; and the ethical aspects of the research.

Research design

Babbie and Mouton (2001) define a research design as a plan or blueprint of how you intend to conduct the research. It focuses on the end product, point of departure and the logic of the research. This means any research must develop a design that will guide the process of planning and execution during data collection.

According to Babbie (2007) before designing a study, a researcher must define the purpose of the project i.e. exploratory, descriptive or explanatory. An exploratory design occurs when a researcher examines a new interest or when the subject of study itself is relatively new; a descriptive design describes situations and events and; an explanatory design is useful in research that explains things. This study encompasses both qualitative and quantitative approaches and therefore comprises all three purposes that Babbie addresses.
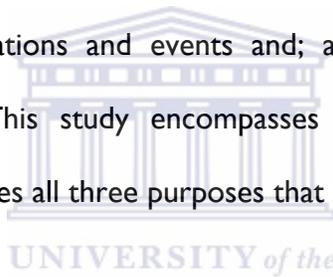
Neuman (2000) argues that qualitative and quantitative research both systematically collect and analyze empirical data and carefully examine the patterns in them to understand and explain social life. Differences between these two approaches in most cases are found during the process of collecting and analysing the required data and the research design. In many cases, these two approaches are found to be interrelated and when the study comprises both approaches it becomes more significant, influential and systematic.

The purpose of this study is to investigate the role of e-government in effective public service delivery. To achieve this purpose this research adopts a case study approach. The selected case study (TANESCO) is the sole electricity supply company in Tanzania. It is also a government agent and this factor makes it relevant to the notion of e-government.

A case study research

According to Creswell (1998) a case study can be regarded as an exploration or in-depth analysis of a 'bounded system' (bounded by time and/or place) or a single or multiple cases, over a period of time. On the other hand, Yin (1989) defines a case study as an empirical inquiry that investigates a contemporary phenomenon within its real-life context when the boundaries between the phenomenon and context are not clearly evident and where multiple source of evidence are used. Both Handel (1991) and Runyan (1982) agree that a case study is an intensive investigation of a single unit. They also argue that most case studies involve the examination of multiple variables.

De Vos, Strydom, Fouche and Delport (2002) propose that exploration and description of the case takes place through detailed, in-depth data collection methods, involving multiple sources of information that are rich in context. These can include interviews, document analysis, observation or archival records. Babbie (2001) points out that the case study researcher, in contrast with grounded theorists, seeks to enter the field with established knowledge of the relevant literature before conducting the field research.

According to Mark (1996) there are three types of case studies, all with different purposes. These are: the intrinsic case study that aims at gaining knowledge of the individual case, the instrumental case study which is used to elaborate on a theory or to gain a better understanding of a social issue, and the collective case study which furthers the understanding of the researcher about a social issue or population being studied. On the other hand Yin (1989) also identifies three types of case studies namely; exploratory, descriptive and explanatory. According to him, explanatory case studies often seek to

answer the 'what' questions; the descriptive case studies ask "what is going on" questions, while explanatory case studies seek to answer the "how" and "why" questions.

A case studies research design involves single case or multiple cases that a researcher studies. Stake (2005) and de Vaus (2001) agree with this notion and argue that when there is a single case a researcher concentrates on limited variables while multiple cases add more variables to be studied. Studying e-government based on a case study simplifies the process of data gathering and analysis. It also helps this study to have relevant information that may help in shaping ICT policy in a specific context – in this case, Tanzania.

Using the case study of TANESCO to examine e-government in Tanzania is uniquely relevant because of the relationship between electricity and e-government. One cannot operate a computer or other digital materials without a source of electrical power. By virtue of being the only electricity company in Tanzania, TANESCO therefore plays a big role in the broader success of e-business in Tanzania. This means that for many Tanzanians e-government would remain an unachieved dream especially when TANESCO is not operating to its fully capacity, when it is not expanding its services or when it is not effective in its day-to-day operations.

Research pre-planning

This study began with developing some questionnaires that reflected objectives of the research. The researcher reviewed various dissertations and accessed their research objectives in connection to their influence in choosing methods of data collection and how the chosen methods influenced the final findings of their research. It was learnt that most academic dissertations had questionnaires as the most central method of data collection.

This process also considered sampling techniques and it reviewed issues related to geographic area and demography. TANESCO, a case study of this research operates in 26 regions of Tanzania and currently it offers electricity to only 11% out of over 38 million Tanzanians. This means that since Tanzanian independence in 1961, about 90% of Tanzanians had never had electricity in their homes. TANESCO's service provision can be declared as ineffective based on this information alone. It needs to expand its service provision and must understand that in the world of ICT electricity is an important service, so much so that ICT proponents regard it as a human right.

This study was conducted in Dar es Salaam, a city of 162.5sq km with a population of 2,497,940. It was difficult to study this population because of factors such as time and financial constraints. The topic of this study itself was not familiar to many, especially those with inadequate ICT information, lack of education and low income. This study did not include a sample group of people residing in rural areas.
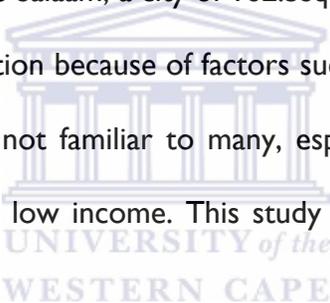
Methods that became relevant for this study were: questionnaire survey, interview, documentation and observation. In conducting the data collection process, sampling considered issues such as professions, gender, age and area of residence. The logic behind this design was to form a sample group that would answer all the research questions and provide suitable information for the study in a very limited time with minimal funds.

The questionnaire survey was done in a first phase where about 40 questionnaires were distributed to respondents and all of them returned for data analysis. The technique used to select these respondents was stratified random sampling.

Phase one: Questionnaire survey

Neuman (2000) explains that in conducting a survey a researcher follows a deductive approach. He or she begins with theoretical or applied research problem and ends with empirical measurement and data analysis. In the first phase the researcher develops an instrument i.e. a survey questionnaire or interview schedule that he or she uses to measure variables.

Before constructing a questionnaire for this research, issues that were considered were: types of respondents, nature of questions and responses needed, and time and privacy of respondents. The study comprised a type of mixed questionnaire including open-ended and closed-ended questions. This approach aimed at helping this study to get as much accurate information as possible.

The researcher provided the questionnaire to respondents and gave them the opportunity to ask questions when they did not understand. This helped very much because the research had terms that many people did not understand. A total number of 40 questionnaires were developed and distributed. The best way of applying the questionnaire was for the researcher to ask respondents the questions and fill out their answers on the questionnaire himself. This helped the process of getting all the questionnaires back in time but it was very labour and time intensive for the researcher.

Phase two: Interviews

This form of data collection seeks to establish the community's understanding of e-governance and how it influences aspects of good governance such as transparency, accountability, participation and responsiveness. To achieve this objective the study chose its sample based on

profession and experience in the community. The three interviews secured were with an ICT expert from the Bank of Tanzania (BoT), the former Chief Minister of the Revolutionary Government of Zanzibar and the TANESCO's Legal Officer.

The main questions asked to interviewees were:

- Does e-government contribute to cost cutting in public sector?

- Does e-government improve service delivery to citizens?

- Does e-government help citizens to receive services easily and timely?

- Does e-government improve the quality of service in public institutions?

- Does e-government stimulate trade and industry in public sector?

- What is the effectiveness of e-government in a country such as Tanzania where the majority of its citizens do not receive electricity service as a source of power?
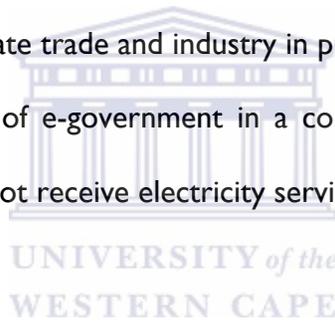
During the interview process, the interviewer raised the question then let the respondent reply. In most cases the interviewer controlled the interview process by guiding responses to stay within the confines of information needed for the study. All the interviewees were recorded using digital voice recorder with consent from respondents. Also, the interviewer took some notes during the interview process.

Languages for communication were Swahili and English. Respondents preferred using Swahili language because it is their mother tongue and also the national language of Tanzania. Some interviewees mixed the two languages especially when they wanted to explain technical terms.

It was easy for a researcher to understand all the interviews because the researcher himself is fluent in both languages and Tanzania is his home country.

After conducting all the interviews, the next step was to transcribe all the information in order to ensure that all the required information was gathered. The following stage was to identify key themes which were noted by interviewees. These themes are discussed in chapters four and six which detail the findings of this research project.

Phase Three

a) Participant observation

The third phase of this study involved the participant observation approach. Through this stage, the researcher himself got the opportunity to observe some activities that TANESCO conducts and associate them with the study. The observation process only regarded electricity service delivery and not electricity generation activities within TANESCO.

Services such as electricity applications, bill payments, customer care services, mass communications and TANESCO's internal activities were observed linked with the notion of e-government. The idea was to countercheck if e-government is useful in this organization or how e-government can influence effective electricity delivery. I considered things like the duration of time that a customer must wait until getting electricity (new customers), approaches towards sending bills to customers, bill payments and customer relations.

The researcher observed and evaluated online services that TANESCO has and comparing them with manual services. This comparison helped to measure issues related to efficiency and

effectiveness in delivering services. Also it looked for things like cost, time and public engagement in using online services compared with traditional manual services.

b) Documentations

In order to get more information from policies or legislative frameworks this research also analyzed some documents from government departments and revisited some government websites to see how e-government is operating in Tanzania. The researcher visited various Tanzanians government (and some subsidiary agency) websites to see how effective their portals and websites are operating. The idea was to generate information concerning the role of e-government in Tanzania. The experience that the researcher got was very useful for the success of this study and is incorporated in chapter five.
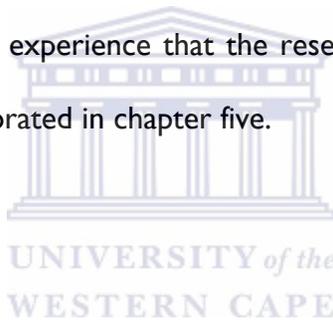
Ethical aspects

Babbie and Mouton (2001) argue that ethics in research is the most important principle that guides the relationship between the researcher and his respondents. It also helps the researcher to maintain objectivity and integrity during the process of conducting scientific research.

This study observes the conventional procedures of ethical research: *informed consent* means the researcher obtained the permission from the respondents after they are thoroughly and truthfully informed about the purpose of the interview and the investigation; the *right to withdraw* from the research at any time without any consequence to them is made clear; *right to privacy*, under which all the respondents were assured of their right of privacy i.e. maintains their anonymity when necessary; and the matter of academic or intellectual property rights

under which this study uses other people's data or ideas with due acknowledgement and permission where appropriate.

Methods of data analysis

Once all the questionnaires, interviews, observation and documentation had been completed, the researcher assigned reference numbers to questionnaires and then the process of data analysis started. With the help of SPSS spreadsheet the data analysis process was carried out and frequencies and percentages showing how respondents answered each question were generated.

The second phase of this study was based on qualitative method. Marshal (1996) argues that qualitative studies pursue a more humanistic approach aimed at answering complex issues. Additionally, Smith and Osborn (2003) explain that many researchers use qualitative approach when they need to gather detailed information about the perception and understanding of a particular group rather than make general claims.

In this stage, the researcher selected some people for interview purposes. Criteria for sample selection are explained above. This method focused on some potential respondents that would add valuable data to the study based on their skills, influence or positions in the organisation. Most of the questions asked were those associated with ICT technical matters and TANESCO's organisation structure. Then, the researcher transcribed all the information gathered during interviews and associated them with the data gathered through observations and documentations. The next step was to categorise the available themes based on the research questions and objectives. These themes and discussions are found in chapter five.

Thesis structure

This study comprises six chapters. Chapter one introduces the study, covering issues related to the rationale of the research: chapter one indicates the difficulties faced during the research process and limitations of this study. These limitations may help other researchers who are eager to conduct a study similar to this to perform their work in a more directed and systematic way.

Chapter two analyses theories used for this study and indicates some lessons offered from literature reviewed. In this chapter the discussion is based on globalization theory, bureaucracy theory and dependency theory. All three theories help this study to meet its objectives. They help to link issues related to technological advancement, service delivery (electricity), community understanding and participation. The next section of the literature review explains in detail the essence of e-government, its mode of delivery and its general understanding and practice in the world.

The notion of e-government and its experience in Africa is discussed in chapter three. Some cases are selected to show how e-government is effective in Africa. The example countries are Mauritius, Rwanda and Ethiopia. Through these cases we explore e-government challenges that Africa faces and opportunities available for further consideration. The chapter concludes by indicating some lessons that Tanzania could learn from these African cases.

Chapter four is comprised of two parts: part one discusses the experience of e-governance in Tanzania; and part two details the lessons from a case study TANESCO. This chapter demonstrates the fieldwork that the researcher has done after collecting some documentation,

legislative framework assessments, interviews and some observation from various government websites. The experience shows that e-government is still in its early stages of development in Tanzania. Some work should be done to make it more effective, even though the country has many challenges such as poverty and high computer illiteracy rate.

Chapter five details the analytical framework for understanding e-government in Tanzania. This chapter covers research responses on various issues related to e-governance in Tanzania and a case study (TANESCO).

The last chapter of this study describes the conclusions and recommendations of this study. It illustrates some areas for further research and recommends how to policy makers should adjust, change and adopt ICT initiatives that may help to minimize red-tape, and bring efficiency in serving citizens.

Limitations of the study

This study derives its findings from a particular case study in a specific area and does not claim to represent the entire population of Tanzania. For instance the case study itself (TANESCO) has branches countrywide and it is difficult to study them all in a short period of time. Respondents that contributed to this study are regarded as representatives of many citizens but their understanding does not mean that all Tanzanians understand things the same way.

This study has been completed with very limited funding with and no support from external "forces". Insufficient research funds hinder results to some extent as it can limit the number of respondents that can be reached, the geographical area that can be covered by the research and the time available for carrying out the study. This study was also somewhat constrained by

the time limitations of the academic year and degree. Apart from these limitations, the researcher tried his level best to conduct a study that adhered to the requisites of scientific research.

CHAPTER TWO

THEORETICAL PERSPECTIVES ON E-GOVERNMENT

Introduction

This chapter discusses the three main theories that inform this study, namely; globalisation, bureaucracy and dependency. These theories were selected based on their connection to the study objectives and their impact towards the effect of e-government.

The next part of this chapter conceptualizes e-government; it also links e-government and service delivery and demarcates e-government models of service delivery. The importance of e-government is also discussed in this chapter.
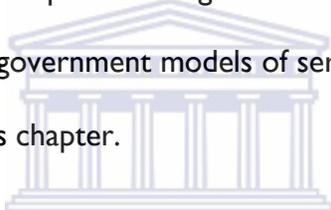
Background on theoretical perspective in e-government

E-government may enable governments to improve their processes of service delivery. This can happen when governments agree to utilize e-government initiatives in their day to day activities. It is therefore the role of the government to furnish its citizens with ICT knowledge, facilitate their access to digital equipments such as computers, and advocate their usage in simplifying service delivery. However, certain goals, such as making internet accessible to all citizens may be the duty of both the public and private sectors.

The relationship between citizens and governments in this regard may be explained through various theories. The three that concern us here are the *bureaucracy theory* which describes the roles and relations between citizens and bureaucrats; the *theory of globalization* that examines

the emergence of the global cultural system; and the *dependency theory* that addresses conflicts between wealthy and poor countries.

These theories try to show the need for governments to engage its citizens and they describe the role of the citizens in solving their problems. Troxel (1995) suggests that governments must act in a more customer-oriented manner by recognizing that citizens can never be content with being mere customers; they are owners as well. Similar to this analysis there is also the perception that the public should be viewed by the government as customers, clients and citizens (Kamarck, 2000).

This is to say, governments must acknowledge successes that the private sector has achieved through using electronic services. These successes are necessary in developing a new relationship between bureaucrats and citizens because, electronic services bring the government closer to people and make it people centered.

Globalization theory

Through globalization[12] the world is becoming borderless and with e-government the relation between bureaucrats and citizens becomes more open, with no time and geographical limitations. Waters (1995) argues that globalization has created a social process in which the constraints of geography on social and cultural arrangements recede and in which people are becoming increasingly aware that they are receding.

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[12] Globalization is a phenomenon involving the integration of economies, cultures, governmental policies, and political movements around the world: Retrived from http://www.britannica.com/EBchecked/topic/755509/globalization

This means that, citizens can easily be informed on what the government plans to do, and they can participate in every step of their development regardless of their geographical borders. Shaw (2000) argues that the high level of computer technology and the digitalization[13] has allowed for a shift from internationalism theory to globalization. According to him globalization stretches human social relations, brings change in behaviour, in economy, in politics and in the traditional way of doing things.

Radice (2004) in his definition of globalization argues that there is a close relationship between the theory of globalization and internationalism[14]. He explains that, globalization theory expands from the theory of internationalisms by using ICT in its functions. Uses of ICT increase the proportion of economic, social and cultural transaction taking place directly or indirectly between parties in different countries.

Internationalism theory discusses the role of big countries such as United States in controlling poor nations just because they have wealth, technology and military power. But in globalization theory, the world is united and becomes a single village. Services that made people travel long distances, are now available through the internet. Internet brings a need for change in the field

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[13] Digitalization means translating information into a universal binary code, any kind of communication can be handled through time and space by the same medium and transmitted through its infrastructure, text, drawing, pictures, sounds and speech, video are transmitted through digital network. Through digital communication is no longer one-to-one but one to many (Schonberger and Hurley, 2000).

[14] Internationalism is a foreign policy doctrine that argues that states should intervene in other sovereign states in order to pursue liberal objectives. Such intervention includes military intervention and humanitarian aid. This view is contrasted to isolationist, realist, or non-interventionist foreign policy doctrines, which oppose such interventionInternationalism emerged during the second decade of the 20th century under the auspices of U.S. President Woodrow Wilson. The majority of Wilson's "Fourteen Points" failed to be included in the Treaty of Versailles, except for the formation of the League of Nations retrieved from http://en.wikipedia.org/wiki/Liberal_internationalism

of public administration and it facilitates the process of expanding services to citizens. Woods (2003) realizes the need for political and economic liberalization adhering to the ICT revolution and advocates economic, political and social changes among communities.

One of the changes that Woods discusses is the use of e-government in governments' activities. According to him, e-government stimulates good relationship between citizens and civil servants; it makes governments more accountable to its people and it simplifies governmental works, minimizes costs and control time framework. The reality is, citizens do not loose touch with government activities and the governments do not loose their power when e-government is used properly.

Baylis and Smith (1997) argue that globalization is an ongoing trend whereby the world has in many respects, at an accelerating rate become one relatively borderless social sphere. Global phenomena can extend across the world at the same time and can move between places in no time; they are in this sense supra-territorial. The notion of the world being borderless creates the expansion of democracy and other governance aspects as O' Loughlin (2004) suggests. This means citizens have more influence in their day to day choices and solutions of their problems. Farnsworth (2004) represents the group of scholars who embrace globalization by considering its political and economic offerings as a factor for greater economic development and equality. He argues that globalisation is a source of international political solidarity.

Kamarck (2000) argues that, globalization has caused public administration reforms in many countries. Factors that influenced these reforms are: the global economic competition, democratization, the information revolution and the performance deficit. Now governments in

the world expand their services by using digital processes. Digitalization itself has shown a lot of benefits in day to day activities of governments (ibid).

The use of digital facilities and internet services has influenced many to agree that they are remarkable components of globalization. Schonberger and Hurley (2000) argue that there is no doubt that global networks supplement international trade and economic globalization, as they lower the cross-border transaction costs for advertising, marketing and ordering. This is what e-government should do for citizens and it is one of the factors that e-government initiatives have to convince governments to acknowledge its benefits, especially effecting greater efficiency and effectiveness levels in governments.

Globalization theory has a direct relation with this study. It influences issues such as: the use of digital facilities; the influence of globalization on different aspects of people's lives and the impact of ICT with regard to efficiency in service delivery. This theory searches for changes and it acknowledges that the world is not stagnant. The theory stresses that country borders may influence the qualities of human life but globalisation allows for the improvement of the human condition.

It is easy to see how the theory of globalisation affects to Tanzania with regard to ICT. Tanzania has expanded its ICT infrastructures and introduced many digital facilities. Uses of ICT equipments have already shown some positive impacts in Tanzanian private sector and in the government as well. Tanzanians are nowadays linked with people outside their country through trade, tourism and education. Still a lot should be done in order for Tanzanians to compete with people outside their country in this era of globalisation. The country needs more skilled

ICT personnel's, needs to expand its ICT infrastructure and also to expand services such as electricity to its citizens.

Bureaucracy theory

The theory of bureaucracy was formulated by a German Philosopher Max Weber (1864-1920). According to McLean (1996), this theory addresses the role of bureaucrats as permanent workers in public offices and elected officials in connection with rules that govern the hierarchical office in which appointment and promotion are based on merit. This theory assumes decisions are rational and are not based on patronage.

Marshall (1998) argues that bureaucracy includes a body of administrative officials, the procedures and tasks involved in a particular system of administration. Often, bureaucracy is the key in administering the public and private sectors. It stipulates the duties and roles of each official in the system of administration and it describes their responsibilities. Bureaucracy also provides the relationship between bureaucrats and citizens by showing steps to be followed in performing duties.

According to Andreski (1984), there are four distinct meanings which can be attached to the term bureaucracy. These refer to the set of people who perform the administrative functions in the manner described by Weber; the network of relationships in which they are enmeshed; the amount of power they wield as a body and the various kinds of malfunctioning of the administrative machine. This relationship and power dissemination in the government machine functions effectively when citizens' problems are solved. Bureaucrats always find best alternatives that simplify their duties and maintaining quality in their performance. It is in this

regard where e-government provides another alternative route towards increasing efficiency in public sector.

Cordella (2007) raises issues related to the old Max Weber bureaucracy theory and critically analyses best ways that the theory may be utilized to influence bureaucrats towards accommodating challenges that e-government brings to the public administration. He argues that, ICTs are not only tools to transform bureaucracies in market-oriented organizations, but are tools to support bureaucratic administration functions. The implementations of ICTs to automate existing administrative procedures improve organizational outputs.

Weber (1947) argues that the goal of bureaucracies and subsequently of bureaucratic organization was to maximize efficiency. Then, bureaucracies are instruments of administration that are technically efficient because institutionalized rules and regulations enable all employees to perform their duties optimally. In the world of today, bureaucrats use ICT tools to increase efficiency and be more effective in performing their day to day activities.

Peters, (2001) argues that democratic states have created bureaucratic institutions because their articulated values are extremely powerful for enforcing impartiality and equality of citizens in front of the state and its apparatus. This has made the organizational principles uncovered by Weber as instruments to maximise organizational efficiency, also valuable as fundamental principles to mediate the relationships between citizens and the state in democratic regimes.

Even during this time where democratic states are struggling to take advantage of the benefits offered by potentials of e-government in service delivery, still the role of bureaucracy cannot be neglected in the formulation of policies that aim at reforming institutions the mediated by public

administrators. The relationship between citizens and public administrators is mediated by the offices of the public administrators and therefore by the civil servants who provide the services. The administrative rationality and impartiality of the administrative actions are only enforced if they become internalised in and inform the actions of public servants as they provide the services to citizens (Merton, 1968).

Nohria and Berkley (1994) argue that the implementation of ICTs to automate existing administrative procedures can improve the administrative system's efficiency and effectiveness without changing its underpinning logic. This means e-government contributes towards achieving principles of Weberian theory in maximum efficiency. The old system of bureaucracy based on paper work is now simplified by using softcopies and other computer technologies to reduce the time and cost undertaken when serving citizens.

Kallinikos (2006) argues that it is interesting to study the failure of bureaucratic systems in delivering public services using the ideas proposed by transaction cost theory. Following transaction cost economics, we suggest that where bureaucracies have failed to deliver services effectively it is because they have not been able to handle the increasing amount of information and coordinating activities that are nowadays needed to provide traditional public services. Modern societies require multiple services and it is in this sense that e-government can play a pivotal role. This means that the effectiveness of e-governance depends heavily on changes to the bureaucracy and the bureaucrats (people working in that system). If the system may set its values or policies but without changes in bureaucrats attitude and understanding, there will be no achievement. A point to note here is that the bureaucratic organisation is a fundamental guarantor of equal and impartial action by public administration and hence enforces democratic

values (Frederickson, 2000; Aberbach and Christensen, 2005). Hence the question: do e-government initiatives help bureaucratic institutions to enforce these democratic values?

Almost all the governments around the developed world have envisioned ICTs as powerful instruments to improve the quality of the services provided to citizens and businesses and to rationalise the internal organisation of the administrative apparatus. These new administrative apparatus embed ideas that contrast with the traditional administrative practices that have historically been driven by assumptions of bureaucratic efficiency, and also of democracy: the delivery of public services according to principles of impersonality, equality and fairness (du Gay, 1994).

This radical change in NPM[15] has several manifestations, but most typically it is a management theory about how to reform government by replacing rigid hierarchical organizational structures with more dynamic networks of small organizational units; replacing authoritarian, top-down decision and policy-making practices with a more consensual, bottom up approach which facilitates the participation of as many stakeholders as possible, especially ordinary citizens; adopting a more 'customer'-oriented attitude to public services, and applying market principles to enhance efficiency and productivity (Pollit and Bouchaert, 2004).

The enforcement of these prescriptive values is done according to Weberian bureaucratic thought (Weber, 1947) and strengthened by three key features of bureaucratic organizations (Kallinikos, 2006). In first place, bureaucracies have a formal and explicit hierarchical structure of authority. In the second place, bureaucracies have a detailed, rationalized division of labour. Thirdly, bureaucracies are governed by a set of formal, explicit, comprehensive and stable set of

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[15] Means new public administration

rules that are impersonally enforced in decision-making. Moreover, a fundamental stance of bureaucratic systems is the separation of the functions in the organisation from the person entitled to exercise that organisational function.

Bureaucracy theory therefore, is important in this study as it shows the need for bureaucrats to acknowledge and apply changes that make them effective when serving citizens. The theory is useful as it provides citizen with an option of using ICT facilities in requesting, asking, or applying for government services.

For the case of TANESCO, the theory suggests the need for this government institution to expand its productivity, maximize efficiency and effectiveness when serving its customers. It also advocates minimizing unnecessary costs of production that may be incurred based on the bureaucracy that is not aware of the negative outcome of the red-tape.
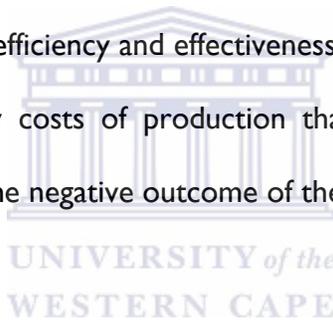
Dependency theory

Dependency theory is a theory of economic, social and political change which attempts to explain the continuing poverty, deprived social conditions and political instability of many poor countries in terms of their dominance by rich and powerful countries (Jary & Julia: 2000). The major contribution to the dependency theory was undoubtedly that of Frank[16], a German economist of development who devised and popularized the phrase 'the development of

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[16] Andre Gunder Frank was born in Berlin, February 24, 1929 –and died in Luxembourg, April 23, 2005. He was a German-American economic historian and sociologist who was one of the founders of the Dependency theory and the World Systems Theory in the 1960s. He employed some marxian concepts on political economy, but rejected Marx's stages of history, and economic history generally. Also visit http://en.wikipedia.org/wiki/Andre_Gunder_Frank

underdevelopment', describing what he saw as the deformed and dependent economies of the peripheral states, in his terminology the 'satellites' of the more advanced 'metropolises'.

Frank developed this theory in Latin America during 1950s in opposition to the prevailing orthodoxy that third world countries could achieve modernization and industrialization by following the examples of the already industrialized. He argues that third world problems were created by the colonial and trade dominance of Europe and the US and insists that growth could only be achieved by severing ties with capitalism and pursuing auto-centric development strategies (Marshall, 1998).

In his book 'Capitalism and underdevelopment in Latin America' (1967) Frank argues that external mechanisms enjoy control exerted by the centre (or metro pole) upon the periphery (or satellite). The centre maintained the periphery in a stage of underdevelopment for purposes of super exploitation. This idea is well supported by Gramsci (1881-1987) with his hegemony theory[17] and Said (1935-2003) orientalism[18].

Gramsci in his theory emphasizes how wealth countries dominate over the poor, resulting in underdevelopment. Gramsci and Said both understand the need for change of power and

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[17] Hegemony is the philosophic and sociological concept, originated by the Marxist philosopher Antonio Gramsci, denoting that a culturally-diverse society can be ruled (dominated), by one of its social classes. It is the dominance of one social group over another, i.e. the ruling class over all other classes. The ideas of the ruling class come to be seen as the norm, the universal ideologies that benefit everyone whilst only really benefiting the capitalist class. Also see http://en.wikipedia.org/wiki/Cultural_hegemony

[18] Orientalism is the tendency of western countries led by the US to stereotype Arabs or Muslims that are prone to violence, incapable of rational thought, untrustworthy, devious, and unclean also see Andrew J Rotter (200) Saidism without Said: The American Historical Review Vol 105 no 4 retrieved from http://www.historycooperative.org/journals/ahr/105.4/ah001205.html

dominance that big countries exercise over poor nations. Frank and Marx (1818-1883) both advocate a socialist revolution as the solution for underdevelopment.

This theory is vital in this study as it describes the contradiction between wealthy countries vs. poor nations. It also shows conflicts between rich and poor people within states. Through this theory one may ask, is e-government a solution for poor people's dependency or it is another form of exploitation?

Tony Blair[19] argues that there is a connection between e-government and bringing the government close to people (Kamarck & Nye, 2002). But this may be untrue especially for poor and marginalized communities. E-government may be bringing another form of dominance where big powers control the weak societies. This control in most cases affects communities with no access to internet, those who are computer illiterate and those who live in places where ICT infrastructure is poor or is not available. Additionally, e-government may also be an instrument that pushes marginalized communities very far away from the government activities.

However, the argument that e-government plays a part in marginalizing some communities, may also be opposed with the idea that, e-government is not the only solution that provides efficiency in government activities. It is just an enabler that supports bureaucrats to function better and minimize their level of dependency especially in areas where the red-tape is very high.

Dependency is an old theory which is useful in this study as it marks important conflicts exists in societies. Examples of these conflicts are: poor against rich, educated against illiterate, urban

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[19] Tonny Blair was a former British Prime Minister (He served from 2 May 1997 to 27 June 2007)

dwellers vs. rural people, and rulers against ruled. All these classes have equal share in receiving government services but the experience has shown that, groups such as the poor, the illiterate and those living in rural areas receive little attention from governments' services.

In Tanzania for instance, achieving the aims of e-government there is a need to put special attention in relation to groups such as the poor, the elders, the uneducated, and those living in rural areas. Other aspects needing alternatives are: expanding the ICT infrastructure, decrease of price in internet services, and expand of computer skills training to citizens. If all of these are not well done, the results might be that, e-government enlarges the dependency among communities in Tanzania.

Conceptualizing e-government

Fountain (2002) argues that technology is a catalyst for social, economic and political change at the levels of the individual, group, organization and institution (cited in Kraemer & King, 2005)." Kraemer and King, (2005) argue that information technology influences administrative reforms. These reforms are regarded as efforts to bring about dramatic change or transformation in government such as a more responsive administrative structure, greater rationality and efficiency, or better service delivery to citizens.

Based on review of research on e-government (Fountain, 2001, 2002; Holden, 2003; Holden et al., 2003; Kaylor et al., 2001; Layne and Lee, 2001; Moon, 2002; Norris and Moon, 2005; Norris, 2005, 2006), it would appear this trend will continue into the foreseeable future. For example, Fountain (2002) initially assumed that the Internet "would overwhelm organizational forms and individual resistance and would lead to rapid organizational change."

This study explores that change and focuses on the relationship between e-government and effective service delivery. This chapter reveals challenges and fundamental impacts that e-government faces and explains how various countries have incorporated it for the sake of fastening, increasing and expanding the processes service delivery.

West (2004) argues that governments around the world have created websites that facilitate tourism, citizen complaints, and business investment. Tourists can book hotels through the government websites of many Caribbean and Pacific island countries. In Australia, citizens can register government complaints through agency websites. Nations such as Bulgaria, the Netherlands, and the Czech Republic are attracting overseas investors through their websites.

Countries such as the United States, Sweden and Britain use IT technology as a tool for social change (Norris & Curtice, 2006). The positive experience is also visible in poorer countries with relatively high levels of ICTs, such as Malaysia and Brazil.

Kraemer and King (2005) argue that IT technology has changed the field of public administration in the United States markedly. By 2002, 67% of adults using the Internet had visited a government website: 57% a federal site; 54% a state site; and 42% a local site (Dean, 2002). Nearly all federal agencies and most state governments provide some information or services on the web (Fountain, 2001). The vast majority of city and county governments (95%) had websites in 2004 (Norris, 2006), many offering non financial services (requests for services, government records, maps) and less than 10% offering financial services such as paying taxes, utility bills, parking tickets and licenses/permits (Norris and Moon, 2005; Norris, 2006).

The experience from Asia and Pacific region creates a challenge view in achieving e-government objectives. Bastle (2005) argues that few governments have implemented e-government strategically directly targeting poor people. This is despite the fact that more than 60 per cent of the population in the Asian and Pacific region lives in rural areas and the majority of them are poor.

If implemented strategically, e-government services for the poor are a way for governments to reach the yet un-reached with government services and hereby contributing to poverty reduction in rural and remote areas. This means e-government is not only enabling governments to reach out to marginalized groups, communities and meet citizens' expectations through providing e-government services; but as be able to involve and empower these groups through their participation in the political process.

An important thing to consider is that Schellong (2007) identifies as effects of ICT initiatives. These initiatives are usually cost reductions, better information sharing, reduction of processing time due to parallel instead of sequential working, overall efficiency gains, new forms of shared service delivery and higher citizen satisfaction. Underlying outcomes are transparency, changes to internal and external accountability and control.

E-government and service delivery

West (2004) clarifies that for e-government service delivery to the effective, we look at the number and type of online services offered. Features are defined as services only if the entire transaction can occur online. If a citizen has to print out a form and then mail it back to the

agency to obtain the service, we do not count that as a service that can be fully executed online (ibid).

Searchable databases count as services only if they involve accessing information that results in a specific government service response. Of all the websites examined around the world, however, 21 percent offer services that are fully executable online, which is up from 16 percent in 2003 and 12 percent in 2002. Of this group, 11 percent offer one service, four percent have two services and six percent have three or more services. Seventy-nine percent have no online services.

On the other side, Norris and Curtice (2006) argue that the internet also serves as an aid to good governance and transparency. Effective service delivery is one among the key issues in aspects of good governance. There are positive governance impacts from the internet which can be used to link e-government, citizens and the government. This relationship can be traced out on issues related to service delivery: like the method of requesting services, citizens making suggestions and effective information about services from governmental institutions.

A good analysis about the impact of e-government in service delivery is that by Brynard (2002) described in Kuye, Thornhill & Fourie (2002). In this work, Brynard argues that "for the government institution itself: an e-government framework creates a huge potential for improving the quality of service, stimulating trade and industry and cutting costs internally. The work of employees of the institution is made more interesting because employees' electronic work stations draw together the different information that they need. The people and organizations with which the government institution deals will benefit directly from improved knowledge, product and service offerings."

E-government models of delivery

Brynard (2002) explains that e-government on the internet could handle all the government scenarios: government-to-citizen (G2C), government-to-business (G2B), and government-to-government (G2G). In other cases, these three scenarios are called primary delivery models of e-governance (Kitaw, 2006). Kitaw derives a direct association of those models with improvement in efficiency, better accessibility of public services and better processes for democratic governance.

The G2C model represents all activities that the government may send or direct to citizens. In this model, citizens are just receivers and the government remains as the sender. Government websites and portals are good example of the G2C model as in many cases provide information directly to the public or information with public interest.
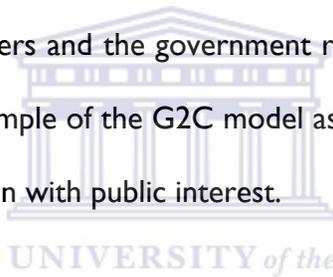
The G2G model represents activities done within the government as an institution in connection with its agencies. These activities may be internal memo, e-mails, security information and other internal orders and activities.

The G2B model represents business activities that the government and its agencies may be conducting. A good example is governmental procurements, tenders, projects, taxes, banking and payable services. This model comprises business activities in government and it helps citizens and private companies who are interested in offering their services directly to the government and its agencies.

Importance of e-government

An important point to consider before discussing e-governance opportunities is that 'e-government is an enabler not a solution' towards service delivery. E-government could help to enable success in various programmes but itself cannot stand as solution towards success. In banking for instance, e-banking enables customers to make online business but the effectiveness of these online transactions depends heavily on policies and strategies that different banks have.

In Africa, e-government has various opportunities and these may be categorized in various aspects such as; social, economic, political and cultural factors. To start with social aspects; e-government contributes to effective deliveries in areas such as health, education and citizens/government communication. Economically, e-government has already shown some usefulness in controlling government expenditures. According to Kamarck (2000), Burkina Faso has a computerized system that tracks every stage in the expenditure process from commitment to actual payout. Also, citizens may invest in with the government or pay their bills online.

Politically, e-government is utilized in terms of: applying for Citizenship Identities ie in Rwanda, driver's license in South Africa, Passports in Kenya, Visa or other Business licenses administered by government agencies in Mauritius. Also issues in governance processes may also be utilized through e-governance. One which has already gained importance is electronic voting. E-voting in South Africa for instance has proved to be effectively, timely and the answer to free and fair elections.

Also e-government has direct impacts on cost effectiveness and efficiency of governments, empowers citizens and improves government-citizens relationships especially with those in remote rural areas. Experience from Kenya shows that farmers seeks informations for their crops market using mobile phones before travelling a long journey from rural areas to townships. However, the expected benefits on efficiency are only possible if and when profound transformations in administrative processes occur with the adoption of ICTs rather than attempting to automate flawed and cumbersome processes without re-engineering them. As such, e-government can just facilitate change towards new efficient processes, but will not remedy all inefficiencies and corruption related problems.

Other important (but less direct) effects include greater transparency and accountability, (consequently reduce the opportunities for corruption) and the adoption/strengthening of democratic processes. It is easy today for citizens to access government information through internet and this makes them aware of government plans, policies and other development decisions.

Culturally, e-government has the ability to stimulate the emergence of an Africa adapted cyber-culture and hasten ICT literacy, hence encourage the development of ICT4D applications.

CHAPTER THREE

E-GOVERNMENT CASES FROM AFRICA

Introduction

This chapter discusses the concept of e-government and its experience in Africa. Some cases are selected to show the impact of e-government in this continent. The selected countries are: Mauritius, Rwanda and Ethiopia. Through these cases it is possible to trace challenges and opportunities that e-government faces in Africa.

The concept of e-government in Africa
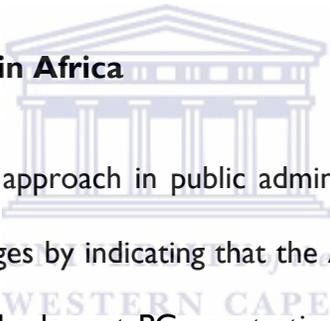
In Africa, e-government as a new approach in public administration faces many of challenges. Kitaw (2006) reveals these challenges by indicating that the African continent has 40% illiteracy rate for its adult population, has the lowest PC penetration in the world with 2,2 computers per 100 inhabitants, has the highest Internet tariffs in the world, where there are only 2,7 telephones per 100 inhabitants, political instability is widespread, most of its governments are autocratic and perceived as corrupt, the culture of democracy is not fully embraced and millions of citizens are not empowered to know the decision making processes of their government. Based on these critical challenges, Kitaw explains that, there are many difficulties to be faced before achieving the effective role of e-government in Africa.

The Global E-Government Readiness Report (2005) conducted by the United Nations Department of Economic and Social Affairs, found Africa as the last continent in e-government readiness. This report explains that achieving e-government in Africa is hard because the

continent has poor telecommunication infrastructure and human development capacity, factors which are potential in facilitating effective e-government.

On the other hand, Schellong (2007) finds that, 50% of telephone lines are in major cities and 90% of Africa's overall telephone network is located in South Africa. Mobile phone penetration is now about 9% compared to an internet penetration of 2.6% [25]. Morocco's mobile phone penetration was 24 per 100 inhabitants in 2004, while fixed line penetration remained unchanged at its 1995 level (4 per 100 inhabitants) [35].

Indeed, Researchers of London Business School found that, in a typical developing country, a rise of ten mobile phones per 100 people boosts GDP growth by 0.6 percentage points [15]. So it might be mobile phones, rather than e-government which offers quicker and broader benefits to citizens, businesses and governments in developing countries (cited in Schellong, 2007).

It is a matter of fact that Africa has a long way to go in order to build the successful base of e-government. The continent faces various governance issues such as a big number of illiteracy rate and weak telecommunication infrastructure. Kitaw (2006) argues that low literacy rate is a serious impediment to the adoption of e-government in Africa and it hinders the accessibility of service delivery to citizens in the continent.

Findings obtained in the year 2000 shows that 136 million of adults in Africa cannot read or write. The UNESCO Global Monitoring report indicates that Sub-Saharan Africa has one of the world's lowest adult literacy rates, with only 60% of the population of 15 and over able to read and write in 2000, well below the world average of 80%.

Another challenge that the African continent faces is poor telecommunication infrastructure. For e-government to be applicable, telecommunication infrastructure must be developed. These infrastructures include: phones, computers and internet satellites and other digital materials (ibid).

The economy of the continent is not able to support the infrastructure networks as they are expensive and the continent has priorities such as social services like health, education, water provision and housing to take care of. The World Telecommunication Development Report (2006) indicates that Africa has 13% of the world population but the continent has only 2% of world's telephone mainlines, 1.5% of the total number of PCs and 1% of Internet users. Moreover, cases of power outages disrupting the availability of the Internet and email are many.

ICT infrastructure is a key determinant of development in the knowledge era. Africa has lagged behind in the past century in that regard. This trend needs to be reversed by intensifying heavy investments on infrastructure in this crucial period where Africans need to catch and capitalize on the opportunities offered by ICTs.

The best way to examine the role of e-government in Africa is to trace the real practice from some African countries. Some African countries have remarkable experiences in e-government while others are still in initial stages.

A case of Mauritius

The Global E-government Readiness Report 2005, a study conducted by the United Nations Department of Economic and Social Affairs, shows Mauritius as the leading country in Africa in terms of readiness for e-government in its institutions. Like other African countries, Mauritius

has developed its country portal at www.gov.mu, under which information such as, transaction-bases service, information to citizens, businesses, civil servants and tourists are provided. The country also enjoys a relatively high Human Development Index (0.800) with an adult literacy rate of 84.4%. Since 2006, Mauritius is listed among the countries with High Human Development index.

In the 2006 Human Development Report by the United Nations Development Program (UNDP), Mauritius was ranked 63 out of 177 countries, just behind Romania and Malaysia. It ranks second among African countries (Seychelles ranks first). 85 % of the adult population can read and write; which is an impressive literacy rate that impacts on adoption of e-government application in the country.

The government of Mauritius has been conscious since early 1990 of the importance of ICTs in socio-economic development. An ICT promotion agency was set up and the way to e-government was initiated in 1996 with projects to put all Ministries on the web, thereby giving online access to new acts, publications and events. Mauritius also enjoys the highest rate in Africa of ICT penetration in businesses. The 2001 figures demonstrate a high PC ownership by companies and online presence suggesting a greater potential for adoption of electronic based tax collection for businesses. The government has initiated numerous projects to pave the way for e-government, the Contribution Network Project being one of them.

The Contribution Network Project (CNP) in Mauritius is a Government-to-Business (G2B) initiative of the Ministry of Finance that allows electronic payment of tax for all large employers in the country. Through an exemplary public-private sector partnership, the project has set up secured networks and ICT applications allowing a fully effective and efficient electronic tax

collection in Mauritius. Through the CNP network, tax payers, government revenue departments and commercial banks are connected. Interactions are conducted through the EDI software or the Internet.

The government portal at www.gov.mu aims to be the one-stop-shop providing comprehensive information and delivering integrated government services. This website offers a gateway of information for citizens, businesses, tourists and other government agencies.

Rwanda's experience

In 1994, Rwanda faced a most terrifying genocide which destroyed almost everything the country developed since its independence from Belgium in 1962. About 100,000 people lost their lives and many became refugees. Reconstruction started again in 1995, and since then, the country has demonstrated profound recovery.

The 2002 General Census of Population and Habitat (RGPH) showed Rwanda to have 8,648,248 people, but today, the country has an estimated number of 10.1 million people. Rwanda has only 322 persons per square km. According to the CIA 2006 fact book, Rwanda has a literacy rate of 70.4% and the country's economy depends heavily on agriculture, the sector that employs about 88% of Rwandan citizens. The Human Development Report (2006) ranks Rwanda number 158 out of 177 countries. It belongs to a group of countries with low economic development. The World Audit Organization ranks Rwanda the 139th out of 150 countries in its democratic index.

In 2003, the ITU signed a Contribution Agreement with the European Commission (EC) on "Capacity Building for Information and Communication Technologies". This agreement initiated

a Global E-Government Project which inter-alias had the objective to enhance government services through the use of secure Internet infrastructures, thereby stimulating the development of E-Government applications (Kitaw, 2006).

Through this EC support, the country managed to optimize the national internet bandwidth's usage, develop the accessibility of ICT based on G2C and deployed a secure infrastructure allowing email exchanges among government agencies (G2G). Services that the government of Rwanda is offering online include: the G2G web-based secured e-mails, online electronic forms, passports, visa and work permit applications, and national Identification cards. The country has also established Public Internet Access Centers that are serving citizens in lower tariffs than other Cybercafés in the locality.

E-government projects in Rwanda have multiple benefits. The most important ones are: *citizen empowerment and accessibly of government services* i.e. the Public Internet Access in post offices in remote areas facilitate the access of government information, such as passports forms to Rwanda's citizens thereby contribute to their empowerment; *efficiency in government services i.e.* the Web based secure emails between government offices not only stimulate and speed up intergovernmental information exchange but also increase efficiency; *stimulation of tourism and foreign investment i.e.* the online visa delivery processes eases travel procedures for tourists and foreign business persons, by cutting redundancies in procedures and emphasizing immediate delivery of services, it not only increases the efficiency of the Immigration Department but it also makes the traveling conditions and experience for tourists and foreign investors more convenient by eliminating the cumbersome procedures of visa requests through the embassies.

The Ethiopian case

Ethiopia is the oldest independent African country (never colonized) with an estimated 75 million people (CSA, 2006). The country last conducted its general election in 2005; the election was followed by demonstrations and national unrest with opposition parties claiming that the government rigged itself in.

Some international observers supported the opposition's argument and since then, Ethiopia has been dropping on the list of democratic countries. The Audit Organization ranks Ethiopia 129th out of the 150 audited countries with regard to the rule of law and fighting of corruption. The 2006 CIA World fact book records that Ethiopia has a 42.7% literacy rate and this ranks it 170th out of 177 countries, according to the 2006 Human Development Report. Agriculture is the major contributor to the Ethiopian economy and it creates about 80% of all employment opportunities in the country.
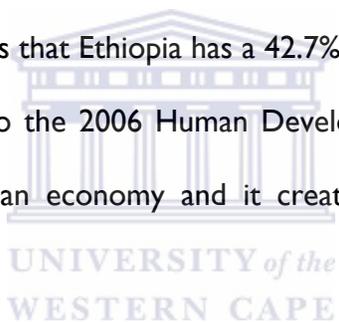
According to Kitaw (2006), amidst a tense political situation and poor governance records, the government appears to consider ICTs as an indispensable tool to alleviate poverty and facilitate state transformation aiming for effective and efficient service delivery. It has initiated commendable ICT4D policy frameworks and several E-Government projects. But these projects still face poor telecommunication infrastructure.

The Ministry of Capacity Building has formulated ICT policies and strategies, and coordinates their implementation. The policy document outlines key strategies including ICT infrastructure development, human resource development, ICT for governance/e-government. An important initiative under the national ICT4D Action Plan is the WeredaNet project which aims at

connecting all administrative zones to enhance the efficiency and effectiveness of civil and public service deliveries. Through the Wereda project, the government has managed to link all internal communication (from the Federal government) to the local governments. The Wereda project has installed terrestrial and satellite based network and through them, the federal government manages to communicate with its agencies using video conferences, Voice of IP (IP telephony), web service and secured messaging.

Benefits of this project in Ethiopia are: increased efficiency of both levels at government; a frequent, close and direct communication and collaboration between districts administration, regions heads and the federal government; improved use of executive time (faster decision making); provision of timely information to the lowest government institution through the web services (static web pages and archived video sessions) and reduced travel and administrative costs for sharing information.

Conclusion

The experience from African countries shows that there is a high potential in expanding e-government in the continent. The expansion of the mobile and telephone industry allows many citizens in Africa to enjoy services that are offered via internet. There is an example of some rural areas in Africa where power (electricity) or computers have never been seen, nonetheless, through mobile phones, citizens access internet and use it to get a market for their goods, access for health services and receive news.

In Tanzania, for instance, this research has discovered that e-government is still in early stages, but there are improvements. Since it introduced its national website over a decade ago,

Tanzania has managed to introduce many websites at ministerial levels and other government departments. Most of these websites carry information in the form of G2B and G2C. The G2G model is still weak and most of the activities the government activates still involve paperwork or phone communications. The experience of e-government in Tanzania is explained in detail in the next chapter.

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CHAPTER FOUR

E-GOVERNMENT EXPERIENCE FROM TANZANIA

Introduction

This chapter comprises two parts: part one details the experience of e-governance in Tanzania and part two details the lessons from a case study of TANESCO. This chapter presents the fieldwork that the author has carried out by collecting some documentation, assessing legislative frameworks, conducted interviews and visiting various government websites and observing daily services at TANESCO. This means all primary and secondary data were derived from TANESCO resources.

The results show that e-government is still in its initial stages in Tanzania. Some work should be done to make it more successful, even though the country has many competing challenges such as poverty and high computer illiteracy rate.

Tanzania: The country background

The United Republic of Tanzania is the largest country in East Africa, covering 940,000 km sq, of which 60,000 km sq is inland water. The country lies South of the Equator and borders eight countries: Kenya and Uganda to the north; Rwanda, Burundi, the Democratic Republic of Congo and Zambia to the West; Malawi and Mozambique to the South. Administratively, the Tanzania mainland is divided into 21 regions and the Island of Zanzibar into five regions. Each region is subdivided into districts (129 in total) and each district in wards (2,787). Each ward is

then divided into enumeration areas (EAs) which before the 2002 population and housing census numbered 55,217.

The Headquarter of the country is Dodoma and the central city for government activities and commercial headquater is Dar es Salaam. Agriculture is the main income generating activity for the majority of Tanzanians. It supports over 80% of the Tanzanian population, both inland and on the mainland. According to the 2002 population and housing census, Tanzania had 34.4 million people. The estimated population today is about 38 million.

Tanzania achieved its independence in 1961 from Britain and soon after introduced socialist policies. Through these policies, the country nationalized all means of production including the telecommunication industry. The collapse of USSR and the end of the cold war in the 1990s caused Tanzania to start changing its political and economic policies , and begun to accept instruction from the World Bank and IMF.

The country adopted a multiparty system in 1992 and started to change its economic policies, hence, allowing for widerspread privatisation. It then allowed private companies to operate and this marked an improvement in communication and allowed other technological advancements. Private companies started to operate the mobile industry (this part is expressed better in the next section).

ICT performance in Tanzania

In 1993, Tanzania restructured its communication policies. This was a two step procedure, Firstly, the dissolution of Tanzania Posts & Telecommunications Corporation (TP &TC) and the establishment of three separate institutions, namely: the Tanzania Communication Commission (TCC) as an independent regulator, The Tanzania Posts Corporation (TPC) and the Tanzania Telecommunication Company (TTCL) as the service operator. These changes made TTCL the biggest telephone company in Tanzania and then in the same year, the first mobile phone company (Mobitel) was launched (Ngalinda & Mutagahywa, 2005).

Since then, Tanzania has managed to have over five big mobile phones that operate even in some rural areas. However, research from Tanzania Communications Regulatory Authority which was enacted by the law in 2003, reveals that Tanzania has about 10 million telephone subscribers-fixed and mobile combined and about 500,000 internet users. This is a big number that can be used to influence e-government initiatives in service delivery.

The government of Tanzania enacted an ICT policy in 2002. The policy has never been implemented well because of factors such as a high poverty rate facing the country, poor telecommunication infrastructure and increase in the illeteracy rate.

E-government in ICT policy

E-government in Tanzania is discussed in the ICT policy that was passed in March 2003. This policy articulates ten main points, which all focus on harnessing ICT in Tanzania. These include strategic ICT leadership; ICT infrastructure; ICT Industry; Human Capital; Legal and Regulatory

Framework; Productive Sectors; Service Sectors; Public Service; Local Content and Universal Access.

According to the ICT policy (2003), Tanzania's tele-density is low, with the number of fixed and mobile cellular lines currently standing at 12 telephone lines per 1000 people (i.e. a teledensity of 1.2) and the number of mobile phone subscribers currently stands at 81 per 10,000 inhabitants. In contrast, the City of Dar es Salaam has 5 fixed lines and 10 mobile phone subscribers per 100 people.

As a result, Tanzania lacks cheaper and high capacity connections to the global Internet. All connections, regardless of the data service provider, are small capacity international links that connect to the global Internet backbone in different countries such as Norway and the United States. Therefore, the limited international Internet bandwidth is scarce and extremely expensive. The lack of a national Internet Exchange Point (IXP) also means that much of Tanzania's local traffic is routed via international routes.

There is no local manufacture of ICT equipment in Tanzania; all local dealers or agents import these products. There are no standards guiding the imports of both hardware and software. Few local companies are developing computer application packages. Most of the software used by both public and private sectors is imported at a considerable cost.

Currently very few educational institutions have computer laboratories and other multimedia facilities. These facilities are more in private schools than in public schools. Even fewer of these

facilities are linked to the Internet. At universities and other institutions of higher learning, few computers are available for use by students and academic staff.

There is an official Secondary School Computer Studies Syllabus for Forms I – IV developed in 1996 and issued in 1997. It is out of date with respect to the evolution of technology, and has been so, since the early 90`s. However, only a few students have taken these courses so far.

The ICT policy acknowledges that e-government is essential and important in Tanzania. As a matter of fact, various arms of the government have made significant progress in deploying ICT in e-government solutions. Several departments are transforming their operations by deploying ICT. However, no mechanisms exist for ensuring that these major initiatives are coordinated or developed within a holistic strategic government plan. To make further progress and reap additional rewards, the government needs to develop a comprehensive and holistic e-government strategy for urgent implementation. Not only will this enhance government productivity, but it will also enable the government, as a "model user" of ICT, to become the driving force behind its sustainable progress in the national ICT arena. The possibility of providing e-governance services depends upon the existence of an effective e-government infrastructure through which the public service can communicate internally and with the intended beneficiaries of its services.

Various ministries, departments and government agencies have established their websites and most of them have information just for citizens or other groups to read. Recently, the ministry of Home Affairs has introduced several applications for passports, visa and work permits on its

website. In addition, the Commission for Human Rights allows citizens to channel their grievances through e-mails and there is a special website designed by the Ministry of Information that deals specifically with citizens' queries.

Nonetheless, this research observes that many government websites are not updated. The main problem discerned is that there is a lack of human capital and the will to adopt the changes that ICT brings. This problem is very huge in Tanzania and many ICT practitioners argue that there is little political will that will allow the country to adopt the challenges of ICT in promoting effectiveness in working areas. People are not willing to change because they feel that they will lose their jobs when machines are introduced.

In most cases, these government websites offer the G2C and G2B model. The G2G model is still dependent on paperwork, faxes and phones. Citizens and business communities just get information from websites and in some cases, this information helps them to understand services or whom to visit when they need to channel their problems or need services from government departments. In the actual sense, the experience from Tanzania reveals that e-government is still in its initial stages.

There is a link between business communities (i.e. banks) and government agencies. Citizens investing in business with the government can pay for their services directly through banks, and this is another form of e-government. This system at least minimizes the amount of time that citizens waste inquiring about services in public organisations. However, the big challenge is that all these services function only in the urban areas, and thus, it is only a few people who afford

to access them. Poverty and illiteracy rates are still big problems affecting many Tanzanians. Affordability of internet services is also another issue that hinders e-government in Tanzania.

Table 1: Tanzania Key ICT indicators

Indicators	1961	1993	2002
Population in (millions)	12.3	26.7	33.6
Fixed line exchange capacity Mobile operators	11,300	125,7031	234,6404
Mobile subscribers		1,500	700,00
Teledensity (lines per 100 people)	0.10	0.32	1.22
Data communication operators			16
Internet service providers		1	23
Internet subscribers (Dialup accounts and Wireless)		10	14,000
Internet capacity (total bandwidth Kbits)		64	44,000
Television licences		1	24
Radio broadcast licences	1	2	18

Source: the ICT Policy 2003

E-government: Lessons from TANESCO

A company background

Information from TANESCO's website shows that the first supply of electricity in Tanzania was established by Germans in 1908 in Dar es Salaam. It served the railway workshops and part of

the town. When the territory of Tanganyika was mandated to the Great Britain in 1920, a Government Electricity Department was formed under the Tanganyika Railways. In 1931, the Government handed over the undertaking in Dar es Salaam, and new ones, which had emerged at Dodoma, Tabora and Kigoma to private enterprise.

Two private power companies were formed, one was the Tanganyika Electric Supply Company Limited (TANESCO), which was given a concession area on the Pangani Falls near Tanga. The other company was the Dar es Salaam and District Electric Supply Company Limited (DARESCO) whose concession areas were Dar es Salaam, Dodoma, Tabora and Kigoma; and later expanded to Mwanza, Moshi, Mbeya, Morogoro, Mtwara and other townships. Electricity generation in all these towns greatly depended on imported diesel oil. TANESCO developed the first hydro power station at Kange, in the outskirt of Tanga, along Pangani River.
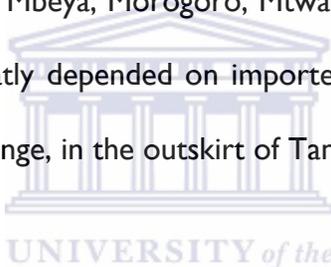
In 1964, the Government bought all the shares from the two private companies and merged them into a single utility under TANESCO. In 1968, the company changed its name to the Tanzania Electric Supply Company Limited, by which it is known to date.

Since then, TANESCO started planning new power projects aimed at meeting the increasing industrial, commercial, and residential power demands. Several major power development and construction projects have therefore been undertaken during the past three and half decades, including construction of new hydropower stations, transmission and distribution networks. Construction of the national grid system; numerous 220 kV, 132 kV, 66 kV, 33 kV and 11 kV transmission distribution lines as well as 400V / 230V lines connecting customers. Many isolated diesel power stations and rural electrification schemes have been constructed.

However, about only 11 percent of the country's estimated population of 34 million have access to reliable electricity.

Power generation

TANESCO's generation system consists of hydro, thermal and gas. Hydro contributes the lion's share to TANESCO's power generation. The total generation from TANESCO own sources in 2003 were 2,662,027,682 kWh out of which 2,551,416,842 is from hydro power stations.

TANESCO operates an interconnected grid system comprising of hydropower generating stations. The installed capacities are: Kidatu 204 MW; Kihansi 180 MW; Mtera 80 MW; Pangani 68 MW; Hale 21 MW; and Nyumba ya Mungu 8 MW totalling to 561 MW of hydro generation.
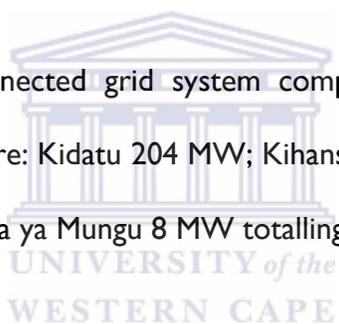
There are several diesel generating stations connected to the national grid in Dar es Salaam, Mwanza, Tabora, Dodoma, Musoma and Mbeya. These have an installed capacity of 80 MW, but they effectively contribute about 35 MW due to running problems. Some regions, districts and townships are dependent on isolated diesel – run generators (Kigoma, Mtwara, Lindi, Njombe, Mafia, Mpanda, Tunduru, Songea, Liwale, Ikwiriri, Masasi and Kilwa Masoko). These have an installed capacity of 31 MW but they effectively contribute about 15 MW due to aged machinery and lack of spare parts.

Two private independent power projects (IPP's) which are connected to TANESCO grid are IPTL (Independent Power Tanzania Ltd) with 100 MW installed capacity and SONGAS (Songo

Songo gas – to electricity project) which by the end of 2004 had 120 MW capacity although more gas turbines will be installed to increase the capacity to 200 MW before the end of the year 2005. TANESCO also imports 10 MW of electric power for Kagera Region from Masaka substation in Uganda while Sumbawanga, Tunduma and Mbozi districts receive about 3 MW from neighbouring Zambia.

In August 1997, TANESCO was declared a specified public corporation. In line with the sector objectives, the Government decided to privatize it. The objectives of the power sector reform programme are to: increase accessibility to electricity countrywide; improve system reliability; reduce costs and prices of electricity; create a conducive environment for private sector participation and ensure sustainable commercial viability of the industry.
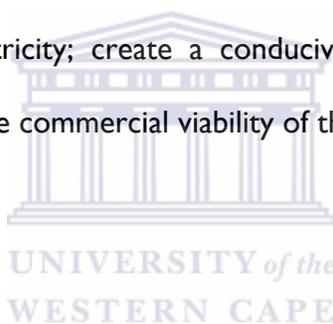
TANESCO services

As we have seen above, TANESCO is the only company that deals with electricity generation and supply to Tanzanian communities. This research only focuses on services that are offered by TANESCO to citizens in the form of G2C or G2B and not internal services categorized through a G2G model.

Accordingly, TANESCO deals with citizens and other business communities in terms of: service application, billing sending and payments and customer care services. As a consequence new customers applying for electricity must go to TANESCO offices in person and get paper forms so that they can start the process of applying for electricity services. This process is time consuming and may take up to six months before electricity is or may be connected to a new

customer. If the company had online service, applicants would have the opportunity to apply for its services online and monitor the stages that are followed before being installed for electricity in their homes.

These new customers will have to visit TANESCO offices several times to get answers about when their applications will be processed. However, since last year there are many applicants who have been applying for electricity for almost a year and their applications have never been attended to.

Service application is an area recognised as a coruption zone for most citizens who apply for service lines from TANESCO. For a long time some company officials and their counterparts mainly known as 'Vishoka', have been engaging heavily in corruption in order to assist customers to get attended to with regard to their electricity applications, bill payments and even some power-cuts. Many customers who participated in this research commented that TANESCO should have deployed e-governance in order to minimize corruption and time wastage for its new customers. Introducing paperless application will allow for easy monitoring and also minimize unnecessary conflicts between customers and TANESCO workers. It will also make the system more open and systematic because the customer can see the stage where his/her application is at, as well as communicate easily with any TANESCO office regarding the next stage of his/her application.

The billing service is also somehow improved via e-governance. TANESCO is using the G2B model by allowing its customers to pay their bills through the National Microfinance Bank

(NMB) which has a huge network compared to other banks in Tanzania. Nonetheless, to be more effective, the company should have established online accounts for its customers especcialy those who lives in big cities such as Dar es Salaam where access to internet is high. Through these accounts, it would have been easy to access their bills and also make online payments. This would have reduced the problem of long queues in streets and would have made services more accessible to users.

That approach would have been more successful for Luku (prepaid) service users. Customers would have been allowed to go to the next stage of e-government by starting to pay their Luku online and not as is currently the case whereby customers have to go through Luku kiosks which often have long lines. Over 90% of respondents in this research advice TANESCO to introduce online purchasing for Luku customers or establish a system like that employed by prepaid mobile telephone that are using prepaid cards available in every corner of the country.

E-government and service delivery at TANESCO

TANESCO is still at its initial stages in deploying e-government services to its customers. One of the biggest problems that the company faces is poorly skilled ICT labour, which would not help transform the company. This is the case not with TANESCO but with many organisations in Tanzania. The company website has never been updated for almost two years and this study learns that poor funding from the government is used a factor for not expanding online services.[20]

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[20] Information gathered through observation and interview methods. The author visited TANESCO's website from June 2008-February 2009.

Alphoce Magori, a Computer Analyst Programmer at the Bank of Tanzania (BoT) argues that "there is a negative understanding of the benefits of ICT in Tanzania[21]." Many civil servants, apart from being ICT ignorant, believe that technology has a negative impact on their jobs. He acknowledges that ICT facilities are expensive but this is only in the initial stages. After this stage, companies such as TANESCO may reduce their costs of production and become more efficient in serving their customers.

Gharib Bilal, a former Chief Minister of the Revolutionary Government of Zanzibar who was another respondent in this study argues, "Tanzania's civil servants must transform their mindsets and adopt any means that may help to minimize costs of production and increase efficiency[22]". One of these transformations must include the use of ICT facilities in areas where these facilities are available and to make them affordable for everyone to use. According to him, that is the best way to bring e-government technology to communities facing a high illiteracy rate and poverty. The Experience of mobile phones in Tanzania illustrates that Tanzanians are ready for change and adopt it when given the opportunity.

TANESCO faces other problems such as poor and ageing infrastructure, poor management and corruption allegations, factors that hinder its growth. Mercy Chintawe, a Legal Officer at TANESCO Head Office in Dar es Salaam responding on this research says that, most of

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[21] Interview conducted in Dar es Salaam 18th September 2008 with a Computer Analyst Programmer at the Bank of Tanzania (BoT) Alphonce Magori.

[22] Interview done in Dar es Salaam September 19th 2008 with a former Chief Minister in the Zanzibar Revolutionary Government Dr Gharib Bilal.

TANESCO's problems are caused by lack of political will to expand the company and really serve Tanzanians.

"The company demands billions of shillings from its customers and for a long time, its infrastructure has been not repaired[23]". This leads to power wastage during transmission and less attention devoted to attracting more customers. Chintawe reveals that many Tanzanians are too poor to afford paying for electricity and this has made TANESCO not to expand its services, especially in rural areas.

Effectiveness of e-government at TANESCO

E-government mechanisms at TANESCO are still at the initial stages. It may be in the fourth stage according the the Global E-Government Readness Report (2005). This stage is referred to as 'Transactional presence' and it allows for a two-way interaction between the citizen and his/her government. It includes options for paying taxes; applying for ID cards, birth certificates/passports, license renewals and other similar C2G interactions by allowing him/her to submit these online. The citizens are able to pay for relevant public services, such as motor vehicle violation, taxes, fees for postal services through their credit, bank or debit card. Providers of goods and services are able to bid online for public contracts via secure links.

TANESCO has its official website which is rarely updated. The website, for instance, has areas that have not been updated for more than four years and important information is unavailable. For instance, a Richmond Power supply company saga which led to the resignation of three

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[23] Information obtained from Mercy Chintawi in an interview held in Dar es Salaam September 2008

ministers, and some companies under the Private Partnership such as AGGREKO which sell their electricity to TANESCO, are not on the website.

Customer statistics are also missing from TANESCO's website. It is difficult for customers to send their opinions via e-mail, thus the website should have introduced a site where customers send queries to TANESCO officials and get the answers online in an open link that would be accessible to everyone.

Customers are allowed to request for an online TANESCO newsletter. This is the best service that TANESCO provides to customers. It may use this experience to help expand its services; for example, by providing online application forms and billing payments via e-banking. TANESCO must transform itself, reduce its costs of production and acknowledge that its failures have hindered many development activities that could take place in Tanzania. For instance, it is is difficult to introduce internet in rural areas because of frequent power shortages.

Challenges facing e-government in Tanzania

Despite the rapid improvements in Tanzania's ICT environment, there are still many challenges in its provision. Some challenges are minor and others more complicated. This is because Tanzania is one of the poorest countries on earth and consequently it has poor infrastructure and many priorities to consider before expanding the e-government initiatives in the country.

Some of these challenges are: ICT is concentrated in Dar es Salaam, the commercial capital with little deployment or access in other urban centres or in rural Tanzania; ICT equipment and other digital facilities are still expensive in Tanzania; costs of internet services in internet café are still high and the country has few internet providers; there are frequent of power shortages; poor management of public websites (most of them are not updated); poor ICT technological infrastructure system and few skilled people in the country.

Many respondents to this research that responded to the question: "Which services would you advise TANESCO to offer or/expand through e-government initiatives and in which places?" argued that they were able to utilize online services and advised TANESCO to incorporate and expand its e-government initiatives in order to make the company more accessible and more efficient in service delivery.

They said, TANESCO must expand its Luku offering selling it online or increase selling stations. Additionally, they could sell it in form of a voucher, such as that commonly sold by mobile phone operators. This research has learnt that TANESCO will opt for the voucher option and the process will commence by 2010. The company also plans to eliminate the old meter system that allows customers to use electricity and then pay later and instead establish the prepaid system mentioned above.

Application services must be improved as many customers are tired of the paperwork system which consumes their time and is complicated. They advised the company to establish online

application services which, although at the beginning, will be accessible to those who can afford, but later will be accessible to every applicant.

TANESCO also needs to show its services via websites. Statements to customers about issues such as power cuts and power shortage may be provided to customers via e-mail. The company may establish a customer's data bank and online accounts that will help customers to channel their concerns and produce other customer services.

The current TANESCO's official website needs to be updated in such a way that it attracts more customers and advertisers which will increase capital to the organisation. The site must be created in such a way that it fulfils the needs of the citizens, business communities and customers. The best model to adhere to is one with G2G, G2C and G2B qualities. Effectiveness of e-government may help TANESCO minimize red-tape and make its services friendlier and more timeous while minimizing costs for both customers and the company.

Conclusion

In concluding this chapter, there is a need to understand that poor countries have big challenges when they intend to develop ICT technology or introduce e-government in their day to day systems. One of the most central challenges is the reorganisation of priorities before adopting any development plan. ICT equipment is very expensive, and large amounts of money are also required in order to install any such equipment. Nevertheless, Tanzania cannot escape from taking part in global technological advancements.

The country can still take advantage of the few facilities available and function more efficiently. This will also help in reducing some costs and make governmental activities more accessible to citizens and other stakeholders. The problem of unskilled workers can be solved by bringing experts who will then conduct seminars and classes for bureaucrats. Attaining effective e-government initiatives in Tanzania also lies in the hands of the national bureaucrats. They need to understand that this technology is not bringing a negative change within government. As Gharib Bilal, the Former Chief Minister of The Government of Revolutionary of Zanzibar argues, " bureaucrats must change their behavior, maximize confidentiality when working for the public and agree to be more open when using e-government because e-government helps bring the government close to the people.[24]"

For instance, TANESCO is currently investing in basic e-governance. The company, together with its customers, acknowledges the change that this initial stage has brought and encourages changes that will make the process of service delivery more accessible, easily provided and reduce costs of production in order to reduce costs to citizens. It is agreed by many respondents that e-government is the catalyst that may help many companies work effectively. TANESCO may do the same by increasing its services as suggested in the last section of this chapter, which focuses on areas that TANESCO is needed by its customers to improve upon in order to bring efficiency and more effectiveness in service delivery.

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[24] Interview done in Dar es Salaam, September 18th 2008 with Dr Gharib Bilal a Former Chief Minister of The Government of Revolutionary of Zanzibar.

CHAPTER FIVE

TOWARDS AN ANALYTICAL FRAMEWORK TO UNDERSTAND E-GOVERNANCE IN TANZANIA

This chapter describes and analyzes the data obtained from the fieldwork. It proceeds to answer research questions and illustrates how the objectives of this research have been fulfilled. This section encompasess the quantitative aspects of this research and statistics are shown that discuss the secondary objective of this study, i.e the relationship between e-government and sound governance.

Topics covered in this section include community understanding of e-government, impact of e-government on sound governance, the issue of e-governance and gender, and e-government and service delivery.

Table 2: Community understanding of e-government

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	35	87.5	87.5	87.5
	no	5	12.5	12.5	100.0
	Total	40	100.0	100.0	

Source: Own Research, January 2009

From the above table, we can see that 87.5% of respondents reported understanding the notion of e-governance and that they have accessed its benefits in one way or another. The question they were answering was: *do you know about e-government?*

Nonetheless, these respondents said that they only get information from online government websites and that they do not access direct services that are supposed to be provided such as service application, bill payments etc.

Table 3: E-government and participation

		Frequency	Percent
Valid	yes	36	90.0
	no	4	10.0
	Total	40	100.0

Source: Own Research, January 2009

Nine out of ten respondents agree that e-government allows for community participation. These respondents argue that e-government brings the government and its agencies closer to the people and makes them aware of issues related to policy, legislation and developmental planning. This reply was gathered from the research question: *do you think e-government helps you to participate in what the government and its agencies do?*

In the course of this research we have also learnt that citizens who have access to internet, feel that they are reducing their costs and time to access some government services that are

offered online. For example the prepaid electricity programme, which, though it has some problems, has reduced a lot of red-tape and has given citizens control of their services.

Table 4: Impacts of e-government on sound governance

		Frequency	Percent
Valid	Yes	38	95.0
	No	2	5.0
	Total	40	100.0

Source: Own Research, January 2009

This study finds that an e-government could have positive impact on the governing structures. It can help bureaucrats be more accountable to their citizens, makes government transparent, and brings efficiency and effectiveness in service delivery. Almost all the respondents agreed that e-government has a positive impact on sound governance.

These respondents also argue that e-government enables them to access services easier which is more cost effective. As has been discerned during the research process and is shown in table 4, 95% of all respondents agreed that e-government increases the chances for community and citizen participation in government matters. These respondents were answering the question: *do you think e-government helps you to participate better in decision making, policy formulation and in making the government more accountable to its citizens?*

Table 5: E-government and gender

knowledge of e-gov * gender of respondent Crosstabulation

			gender of respondent		Total
			male	Female	
knowledge of e-gov	yes	Count	21	14	35
		% within gender of respondent	100.0%	73.7%	87.5%
	no	Count	0	5	5
		% within gender of respondent	.0%	26.3%	12.5%
Total		Count	21	19	40
		% within gender of respondent	100.0%	100.0%	100.0%

Source: Own Research, January 2009

This study reveals that men are still favoured by e-government initiatives. All men respondents agreed that they had prior knowledge about e-government, while there were 26.3% of female who had no knowledge of e-government.

E-government and societal conflicts

With 37 million people and an area of 945,000 square km, Tanzania remains one of the least urbanized African countries. Only 23 percent of the total population lives in urban areas. Looking at the Tanzanian administrative regions, Dar es Salaam region has the highest urban population (94 percent), followed by Zanzibar (40 percent) and Arusha region (31 percent)[25].

There has been a moderate increase in the share of the urban population between 1988 (18 percent) and 2002 (23 percent). Internet users in Tanzania increased from 60 000 to 333 000, or by 455%, in the period 2000-2005. The Internet café fee is more or less standardized over

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[25] Information taken from the Tanzania National website, 2008.

the country. Except for the most central and business oriented areas in Dar es Salaam, and special tourist sites, like the Kilimanjaro area and Zanzibar, the price is Tsh 500, or USD 0.5 per hour.

These factors therefore impact to e-governnment societal conflicts in Tanziania. These conflicts emerges in the areas of age, geographic location, literacy and socio-economic status. There is an urban vs. rural conflict that occurs because of poor infrastructure, high level of illiteracy and poverty in rural areas. This illustrates that achieving e-government in Tanzania means the on-going marginalization of people in rural areas, if some measures to correct this, such as expanding electricity services to rural areas, are not introduced.

There is a very clear geographical digital divide in Tanzania between urban and rural areas in terms of public internet access points, and access to the Internet. Through their research, these two authors reveals that there are 16 times more people per Internet café in the rural regions of Iringa, Mbeya and Songea compared to urban Dar es Salaam, and in the semi-urban region, Morogoro, there are 7 times more people per café (Ngalinga & Mutagahya 2005 and Furuholt & Kristiansen, 2007).

Many people aged 45 and above consider e-government in a negative way, demonstrating a generational conflict of opinion in regards to the benefit of technology. This is because they believe that it can negatively affect their jobs and thus they are reluctant to embrace new technology (Own research survey, 2008).

In order to access online services one must at least know how to read and write. In other words this means that there is a direct connection between succeesful e-government and education. Many respondents agreed that as the illiteracy rate is growing in Tanzania, this may hinder the achievements and merits that e-government could bring to people.

The last conflict is between people with good economic status and the poor. The CIA world factbook (2008) indicates that over 36% of Tanzanian lives below the poverty line. These people cannot afford to get their daily basic needs and they are automatically isolated from e-government activities. Also ICT facilities are still expensive in Tanzania. Installing these facilities requires a lot of money and this makes accessing internet and other telecommunication systems expensive in Tanzania. There is a close relationship between the rich accessing e-government benefits and the poor remaining technologically isolated.
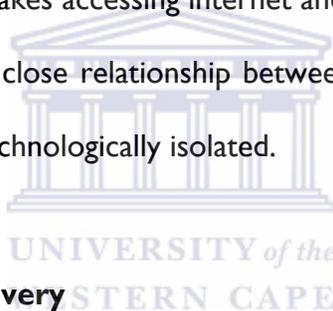
E-government and service delivery

Many respondents agreed that e-government enables citizens and organizations to acquire services more easily and cheaper in the long run. There is no need for citizens to travel long distances to apply for services such as birth certificates as this can now be done online. When there is an e-government that is established well it also helps in evaluating and monitoring government services. Citizens can also afford to have direct contact with bureaucrats, doctors or their professors without having to be there personally.

Many respondents agree that e-government allows for a good relationship between customers and companies, and citizens with their governments. It helps in reducing the costs of production

which then reduces the price of services. They agree also that e-government makes them global citizens as e-services makes the world "borderless".

Conclusion

From the above analysis we can see that e-government has crucial impacts in achieving sound governance. The process of service delivery is seen simplified when governments develop and apply e-government initiatives in their day to day operations. In Tanzania this research reveals that citizens understand the need for the government to bring its services closer to citizens while regarding factors such as time and costs.

Many respondents agree that e-government would hasten the process of getting services even in remote areas. But the majority of respondents in this research acknowledge that in places where electricity is not provided, in communities where there is low computer literacy and for the older generation (from 45 years and above), e government will exacerbate community divisions and thus increase ineficiency in service delivery.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS TO IMPROVE E-GOVERNMENT IN TANZANIA

This chapter covers the conclusions and recommendations of this study. It also ndicates some areas that still need further research and makes recommendations for policy makers to adjust, change and adopt ICT initiatives that may help to minimize or reduce red-tape, and bring efficiency in serving citizens.

It was learnt from this study that the community encounters a lot of red-tape when accessing or requesting for governmental services. This implies that governmental officials should change their approach towards serving the community and in this quest must begin by using new technologies that may stimulate a good relationship, better performance, cost reduction and timely services to citizens.

It was also learned that better performances in the public sector begins with civil servants' will to change. This 'will' reflects the disposition to seek new knowledge and conveys a readiness to adopt change. As an example, Tanzania has seen rapid development in the mobile phone industry, which has subsequently enabled greater communication in the country. These mobile phones operate even in rural areas. It is therefore the government's turn to copy this experience in order to make e-government accessible to more Tanzanians.

Tanzania requires more studies in ICT in order that the country may improve service delivery by making these ICT technologies more effective. This research has shown that ICT facilities help in minimizing bureaucracy, increase productivity and decrease costs of production. We have also seen that e-business increases production and involves more people in the business sector.

Recommendations

In order for e-government to be successful in Tanzania the country and its people should be ready for social transformation and accept that e-government is unavoidable, will be there for future generations to come and has the potential to bring sound governance in the field of public administration and management. This may be done regardless of the factor that Tanzania is among the poorest countries in the world. E-government may actually even help technological advancement in the country.

Fistly, this study recommends to TANESCO officials to expand electricity services, especially in rural areas so that many Tanzanians can access modern technology.

Secondly, Tanzania once managed to lower its illiteracy rate, but things are now running counter clockwise. Many people in rural areas cannot afford to go to school and current research from The National Electral Committee (NEC) reveals that there is a rapid growth in the people who do not know how to read and write today, as compared to the 1980's[26]. This

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[26] Information obtained from the NEC report on permenent voters register 2004

means that applying e-government initiatives in Tanzania would isolate a big number of citizens, especially those who cannot read and write.

Thirdly, lack of political will is the problem affecting many areas of African lives. E-government in Tanzania is also lacking this impetus. Although it is a policy which has been proposed in writing many times, minimal attention has been given to its implementation. This reseach understands that Tanzania is a poor country and that installation costs for ICT facilities are high. Nonetheless experience has shown that there is more economic potential for the country when ICTs are used in government activities. In addition they help in bringing the government closer to the people.

Fourthly, Tanzanians bureaucrats must not be conservatives or technophobes; they must accept technology and be ready to adopt the positive changes it can bring. In so doing, it will help them become more efficient and more effective in serving citizens.

Lastly, there is a need for further research on e-government that will include the rural population, people that have no access to electricity, those who are between the age of 7-18 years old and those that are lacking education.

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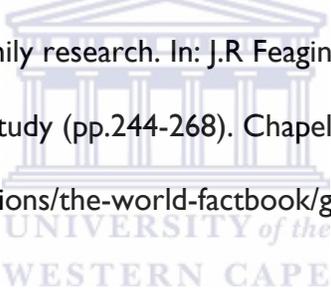
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APPENDIX 1
UNIVERSITY OF THE WESTERN CAPE
SCHOOL OF GOVERNMENT

This questionnaire will be confidential
Please fill this questionnaire as honestly as possible

E-GOVERNMENT IN TANZANIA

1. Name…………………………………………………………..

2. Gender
    a) Male
    b) Female

3. Working sector
    a) Private
    b) Government

4. Age
    a) 0-18
    b) 19-35
    c) 36-Above

5. Education
    a) Primary School
    b) Secondary School
    c) Graduate
    d) Others

6. Area of Residence
    a) Rural
    b) Urban

7. How many times do you use internet services?
    a) Often
    b) Regularly
    c) Not at all

8. What services do you prefer getting from the internet?
……………………………………………………………………………………………

9. Do you know about e-government?
    a) Yes

b) No

10. For how long have you known about e-government?

………………………………………………………………………………………………

11. Do you think e-government helps in acquiring, exercising and accessing governmental services? (Explain)

………………………………………………………………………………………………………

………………………………………………………………………………………………………

………………………………………………………………………………………………………

………………………………………………………………………………………………………

12. Do you use or plan to use TANESCO's services?
    a) Yes
    b) No

13. Do you think you can benefit if TANESCO expands its services to its customers by means of e-government?
    a) Yes
    b) No

14. Which services would you advice TANESCO to offer/ or expand through e-government, and   in   which   places   (explain)?

………………………………………………………………………………………………………

………………………………………………………………………………………………………

………………………………………………………………………………………………………

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………………………………………………………………………………………………………

15. Do you think e-government helps you to participate in what the government and its

agencies do?

    a) Yes
    b) No

16. Do you think e-government helps you to participate better in decision making, policy formulation and in making the government more accountable to its citizens?
    a) Yes
    b) No

17. What are the challenges to e-government in Tanzania? (Explain).

………………………………………………………………………………………………

APPENDIX 11
CHUO KIKUU CHA WESTERN CAPE
SHULE YA SERIKALI

Taarifa hizi zitabakia siri
Tafadhali jibu maswali haya yote kwa namna ya uelewa wako pekee

SERIKALI ELEKTRONIKI NCHINI TANZANIA

1. Jina……………………………………………………………..

2. Jinsia
    c) Mme
    d) Mwanamke

3. Sekta ya kazi
    c) Binafsi
    d) Serikali

4. Umri
    d) 0-18
    e) 19-35
    f) 36 na zaidi

5. Elimu
    e) Shule ya Msingi
    f) Sekondari
    g) Chuo Kikuu
    h) Nyingine

6. Eneo unaloishi
    c) Kijijini
    d) Mjini

7. Ni mara ngapi unatumia huduma za mtandao (internet)?
    d) Mara chache
    e) Mara kwa mara
    f) Situmii kabisa

8. Ni huduma zipi hasa ambazo unazipata katika mtandao?
……………………………………………………………………………………

9. Je, una uelewa kuhusu dhana ya serikali elektroniki (e-government)?
    c) Ndiyo

d) Hapana

10. Ni kwa kipindi gani umekuwa na uelewa kuhusu serikali elektroniki?

……………………………………………………………………………………………

11. Unadhani serikali elektroniki inakusaidia kupata, kuomba na kutumia huduma mbalimbali za serikali kwa wananchi? (Fafanua)

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12. Je, unatumia ama kupanga kutumia huduma zitolewazo na TANESCO?
    a) Ndiyo
    b) Hapana

13. Unadhani utaweza kunufaika zaidi na huduma za TANESCO kama kampuni hiyo itatanua utoaji wa huduma zake kwa wateja kwa kutumia serikali elektroniki?
    a) Ndiyo
    b) Hapana

14. Ni huduma zipi unaishauri TANESCO kutoa kwa wateja ama kutanua utoaji wake kwa kutumia serikali elektroniki na katika maeneo yapi (Fafanua)?

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15. Unadhani serikali elektroniki inakusaidia wewe kama mwananchi kushiriki katika kazi za serikali na mashirika yake?
    a) Ndiyo
    b) Hapana

16. Unadhani serikali elektroniki inakusaidia kushiriki ama kushirikishwa vema katika kufanya maamuzi, kupanga sera na kuifanya serikali kuwajibika zaidi kwa wananchi?
    a) Ndiyo
    b) Hapana

17. Ni changamoto zipi zinazoikabili serikali elektroniki katika Tanzania? (Fafanua).

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