

**DIGITALIZATION, STRATEGY AND PUBLIC SERVICE
DELIVERY IN THE MINISTRY OF LANDS KENYA**

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DECLARATION

I declare that this research project is my original work and has not been presented in any other institution of higher learning.

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This research project has been submitted for presentation with my approval as the university supervisor

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CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Digitalization has gradually altered the dynamics of public service delivery through the introduction of e-governments, birthing a strategy of distributed resources. According to Putra et al. (2018), advances in the digital era has led to the advent of Electronic-government that has enabled governments to come up with strategies for optimizing public service delivery by making extensive use of multi-channel service delivery platforms to offer services to the public. The e-governments have been made possible through the interlinking ICT and citizen data (Sascha, Paul, & Norbert, 2021). The government in its spearheading role of provision of globally competitive public service delivery has capitalized in training, infrastructure development and aligning its strategies around digital conversion.

Additionally, digitization coupled with strategic moves has seen governments achieve tremendous growth as far as delivery of services is concerned. However, implementing a strategy and more so in the digital world, requires a well-structured procedure to ensure that all the stakeholders are involved in the whole process to see to it that there are no implementation loopholes. For instance, government agencies and parastatals must be well staged to incorporate all the processes required for one to get a service at the facility thus reducing the time spend in the premises. A strategic move that does not reduce the initial expense is termed a non-soluble (Thompson and Strickland, 2013).

This study was anchored on a theory called Diffusion of Innovation proposed by Rodger (1995) as a lens to investigate our research question. This theory attempts to give insight to the process of innovation decision, aspects of rate of adoption determination, together with various classes of innovation adopters. As pointed out by Chen, Gillenson and Sherrell (2002), this theory assists in envisaging the chances and tariff of adoption of a new novelty. The diffusion of innovation theory makes an analysis of how members of a social system adopt new innovative ideas and how they arrive at the decisions to adopt such innovative ideas. The theory proposes that new innovations should be adopted for

the aim of growth and continuity (Rovelli, Ferasso, De Massis, & Kraus, 2021). The mass media and interpersonal communication channels are roped in to help in the diffusion process.

Digital platforms such as technology serve as platforms for the gathering, storing, securing processing, dissemination and use of any kind of information (Beynon, 2002). Digitization has also enhanced creation and delivery of services by governments to its people. Across most government ministries, the application of Information and Communication Technology platforms has radically changed the way they conduct their operations in terms of speed, transparency and efficiency.

1.1.1 Digitalization

Digitalization is termed as technologies that give access to info and data via communications (Khan, 2015). The application of Information and Communication Technologies has made it possible for efficient creation and delivery of services. Digitization therefore have the potential of creating a platform that enables distributed governance capable of enhancing each and every aspect of stakeholders' relationships by enabling a whole range of activities ranging data storage and processing, data interchange, proper circulation, accountability, accountability and other vital facets of an existing business practices.

ICTs such as technology, a 4th Industrial technology concept with its ability to support cheap, decentralized data management that cannot easily be tampered with, is a technological marvel that is likely to lead to the next generation of digital products (Rovelli, Ferasso, De Massis, & Kraus, 2021). The fundamental characteristic of the technology being the operational structure that presents a decentralized and distributed platform, it presents a perfect technology with high levels of trust and transparency.

The government of Kenya acknowledges the importance of land as a factor of production and as a resource and has made strides towards improvement of land transactions through legislation and also through technology referred to as the National Land Information Management System (NLIMS). There have been attempts to evaluate the causes of land problems. Research investigations done by Hallaq, Rothman and Christoplos (2013); World Bank Economic Report (2013) and Heeks (2010) indicate that the challenges can

be drawn from the weak land administration systems in the country marked by paper based record management in lands offices across the country. Okoth (2005) notes that land administration systems in Kenya have become extremely inefficient, time consuming, unreliable, unaccountable, restrictive and costly thus negatively affecting service delivery.

So as to address these challenges, The Government of Kenya via the Ministry of Lands initiated a process to automate its functions. The NLIMS idea was born in 2008. Digitization was identified as a way to enhance efficiency and effectiveness in the management of records. It also promotes convenience transparency and reliability in e-governance. Digitization of land records in Kenya began in 2013. This was intended to enact section 9 and 10 of the Land Registration Act 2012. Section 9 of the Act gives the Lands Registrar the mandate to maintain the register and any required documents in a safe and reliable format which may be electrical files. Section 10 emphasizes on the accessibility of the register by the public through electronic means and other ways. (J Kariuki, 2018)

Digitalization according to Clerck (2017) refers to the process of using digital technologies to change business models and processes and revenue collection. Digitalization will enable automation and altering static information key in service delivery by making it digital and sharable. In land transactions the concept of securing data, minimizing distortion, ensuring integrity and privacy is of significance hence digitalization.

1.1.2 Strategy

Strategy can be characterized as both an art and the study of planning, implementing and assessing cross-practical choices that empower an association to accomplish its objectives (Barney, 2001). Further, Strategic management is utilized equivalently with crucial planning. Similarly, it is said to offer a strategic direction endorsed by the team and stakeholders, the capability to exploit opportunities and react to external change by taking ongoing strategic decisions, a method for accountability, a clear business strategy and vision for the future, and a logical framework to handle risk to guarantee business continuity, a structure for governance at the different levels (Hill, Jones, & Schilling,

2014).

Strategic management as a strategic intent requires the organization to inspect outside and inner elements that are the basis for current techniques to have its vision set correctly. Second, estimating performance and Making a therapeutic move. Methodology detailing, execution, and assessment exercises happen at three hierarchical levels in an enormous association: corporate, divisional, and functional (Hill, Jones, & Schilling, 2014). However, smaller organizations may have corporate and functional levels.

The essential administration interaction can be depicted as a goal, candid, systematic approach for settling on meaningful choices in an organization. It endeavors to organize qualitative and quantitative data to permit viable options to be made under states of uncertainty (Barney, 2001). Many people perceive that instinct is fundamental for making significant and vital management decisions. Instinct is especially valuable for settling on choices in circumstances of great uncertainty or little precedent (Barney, 2001).

Additionally, Thompson and Strickland (2013) contends that implementing a strategy and more so in the digital world, requires a well-structured procedure to ensure that all the stakeholders are involved in the whole process to see to it that there are no implementation loopholes. For instance, at the ministry of lands, the e-jiji platform must be well staged to incorporate all the processes required for one to get a service at the facility thus reducing the time spend in the premises. A strategic move that does not reduce the initial expense is termed a non-soluble (Thompson and Strickland, 2013).

1.1.3 Service Delivery

Delivery of public service is a continuous undertaking that involves improving together with delivering services that are fixated towards particular users. As pointed out by Lewis and Booms (1983), the quality of a service is measured by how well it was delivered and whether it met the expectations of the customers or end-users. Service is defined as an activity that enables one to meet the requirements of a user. Effective service delivery should possess a number of key attributes such as being timely and available, high levels of reliability and dependability in addition to high levels of usability, credibility and

flexibility. Advances in the ICT sector heavily influence the performance of most government functions and more often than not play a big role in service delivery. Padovani and Pavan (2016) reports that more and more governments are resorting to electronic means to meet the demands of the citizenry as regards service provision.

Increased usage of technical communications gadgets like computers and the worldwide web to give public amenities to residents together with other individuals in a nation or area has led to the rise of electronic government, which arguably is one of the boldest achievements of the decade. This has helped governments come up with platforms for provision of efficient, transparent, affordable and convenient solutions to citizen concerns (Rana et al., 2016). This shows that satisfying a client's needs is very critical for the business survival and it demands understanding together with improvement of operating procedures within the organization.

In addition, identifying problems promptly and systematically, instituting valid and dependable service performance measures and measuring client satisfaction together with other presentation outcomes are equally of importance to the company. As per Kundenbindun (2008), the application of ICT in delivery of service helps in improving quality of service is a commerce management's language plus defines the level of accomplishment of an orderly service.

1.1.4 Ministry of Lands in Kenya

ICTs capability in capturing land records, storing, processing and dissemination will create a breakthrough in land administration. Heider and Cornelly (2016) reports that in Africa, more than 90% of land is undocumented and further estimates that worldwide, approximately 70% of the population does not have access to proper land titling. The prominence of the land sector is verified by the statement that the world bank in coming up with the doing business indicators dedicated 2 of the five indices i.e. equal access to land rights and land dispute resolution to matters touching on land. Most land processes, especially in developing countries are always slow, expensive and time consuming. This is mainly because of a repetitive process of validating the information presented. As suggested by Thambikeni and Sam (2015), leveraging ICT platforms such as technology

technology can potentially lead to many of these inefficient sub-processes being significantly reduced or completely excluded from the main processes.

Spatial Data Infrastructure entails the policies, standards and the organizational arrangements involved in the submission of spatial information from available sources to potential users. It provides the basis for spatial data discovery, evaluation download and application by users and providers within various levels of government, the private sector, NGOs, academic institutions, and the general public. Spatial data plays a crucial role in the development process. Spatial data infrastructure enables the access, sharing and storage of spatial information necessary for decision making. In Kenya various private and public institutions are involved in the production use and distribution of spatial data.

The Kenyan government has launched an ambitious program of digitization of government process and e-government. Spatial data is a critical component in the implementation of e-governance. The National Spatial Data Infrastructure can be used in road network development, waterways, telecommunication networks, farming, tourism and planning activities. The NSDI is also used for environmental management and conservation, climate change, design and delivery of public services (Okuku, 2014)

The increased awareness of the significance of the Spatial Data Infrastructure led to the importance of the National Spatial Infrastructure in many countries across the world to manage spatial datasets. A spatial data infrastructure framework is composed of technology, institutional framework, regulations, people and data.

KNSDI was commenced by a stakeholder's seminar held on 29th November 2006. The objective of the seminar was to sensitize stakeholders on the significance of formulating KNSDI standards. Six standards were adopted for projects undertaken in KNSDI.

These standards were combined to make the Kenya Profile for Geographical Information Standards (KPGIS).

In reality the implementation of the KNSDI standards has not been adequately done to a high development status. These standards were also based on ISO/TC211 and were upheld in mapping practice. A bigger percentage of KNSDI efforts in Kenya have been on data and standardization but there is still a lot of data held in analogue mode. The

government in conjunction with JICA (Japan International Cooperation Agency) and ICRAF (International Centre for Research in Agroforestry) has initiated a digitization program but the process has been slow due to inadequate technical expertise, financial resources and challenges in access and sharing of the datasets. However, there has been significant progress with datasets covering Nairobi being in digital format. Moreover, the available datasets are in various formats and standards. This makes data integration difficult and time consuming. There is also no proper policy, institutional and legal frameworks on data sharing, access and exchange. Some of the datasets available in KNSDI include Geodetic control, Hydrology, Vegetation, Utilities Geographic names, Transportation, elevation, parcel boundaries, administrative boundaries and digital imagery.

JICA facilitated a workshop which was attended by the Ministry of Lands on 30th November 2005 to discuss the way forward on formulation of the KNSDI policy. In attendance were both private and public sector representatives. The main point of discussion was on a directive from the office of the president to all ministries and public institutions requiring them to develop fundamental spatial data infrastructure to improve e-governance and also in accordance to Land Use policy which acknowledges the urgent need for Land Information Management System (LIMS)

1.2 Research Problem

A study carried out by Akingbade et al., (2012) sought to assess the role of ICT in land governance in Abuja. The project had been implemented to weed out rampant corruption in land matters. The paper explored the role of e-land management in respect to the various kinds of corruption such as deceit, nepotism, various applications, and bribery together with preferentialism as well as services such as legal pursuits, titles recertification, permitting rights of tenancy, issuance of consent together with regularization of titles. The research results revealed that the introduction of electronic services reduced corruption emanating from the confirmation of records of land via lawful searches together with the titles recertification of the land. However, other kinds of corruption like nepotism, land parcel switching together with favoritism were tenacious and kept on growing. The research however fails to outline the specific

strategies adopted in implementing the ICT system, this could have been key in finding out why certain practices, that were meant to be done away with, persisted even after system implementation. A similar pilot study (Karikari, Stillwell & Carver, 2005) was carried out in Ghana to implement a Geo-ICT platform to manage land issues. The aim was to report encroachments on community land together with demonstrating the various discrepancies existing amongst planning plus cadastral information sets. The findings revealed that appropriate application of ICT technologies in the land industry are the ones that have in mind the socio-political together with institutional context in which such strategies are to be carried out. The study however fails to outline the institutional context within which the project needed to have been operationalized. Lack of automation in most land registries has created room for manipulations of the register, double allocations, and dual registration together with mislaid registers.

Land registration has thus curved out to be a costly and time-consuming practice for a vast majority of the people of Kenya and hence an impediment to the country achieving the objectives of Kenya's Vision 2030 together with sustainable development goals. Consequently, the confidence of investors in the real estate sector and other entities to which land availability is a prime factor has been eroded and economic development stagnated. Kenyans who are without title to land are not able to fully exploit their landed property to the maximum. Owners of land in most cases are not able to use their land as collateral when looking for bank loans owing to lack of record-keeping and/or complexity in registration of land previously disclosed. This is costly not solely for the citizens but also to the country as a whole.

The Kenyan government, through the Ministry of Lands, (Strategic Plan 2008 – 2013) has always shown interest in remodeling the land registry, but time and again this intent has not been attained (Wayumba, 2017). Through the Strategic Plan (2008-2012) and performance contract (2010/2011), the lands ministry has identified the need to redesign its systems and processes of handling land information as key to efficient service delivery. A number of parliament Acts that have also been enacted such as Land Act, 2012, Land Registration Act 2012 and the Community Land Act 2016 all with the aim of streamlining the operations of the land sector but most of these have not succeeded.

Wayumba (2013) notes that most countries in the developed world have in recent times moved to modern computer-based, purely digital whereas developing countries especially in Sub-Saharan Africa are still stuck with traditional and conventional land systems and practices. Malaysia is one of the countries that have implemented e-government initiatives with special focus on ICT in the land sector. Rouhmi (2012) carried out a qualitative study to explore the status of the Malaysian implementation. The study focused on an incorporated, all-inclusive and user-friendly land management plus management system startup to improve the speed together with the value of service delivery to the public.

The study was done via questionnaires with structured interviews and revealed that significant advances have been made in terms of speed together with excellence of service delivery for the public as a result of the ICT integration in the land system. However, their study also revealed that inadequate resources and lack of skilled personnel is a major drawback that hinders full realization of the e-land project's benefits. A major gap in this study is the fact that the author failed to outline the implementation plan for the e-land system. It is not clear whether the system was deployed at the national level or the local jurisdictions, as this could have helped explain the problem of resources and lack of skilled personnel. Gandhi and Armstrong (2012) carried out a study in India to assess the attitude of farmers regarding land distribution and information regarding agricultural sector using information and communication technology. Structures questionnaires together with interview guides were used to collect data and information on various facets associated with the use of ICT in the land sector. The findings revealed information and communication technology use in the land and agricultural industry, especially for countryside farmers has not been adopted fully by each and every farmer. The research recommended that a number of issues are restraining the spread of ICT in the land sector with the most prominent being the gap amid the presently used technology and technology inclination. The study revealed that consolidating together with inspiring groups of farmers' to use technologies like the internet together with home phones is vital to expedite access for ICT facilities. The authors however failed to mention the technological preference of the farmers, despite alluding to the fact that this is one of the factors that led to a low uptake by farmers.

Technology with its inherent ability of not storing data in a central bank but instead storing it in the distributed form in the user's system (Burgwinkel, 2016) has the ability to completely revolutionize the Kenyan land sector. Data management in a technology involves storing data in singular blocks that is then stored on the system of a network of partakers. This sequential order of blocks is then documented via a chain. Further, the transparent, decentralized and time-stamped nature of transaction recording removes the need for third party authentication of records leading to an efficient process. By doing away with third-party verification, the issue of trust within party interests is completely eradicated and users can trust the system without necessarily having to trust other parties or individuals involved in a given land transaction. The argument for using technology for land administration-related issues is rather easy to justify especially in countries where the land administration system is not trusted by users, either due to corruption issues, poor governance or just poor quality of the land register (Vos, 2016). As pointed out by Anand, McKibbin and Pichel (2015) land administration is more often ranked amongst the top most corrupted sectors worldwide.

There is little suspicion that the application of technology in these cases would be the first step in organizing land administration efficiently and restoring trust in land processes and transactions. Romanova et al., (2019) carried out a case research analysis to compare the implementation of technology-based registry in 2 countries namely Honduras and Georgia. The study revealed that the technology that was implemented in both countries against a backdrop of complaints regarding inefficiencies in the land sector succeeded in Georgia but failed in Honduras. The findings further revealed the implementation in Honduras failed because of the lack of a comprehensive country-wide land registry with valid and complete land records, as well as political resistance to changing the status quo. The authors however point out that further research needs to be carried out to investigate the security advantages together with disadvantages of technology when applied in IoT surroundings. A major sticking point of this study is that the authors failed to outline the adjustments in strategy and policy that had to be taken in order for the Georgian implementation to work.

In Kenya, not much has been done regarding the application of technology and hence its

benefits and possible security risk are not known, at the application level. This study will be underpinned on the diffusion of innovation concept that tries to expound how a new idea is adopted through a system over a period of time at different rates. This theory, proposed by Rodgers (1952) operates on the premise that there exist early adopters and late adopters of a technological solution with the early adopters acting as the change agents with regards to adopting this new technology to increase the rate at which such technology is adopted and diffused. This study therefore aimed at offering more insights to the gaps on existing knowledge as it will attempt to elaborate further on how technology as a strategy can be formulated, adopted, and implemented, and its possible impact on public service delivery. The study also looked at the socio-political and institutional context within which such an implementation can succeed and some of the likely security benefits and challenges. The question this study sought to answer was; what is the role of ICT in the public service delivery in the ministry of lands Kenya?

1.3 Research Objective

The study was to investigate the role of digitalization, strategy and public service delivery in the ministry of lands Kenya.

1.4 Value of the Study

This research outcomes is beneficial to policy makers in the ICT sector as regards land matters as it would offer guidance on how to draft and implement novel ICT and service delivery strategies that would result in a more competitive lands sector as regards the various business processes in land transactions and efficiency in service delivery to stakeholders in the land sectors. Policy makers in land administration will benefit from the insights of digital capability of capturing, securing, and dissemination, leading to automation of land transactions.

In practice especially in Public Service Delivery, it is envisaged this study will provide information on how to incorporate the technologies afforded by the fourth industrial revolution such as block chain as platforms for ensuring accountability in processes and procedures. Given the strong desire, as shown by the various initiatives, of the Kenyan ministry of Lands to improve its processes and procedures and also increase transparency

in the land sector. This will ensure processes are automated, efficient, secure, and sustainable and can be easily incorporated into the public service delivery charters.

This study will have some theoretical implications as it will enrich the literature on diffusion of innovation theory, challenges involved and how such theories can be incorporated into public service delivery to make use of the various technologies like internet of things, Artificial Intelligence together with robotics to aid in efficient implementation of processes and systems within the public service. This will help in bringing services closer to the services to the public.

Finally, in academia it is expected that the study will provide additional information and help enrich the existing body of literature concerning the adoption of novel Information and Communication Technologies in public service delivery strategies in Kenya. By supplementing the existing studies, it will be useful for researchers who might be interested in carrying out further research on the application of ICT in the public service.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This section outlines relevant literature on digitization, Public service delivery and its adoption in the ministry of lands Kenya. The literature review will also cover key definitions and components of digitalized technology that will be used in this study. It also covers literature on the factors influencing the adoption of this technology. This is done with the aim of affording the reader better grounds for understanding the essence of the study.

This chapter will also seek to analyze the experience of countries adopting technology in the context of land management and try to draw recommendations for applying the same in Kenya.

2.2 Theoretical Foundation

Theories form the foundational basis of most research work and help in positioning a given study within the framework of similar work along similar research themes. Theoretical framework therefore plays the role of supporting a given work of research by setting up the confines for the proposed research. This study will be anchored on the theory of diffusion of innovation.

2.2.1 Diffusion of Innovation Theory

This theory attempts to expound the innovation decision procedure, aspects determining the adoption rate together with the various classes of adopters. As pointed out by Chen, Gillenson and Sherrell (2002), this theory assists in forecasting the chances and degree of implementation of a new novelty. This theory incorporates five significant characteristics of innovation namely; compatibility, relative advantage, complexity, trial ability together with observability. Relative benefit is described as the extent to which an invention is viewed as being superior to the notion it substituted and this concept is often viewed as one of the greatest forecasters of innovation adoption. Compatibility defines the extent to which an innovation is seen as existence in tandem with the experiences, present value system together with needs of the potential end-users’.

Complexity is the perceived level of striving in accepting innovations and how easy it is

to use them by the final end users. Trialability defines the extent to which tests can be carried out on an innovation on restricted terms. Observability is the extent to which other people can see the results of an innovation (Lee, Hsieh & Hsu, 2011). These definition terms are more often used to describe how the eventual end-user adopts new technologies and how they make decisions regarding the same. According to Catalini and Tucker (2016), diffusion of innovation is highly influenced by early adopters of the technology and they have the potential to obstruct further diffusion if they fail to adopt the technology. Block chain has built up great momentum and progressed from being viewed as a niche innovation to being viewed as a robust and secure platform with many sectors angling to research and adopt it in a bid to secure their systems.

2.2.2 Theory of Reasoned Action

The Theory of Reasoned Action (TRA) stems from the foundation of social psychology and suggests that the adoption of behavior is determined by predetermined intention to perform and this aspect is a function of attitudes on the behavior and subjective norms (Fishbein & Ajzen, 1975). According to Ajzen and Fishbein's (1980) book the focus on understanding human behavior towards solving problems and coming up with public policy will use pre-adoption and post-adoption inner beliefs and attitudes is proven and it can be applied in adoption of fourth industrial revolution technologies in making breakthrough in service delivery.

2.3 Empirical Review and Knowledge Gaps

As pointed out by Thambikeni and Sam (2015), increased transparency in the land sector, more often known for murky dealings, would profoundly impact on both a country's economic development and the value of life of its people. Increased transparency in the land sector will also invariably lead to increased protection of the property rights of individuals. Digitization can also greatly impact land administration issues by ensuring that its benefits reach as many users as possible by making it possible to determine and disseminate various information relating to land.

Novel innovations made possible by new technology helps in disrupting existing

processes, practices and roles within the land sector and helps bring about transparency in land transactions. A study by McMurren, Young and Verhulst (2018) reveal that the Swedish government's use of technology, Geographical Information System-based in all aspects of their land administration right from mapping land parcels to carrying out subdivisions of land has increased transparency. Lazuashvili, Norta and Draheim (2019) further points out that the Swedish authorities have also incorporated technology into the land system by moving all transactions in the real estate sector to technology.

The study reports that the application of technology in the Swedish land registry system has led to efficiency gains especially in the settlement of multi-party transactions and also played a great role in reducing uncertainties that had always existed between the various agents in the land sector. Alketbi, Nasir and Talib (2018) carried out a systematic review on the application of digitization and how it can be used for public service delivery. The study revealed that many governments across the world such as those of the United Kingdom, Estonia, Honduras, Denmark, and Australia together with Singapore already took measures to explore the perspective of ICT in public service delivery. The authors report that digitization is one of the most preferred with the findings revealing that in Dubai, the government is on course to becoming paperless by 2021 through ensuring that all transactions are done using technology.

The analysis of related literature showed that there exists huge potential for use of digital expertise in enabling smart public service delivery. The paper also pointed out that technology itself comes with many security challenges highlighted areas for future research regarding these security concerns that calls for further investigation. The authors concluded that digitalized platforms such as technology can greatly revolutionize the way governments interact with its people as regards delivery of public and private services but also calls for caution because the security impacts of most of the emerging technologies remain largely unknown. The authors mainly relied on literature review of existing literature to make their findings.

Lazuashvili, Norta and Draheim (2019) carried out a study to assess the effectiveness of a technology-powered land registry implemented in Georgia after the country adopted a new ICT-centric strategy to manage its land resources. The authors report that this system

has played a great role in helping Georgia fight corruption in the land sector and resolve disputes over property claims. The research results revealed that the implementation of technology has greatly increased public confidence in property-related record-keeping. It has further made it possible for citizens to validate property-related certificates besides helping authorities make new registrations in a faster way further findings revealed that the service has made it possible for the registration of purchases and sale of existing land titles and a registration of new land titles and plans are afoot to extend it to registration of mortgage services and management of rental issues besides registration of property demolitions.

The study concluded that further research needs to be carried out to determine the adverse effects of linking block chain technology in land registry information as being a novel idea, the long-term impacts are not clear. The authors used a combination of secondary document reviews and interviews to make their findings and reach their conclusions

Oprunenco and Akmeemana (2018) and Shin (2017) reports that Similar initiatives in the application of digitization in the land and property sectors have been carried out in many other countries in the developing world, with the underlying aim being to build trust of the citizens in the land administration schemes. The authors cite countries like Honduras, India, and Georgia as some of the countries at the forefront of applying the emerging disruptive technologies into their land sectors. The studies adopted a systematic analysis method of reviewing published works to come up with the findings. Shin (2017) suggests that emerging economies especially in Sub-Saharan Africa countries can tap into the potential of the emerging disruptive technologies for purposes of upgrading from their traditional paper-based land administration systems to technology-based ones.

In Uganda, a study by Grossman, Plata and Rodden (2018) sought to study the influence of ICT on delivery of service with a focus on a stage that enables county residents to send free together with unidentified messages to regime executives, with the aim of growing the efficacy of communication while lowering the cost. The finding suggested that crowd-sourced ICT have the potential to improve long-term accountability in government service delivery besides enhancing the quality of content-specific reports and responses provided by the public to the government. The study relied on field experiments

involving giving an unrestricted together with anonymous text messaging services via which individuals could swiftly and inexpensively share info and data on service delivery difficulties.

Thambikeni and Sam (2015) carried out a similar study in Tanzania to ascertain the extent to which the application of digitization in land transactions can help in reducing the conflicts always occasioned by ownership disputes. The study analyzed the potential of ICT in assisting in identifying the factors leading to conflicts about land and how digitization can be used to resolve such conflicts through its integration in planning and management activities. The study revealed that the application of digitization strategies in land use planning and land administration can help in conflict mitigations. The study further recommended that the application of technology in the Tanzanian land systems can greatly boost transparency and enhance accountability among and between the various actors in the land sector. The authors relied purely on document analysis to make the findings and reach the conclusions they came up with.

From the review of literature on digitization and its application in the land sector, it is evident that technology has the capacity to radically change the sector in terms of transparency, accountability and traceability. The countries that have digitized their land registries have reported immense gains in terms of transparency and traceability of land records especially with the application of technology. What is not coming out clearly are the capital gains related to the technology Vis a Vis the cost of implementation. There also exist security issues around technology most of which have been recommended for further research.

There therefore exist gaps in knowledge on the issue of capital gains and the security implications. It is hoped that this study will help shed light on these issues and help in reducing the knowledge gap. Most of the studies reviewed have made use of literature search with two making use of field experiments and interviews respectively to make their findings and reach their conclusion. This research will adopt the use of semi-structured questionnaires, interviews, literature search and case study to make its

conclusions. It is hoped that this methodology will add more depth to the findings of the study.

With the advancement on technologies and e-governments, digitalization and service delivery are intertwined. Governments will offer timely, quality and reliable services as afforded by the digital platforms. Ministry of lands will particularly realize increased transparency, traceability and retrieval ability of documents. These variables are measured by the number of digital title deeds or leases processed within a specific time

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This section describes a detailed account of how the study process will be conducted and outlines the approaches that will be used in gathering the data needed to answer the pertinent research questions. This chapter specifically focuses on the following sub-topics; research design, information gathering procedures, data analysis and presentation processes.

3.2 Research Design

Research design refers to a strategy that is used to provide a cohesive way of integrating the varying components of a study so as to meet the objectives of the research. This study will adopt a qualitative approach. The main aim of a study design is to provide a framework for collecting, analyzing and presenting data. The selection of this approach is motivated by the fact that the proposed study will explore a broad area with a focus on perceptions and experiences. This is best achieved using a qualitative approach. The fact that the study will involve analysis of textual data and information also make it the best approach for conducting the study. A case study design was chosen as the methodology of carrying out this study.

Mugenda and Mugenda (2003) defines a case study as an in-depth investigation of an individual, group, institution or phenomena and asserts that most case studies are based on the premise that a case can be located that is typical of many other cases. This will be done to enable the researcher to get on spot surveys of the actual situation on the ground and to ensure that the findings are as objective as possible. Case studies make it possible for a researcher to get detailed information from a given area of study that would have been difficult to obtain by any other means. To this end, the state of Georgia where technology has been successfully implemented in the country's land registry will be chosen as the case study subject. The researcher endeavors to get the details of the entire country as regards technology implementation and record exactly what has been implemented and the challenges and opportunities of the implementation process.

3.3 Data collection

This study made use of respondents from the relevant departments in the ministry of lands that use digitization through an interview guide. Besides content analysis that involves the analysis and interpretation of a variety of relevant literature including books, peer-reviewed journals, public records, and other published works was used to collect secondary data for this study. This helped in giving meaning and voice to the proposed topic. This method is preferred because it has the ability to provide good background information on the technology phenomena and further allow for a comparative analysis of the collected information. Although the analysis looked broadly on the application of technology, special focus will be paid to Georgia, as this is the country that has fully applied technology to its land system and hence presents a good case study.

Additionally, primary data was collected using a structured questionnaire. This method was preferred because structured questions provide for more structured responses that in turn facilitate more tangible recommendations. The wordings of the questionnaire were adapted to maximize understanding. The researcher carried out interviews with ICT experts with knowledge of technology to get their opinion on the technology and its applicability in the Kenyan land sector. This is the group to whom the questionnaire was administered and a questionnaire guide was used to conduct the interviews. The researcher noted down the answers which was later be analyzed.

3.4 Data Analysis

The data collected for this study was analyzed using content analysis. Data management and analysis was done using excel software with the completed questionnaires being checked for completeness and consistency.

The duly analyzed data was presented in the form of tables showing percentages, graphs, plots and in prose form with the data being split into the different aspects' ICT and service delivery. Data collected as a result of this study was analyzed using qualitative means and the results used to compile a report.

CHAPTER FOUR: DATA ANALYSIS, AND PRESENTATION

4.1: Introduction

This chapter presents the study findings and analysis with the study main objective being the core consideration. Further, the chapter is subdivided into three main categories including; Digitization Strategy and Implementation, Impacts of Digitization Strategy Adoption, and Suggestions and Recommendations. Additionally, the study main objective was to investigate the role of digitization in service delivery in the ministry of lands in Kenya.

4.2: Information about the respondents

In this section, the researcher sought to understand the departments and designation of the respondents as he sought to get the finest information from the information and at an authoritative view point. Further, the respondents comprised of Surveyors, National surveying and mapping, Mapping director and Principle Land Surveyor and Trainer. Additionally, the researcher intentionally chose these respondents as they were deemed to be at an authoritative point at the lands ministry and thus giving more accurate and up to date information. In total for instance, the researcher had targeted to interview a total of 8 respondents. The researcher realized a response of 6 out of the projected 8 respondents. This was about 75% response rate which is a good and commendable response rate which is in line with

4.3 ICT Strategy and Implementation

In this section of the research, the researcher sought to understand the effectiveness and the strategies that the ministry of lands has put in place to ensure that digitalization is well implemented and without much hiccups. Further, the researcher sought to understand the respondents' view of the basic characteristics of a successful digital implementation as well as how the implementation would change service delivery at the ministry of lands, Kenya. Similarly, from a knowledgeable point of view, the researcher sought to understand the current gaps that the respondents thought that would be affecting the ministry of lands as far as digital implementation and service delivery is

concerned.

4.3.1 Characteristics of a successful digitization strategy implementation

The findings as per the interviews conducted by the researcher as it concerns the characteristics and major success factors for a successful digitization implementation strategy indicated that Efficiency in inputting data and retrieval from the archives with ease and provide actionable reports was so paramount for the ministry of lands to ensure that they can serve and deliver accordingly to their clients. Further, the respondents indicated that a seamlessness, responsiveness, and a maximum uptime system at the ministry of the lands can be one of the major boost to the implementation and a successful digitization strategic measure. Similarly, the findings indicate that ease of use of the proposed system was a major success factor to ensure that service delivery at the ministry of lands is seamless. Additionally, the respondents indicated that a system that takes into account new technologies as well as getting ways on how to merge them with the existing system was a major boost to the success of the strategy and digitization implementation. Further, the respondents indicated that a system that would be easy and affordable to roll-out and adopt would be their preference and make it easy for the employees and other personnel at the ministry of lands to adopt and use. They additionally indicated that a transparent, inclusive and sustainable as well as reduction of fraud in the sector and Diversification of jobs created digital system implemented at the ministry of lands was a major success factor to ensure that service delivery at the ministry is seamless.

The findings here are in line with a study done by Munyoroku (2012) about ICT adoption and strategy implementation. He found out that for any organization to successfully adopt and implement digitization and any other strategy effectively, there has to be proper

coordination of the available resources as well as affordability and adaptability.

4.3.2 Public service delivery landscape and the new technological developments

The researcher further sought to understand the impact that the new technology developments would bring to the public service delivery at the ministry of lands. From the findings, digitization strategies adopted at the ministry of lands would affect major departments at the ministry. The respondents indicated that a shorter waiting times for service and official response from the service would be one of the key changes that is expected to be witnessed at the ministry offices as at a click of a button, and a service is delivered. Further, the respondents indicated that technological advancements at the ministry would ensure that a change is made on the part of the transactions made at the ministry as it would make transactions faster and non-fungible. This ensures that services and customer satisfaction is at the core.

Additionally the researcher found out that the new technological advancements at the ministry would impact the ministry service delivery positively in such a way that alignment of services to technology makes an organization up to date with the current technology. Similarly, the respondents indicated that with the new technological advancements, there will be more efficiency at the ministry of lands. It is imperative also to note that the respondents indicated that with the new technological advancement at the ministry of lands, there will be realization of improved efficiency in service delivery at the ministry. This is because, technology offers a platform in which an organization can bank on leveraging and utilizing effectively the available resources and hence efficiency at the service delivery level. They further indicated that with improved and more efficient technological advancement, there will be realization of increase in public reliability, authenticity and trust in government.

These findings have further been supported by a study done by Bhatnagar (2014) on digital usage and its effect on the overall service delivery. He points out that leveraging on digitization and technological advancement ensures that organizations and organizational departments are more efficient and thus customer satisfaction that ensures that overall effect is success and customer service effectiveness.

4.3.3 Digitization Strategy formulation and Implementation in public service delivery

The researcher further sought to understand the process that is involved in the strategy implementation and digitization adoption at the ministry of lands. According to the respondents to this study, the ways in which to digitization automates processes and how it plans for and implements emerging and future technology use determines the extent to which the adoption and success of the system will attract at the end of the day. Further, the respondents indicated that to effectively implement and formulate a good strategy in the era of the digital revolution, digitization of systems, processes and outputs in the said organization can be a sure way to ensure that the uptake and implementation is successful. Similarly, public participation and engaging all the stakeholders to the organization can be an effective way to ensure that the process is complete and successful. Additionally, banking on the system and the strategies put in place can be not enough. Working with skilled personnel at the organizational level to ensure that all the strategies aimed at an implementation phase are effected. The respondents further confirmed that for one to be sure that the process and implementation of a strategy is complete, they must satisfy the following sequence. This includes, Needs Assessment programs, Digitalization of all the service provision at the organization or department, Adoption by the various Stakeholders, Roll-out plans geared towards success factor for the strategy and lastly Implementation

phase which will see that the process is completed effectively.

Civic education on public service roles and expectations can be categorized as the most effective and sure method to ensure that programs and initiatives are effectively implemented. Further, Public participation as it pertains the extent to which the strategy has been accepted at the organizational level. Similarly, Private sector participation and other stakeholder participation will ensure that the best is achieved in terms of ensuring the best process for the adoption and implementation. The respondents further indicated that Pilot projects and getting feedback from pilot projects is another form of getting the best for a project. For instance, the ministry of lands getting a digitization technology initiative aimed at ensuring that the service delivery at the ministry is seamless. Similarly, adjustment from pilot project feedback will ensure that the projects and the strategies being implemented are up to the standard and can be benchmarked effectively. The respondents further indicated that civic education on digitization strategy, Milestones as well as challenges. Implementation of digitization project will be a crucial way to look at the effectiveness and the best means to ensure that strategies and implementation progress is up to the latter.

4.3.4 Gaps between strategy goals and current operations

As it regards to the public service delivery and the strategic goals for the ministry and the current operations, the researcher sought to understand what the respondents felt in regard to this and what can be done to ensure that the gaps are sealed efficiently. The respondents indicated that lack of skills and enough training workforce training could be a major drawback to the implementation of the strategy. This was a major gap as it differentiates between those who know and those who do not know. It will be a time consuming affair and thus low productivity which may lead to low morale. Similarly, the

respondents indicated that speed of the system being adopted, coverage in terms of who can access the system and with what means, user awareness and other strategies needed to be addressed in order to ensure that the strategy is well implemented and gaps closed. User needs in terms of user interface and the machine interface and their compatibility was also a major concern. The respondents indicated that with a proper training and skills upgrade for the new technologies being implemented would ensure that the gap in terms of knowledge base is well sealed.

Further, the respondents pointed out issues to do with infrastructure gap. This is always a crucial aspect whenever an organization wants to implement any strategy. They always need to ensure that the strategic needs and the physical needs of the system being implemented both converge at some point. This will ensure that the organization meets the system requirement and the infrastructural needs. Further, capacity building, Bureaucracy in service delivery at the organizational level widens the gap between what is actually required and what we actually need. The respondents indicated that bureaucracy challenges at the ministry was a major drawback that was meant to destroy the image and good name of the strategy being implemented. Further, they indicated that organizations need to look at the existing gaps before embarking on a strategy at the organizational level to ensure that gaps are properly sealed.

Redundancy and duplication in roles was another issue that was looked as a gap between the existing system and what needs to be implemented. According to the respondents, redundancy was a drawback in that it came as an expense to the organization while on the other hand sitting on the available resources hence restraining them.

This is supported by a study done by Bhatnagar (2014) where he found out that for any

system to function properly and address the current challenges at the organizational as well as at the departmental level, one has to identify the specific gaps in the existing system before deciding where and who to engage as a shareholder. This will ensure that the gaps are largely and properly addressed.

Section B: Possible Impacts of digitization Strategy Adoption for Public Service Delivery

The finding on the technologies incorporated into public delivery platforms revealed that with the rapid technological advancement within the digital industry such as transmission technologies, cloud and virtual environment, security platforms, web technologies, storage infrastructure and virtual payment platforms, have enabled effective, efficient and secure delivery of public services to vast majority of users through platforms that are scalable , have multiple points of presence and ensure confidentiality in public service delivery. This makes access and use of public service delivery platforms more convenient to majority of the Kenyan population.

4.4.1 Benefits for the implementation of digitization technologies like Technology in the public service delivery

ICTA technologies and strategy implementation were identified by the respondents. They also indicated that the immediate response and ability to perceive patterns enhancing service delivery that will benefit both the ministry and the various stakeholders. Higher transactions, improved transparency will be realized, broad Access as well as ensuring efficiency. Further, the respondents indicated that the duration taken to deliver a service will be reduced hence customer satisfaction. The benefits attributed further included increase in Efficiency of the service delivery, better service delivery, transparency. Reduction in graft as well as instilling trust in government.

4.4.1 Improvement associated with Technology

The findings identified some areas that have highly benefited from the incorporation of ICTs into public service. For instance, the current digital migration platform has brought about accountability and transparency in the ministry of lands transactions as well land search and title deeds migration. The services portal further offers convenience in service dispensation, timely services, optimize service capability, and one stop non-stop. For instance, at the lands ministry, “the websites and the lands portal, e-jiji has increased Public awareness through the provision of information that educate them on various aspects” said one of the respondents at the ministry. Facilitates processing of so many government services in a convenient, effective and efficient manner to the Kenya citizens. Business continuity and security is also boosted in public delivery platforms ensuring reliable and secure service dispensation to the citizens of Kenya.

Further, the respondent indicated that, “digital literacy and the ICT adoption has made all the services transparent. This has been enabled by the fact that users of the system will only be able to access it once they have a computer and enabled internet access. This has created a need for everyone to have at least the basic knowledge of computers and how to operate them effectively”.

4.4.2 Impact of the adoption of new ICT strategies

The researcher also sought to identify some of the benefits of adopting digitization in delivery of public service. The respondents highlighted the following as some of the benefits: reduced cost and ease of doing business, enhanced revenue collections by the ministry of lands, efficiency in government operations, reduction of duplication, cost saving or avoidance, ease of decision making due to availability of information, cost efficiencies and higher productivity based on comparison of peer benchmarks. Further,

the findings are in line with the main objective of Kenya's Vision 2030 that intends to make the country prosperous and globally competitive (Kenya Vision 2030, 2008). Within the economic pillar of the vision, ICT enabled services as seen as a key driver to bring about economic prosperity and improve global competitiveness of Kenya. The Government, therefore, recognizes that resourceful nature information and as such it must be produced, collected, structured, secured and well-maintained to enhance national prosperity.

4.5 Discussion of findings

The digitization process was undertaken to address various problems in the lands sector such as missing or worn out land records, inadequate capacity building and poor integration of the various departments in the lands sector.

The then Cabinet Secretary for Lands was Hon Charity Ngilu who was spearheading the process. The ultimate objective of the exercise was to promote efficiency and transparency within the Lands Sector. This marked the commencement of the digitization of 57 land registries which maintained manual records. The process was also meant to facilitate efficient service delivery, ease of tracking of files in the registries and development of a property database accompanied by a property value database at the valuation department of lands. All this would eventually improve the ministry's image which had been tainted in the public domain. The computerization also facilitated the reconstruction of records registered under Government Lands Act era which were in dilapidated state making it hard to carry out searches.

Developing an efficient file tracking system for all settlement plot files would enable efficient allocation of settlement files, save on time for file retrieval, easier and safer

storage of files and sensible timelines can be placed to address the settlement issues. Basically, this would facilitate a seamless flow of activities. A Document Management System (DMS) has been proposed for approved physical development plans in Kenya. This lessens time taken in vetting and verifying plans delivered for approval by the county physical planners. The time taken by officers, professionals and general members of the public for access and retrieval of authenticated survey plans is also reduced.

A Document Managing System for Land Title Documents Records is also part of the exercise. It involves scanning, indexing and archiving land rent cards, deed files and green cards. A Land Rent Information System was also developed to manage the collection of land rate and give demand notices. The system involves the creation of digital topographical maps and setting up the Kenya National Spatial Data Infrastructure whose objective is to create an avenue of discovery and access to spatial data.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The general objective of this study was to establish the DIGITALIZATION, STRATEGY AND PUBLIC SERVICE DELIVERY IN THE MINISTRY OF LANDS KENYA. This Chapter seeks to present a summary of the major findings, conclusions drawn from the findings and recommendations derived from the data analysis.

5.2 Summary

As per the findings, the characteristics and major success factors for a successful digitization implementation strategy indicated that Efficiency in inputting data and retrieval from the archives with ease and provide actionable reports was so paramount for the ministry of lands to ensure that they can serve and deliver accordingly to their clients. Further, the respondents indicated that a seamlessness, responsiveness, and a maximum uptime system at the ministry of the lands can be one of the major boost to the implementation and a successful digitization strategic measure. Similarly, the findings indicate that ease of use of the proposed system was a major success factor to ensure that service delivery at the ministry of lands is seamless.

A system that takes into account new technologies as well as getting ways on how to merge them with the existing system was a major boost to the success of the strategy and digitization implementation. Further, the respondents indicated that a system that would be easy and affordable to roll-out and adopt would be their preference and make it easy for the employees and other personnel at the ministry of lands to adopt and use.

The findings indicated that applying some digitization strategies with an aim of improving the service delivery in the firm provides management with a comprehensive picture of business operations, the methodology facilitates communication and understanding of business goals and strategies at all levels of an organization and that the concept provides strategic feedback and learning. Initiatives are continually measured and evaluated against industry standards that the strategy in place helps reduce the vast amount of information the company information technology systems process into essentials and a unique competitive advantage by the firm is achieved. The challenges that have been encountered in the process of strategy implementation and application is the lack of understanding of the digitization strategies, lack of visibility of the corporate and divisional scorecards, lack of support of the digitization, some strategies tend to be high-level, future looking with ideals and aspirations. While valid to fuel the soul of the organization, they run the risk of diluting the ability for translation into an effective strategy.

According to the respondents, there was an absence of common vocabulary on the kind of digitization and strategic moves to be implemented, a high tendency to get lost in the details and technicalities of the technology advancement. The comment that was made on these by the respondents is that more than half strategies devised by organizations are never actually implemented. At a time of increasing competition and globalization; shorter lead times and increased customer sophistication, the effectiveness of human resources strategy implementation is even more important (Mouritsen, & Larsen, 2005). This defines the success or failure of the digitization strategies being implemented in organizations.

5.3 CONCLUSION

With regards to digitization of an organization, issues to do with infrastructure gap and the needs that the organization makes for the core of the digitization strategy in question, (Mouritsen, & Larsen, 2005). According to the results of the study conducted, this is always a crucial aspect whenever an organization wants to implement any strategy. They always need to ensure that the strategic needs and the physical needs of the system being implemented both converge at some point. This will ensure that the organization meets the system requirement and the infrastructural needs. Further, capacity building, Bureaucracy in service delivery at the organizational level widens the gap between what is actually required and what we actually need.

Thus, in this regard, it is imperative to note that a system that takes into account new technologies as well as getting ways on how to merge them with the existing system was a major boost to the success of the strategy and digitization implementation. Further, the respondents indicated that a system that would be easy and affordable to roll-out and adopt would be their preference and make it easy for the employees and other personnel at the ministry of lands to adopt and use. Similarly, developing an efficient file tracking system for all settlement plot files would enable efficient allocation of settlement files, save on time for file retrieval, easier and safer storage of files and sensible timelines can be placed to address the settlement issues. Basically, this would facilitate a seamless flow of activities.

5.4 Implication of the Research Study on strategy implementation

The research findings will be beneficial to the digitization and technology departments in the organizations with the aim of ensuring effective digitization strategy implementation and digitization as the study findings when implemented by the organizations or any other institution. The study findings and recommendations would greatly improve Ministry of Lands; it would be of great value to the Technology advancement practitioners and consultants to enhance effective digitization strategy implementation and understanding on how to mitigate strategy implementation hurdles in organizations. On the other hand, the policy makers would utilize the study results to formulate policies that are consistent with the current trend of digital migration practices that are acceptable globally and which guarantees clear translation of organization goals into understandable and implementable strategies.

5.5 Limitation of the Study

The main impediment of the research was the inability to get the respondents most of who were holding managerial positions. However, a interview quiz, email invitation and telephone calls partly mitigated the obstacle. The sending of interview quiz in advance was critical in that it made the respondents get appraised with the quiz thus making it smooth sailing during the actual interview. The data therefore predominantly zeroed on the top management thus leaving out critical players like the customers

5.6 Recommendations for further research

This research took a bias approach and relied more on qualitative aspects with a little qualitative aspect to confirm some results. Future research could take a more qualitative

approach so that knowledge in this area is enhanced by comparing results from a purely qualitative study with the findings of this study. Despite the few limitations of this study, the findings would address the frequent failures in human resource strategy implementation and spur effective implementation by providing information that will enhance successful translation, understanding and implementation of human resource strategies. The study would be an important reference for future research on balanced scorecard and human resource strategy implementation in consultancy firms in Kenya

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APPENDIX: INTERVIEW GUIDE:

Consent Declaration:

The information and responses provided in this questionnaire will be strictly confidential and will not be used for any other purpose than for this research and any other personal information obtained through this interview will be treated as confidential.

Introduction

Interviewer presents the research topic and explains the goal of the interview.

Section I: Information about the Interviewee

1. Name
2. Organization.....
3. Role in Organization.....

Part A: ICT Strategy and Implementation

1. In general, how would you characterize a successful ICT strategy implementation?
What are the probable success factors?
2. How do you think the public service delivery landscape will change in light of new technological developments?
3. What, in your opinion, do you think is the process of ICT Strategy formulation and Implementation as regards public service delivery?
4. As regards public service delivery, what are the current gaps between strategy goals and current operations?

Section B: Possible Impacts of ICT Strategy Adoption for Public Service Delivery

1. What are the likely main benefits for the implementation of ICT technologies like Technology in the public service delivery?
2. What improvement will the adoption of Technology technology bring into the public service delivery in processes especially in the land sector?
3. Which areas of public service are likely to be immediately impacted by the adoption of new ICT strategies?

Section IV: Suggestions and Recommendations

1. What other technologies, apart from technology, are currently available and how can they be integrated into public service delivery platforms?

2. What are some of the steps that should be taken to overcome the likely challenges arising from the adoption of a new ICT strategy?
3. Any other comment in regards to adoption of ICT strategies in public service delivery?