An assessment of e-records readiness as a pre-requisite for e-governance in Tanzania: a case of selected public offices

Gwakisa Kamatula
National Museum of Tanzania (NMT), Tanzania
Email: gwakisa.kamatula@nmt.go.tz

Abstract

E-Government is when the government owns or operates systems of information and communication technologies that transform relations with citizens, the private sector, and other government agencies so as to promote citizens' empowerment, improve service delivery, strengthen accountability, increase transparency, and improve government efficiency (UNESCO, 2005). In order to have an effective implementation of e-government in the country, the availability of infrastructure and capacity necessary for the management of records and information in electronic environment (e-readiness) are crucial. This paper presents findings from a study that assessed the existing e-readiness for effective implementation of e-government in Tanzania. The study used two theories namely: the International Records Management Trust (IRMT) E-records Readiness Tool (2009) and World Bank E-government Handbook for Developing Countries (2002) as guidance. In the study, data were collected through interviews and personal observations and were analysed using thematic analysis. Findings of the study have revealed that despite the government's efforts to embrace ICT tools across the Tanzania public service, the management of e-records is not yet streamlined in many government offices. It was also evidenced during the study that record personnel, action officers, and IT staff were not conversant with procedures and practices of e-records management and had inadequate knowledge and skills pertaining to e-records and their related systems. Based on study findings, the paper recommends what needs to be done for effective e-readiness as a pre-requisite for e-governance across the public sector.

***Keywords*:** e-records, e-government, RAMD, e-GA, digital repository

Introduction

An E-government is an enabler towards accelerating processes, delivering services to citizens and businesses, increasing transparency and accountability, while also lowering costs (United Republic of Tanzania, 2008). E-government implies the act of delivering services through the internet, telephone, information kiosks, wireless devices, and other communication systems (Colesca & Liliana, 2009). E-government may be characterized as an innovative attempt to take advantage of ICTs to facilitate access to government information and services in order to support social, economic and political development, improve the quality of public services, and provide an opportunity for government-to-government (G2G), government to business (G2B), and government to citizens (G2C) communication (UNESCO, 2005).

UNESCO (2005) suggests that, although the entire gamut of e-government involves a large number of entities and processes, there are four primary types of interactions that form the foundation of e-government deployment. Among these types of interactions is the G2G; a

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government to government interaction which involves sharing data and conducting electronic information exchange amongst various government departments and other entities. This exchange could be both intra and inter agency at the national level as well as exchanges among national provincial and local levels (UNESCO, 2005).

Another type of interaction is the G2C. This stands for Government to Citizen interactions in which electronic dissemination of information and electronic delivery of services take place to fulfil the primary objective of e-government. This form of interaction is less time consuming and convenient as it allows online transactions such as obtaining certificates, reviewing licences, paying taxes/bills, and applying for government schemes to be available for 24 hours of all the seven days of a week. Further, such an interaction enables citizens to participate in the process of policy formulation.

The third form of interaction, as per UNESCO (2005), is the G2B. This is a government to business form of interaction. It involves improved and efficient procurement of goods and services by the government from commercial business entities. G2B also includes sales of government goods to the public and has the potential for reducing costs through improved procurement practices and increased competition. UNESCO (2005) further denotes that the G2B type of interaction facilitates exchanges between the government and businesses regarding licences, taxation, and policies issued for various sectors.

The last one of the types is the G2E type of interaction that forms the foundation of E-government. This is the government to employee interaction which covers employment opportunities, work guidelines, rules and regulations, benefits and pay structures for government employees, employee welfare schemes, work rules and regulations, government housing, etc (UNESCO, 2005).

E-records are the recorded information, documents, or data that provide evidence of policies, transactions, and activities carried out in e-government and e-commerce environments (IRMT, 2009). However, the management of e-records is associated with many challenges ranging from inadequate infrastructure, absence of legislation and organizational policies, low awareness of the role of records management in support of good governance, absence of core competencies, lack of appropriate facilities, and absence of migration strategies among other issues. As such, IRMT (2009) developed an e-records assessment tool that could assist governments and agencies to assess their e-records readiness against internationally accepted standards. The IRMT (2009) is convinced that the e-records readiness tool can assist organizations to develop plans and strategies with which to improve records management in both paper and digital formats in a bid to implement effective e-government.

IRMT (2009) observes that, adequate infrastructure for managing e-records created out of e-government services is very crucial. Similarly, records and information classification schemes and retention and disposal schedules are also necessary for protecting e-records so that they remain complete evidence of organizational business transactions. Without proper protection and preservation of such formats of information, there is a likelihood of jeopardizing the substantial investment required to launch e-government services. Further, governments may face increased operating costs; gaps in recorded memory; reduced public access to entitlement and erosion of rights; inability to comply with laws and policies; weakened capacity for decision making; increased legal, financial and political risks; and reduced transparency, accountability, and trust (IRMT, 2009:2). Based on these facts, the *E-readiness Tool*, which is discussed in section 4 (theoretical framework), was designed to be

used along existing e-government readiness tools to permit a high-level assessment of the infrastructure and capacity necessary for the management of records and information in electronic environment.

E-government is characterized as an innovative attempt to take advantage of ICTs to facilitate access to government information and services in order to support social, economic, and political development; improve the quality of public services; and provide an opportunity for government-to-government (G2G), government to business (G2B) and government to citizens (G2C) communication (UNESCO, 2005). As such, the government of Tanzania has been striving to adapt and implement e-government throughout the public service. The government, for instance, has: built a mini-data centre that is intended to host and operationalise various e-government systems and data. The government also built the national optic fibre backbone to network all ministries, departments, agencies and regional administrations for reliable internet connection; purposely established ICT departments in all public offices; and has successfully revamped the government portal. Some of the e-services that are currently operating include: online job applications; registrations; tax payments; utility bills payments; obtaining permits; obtaining certificates; obtaining licences; making government announcements and obtaining forms and various information from ministries and departments (URT, 2013). Despite these efforts and achievements reached so far, some important aspects of e-readiness are not yet in place hence hampering full adoption of e-governance. This study therefore sought to assess the government's e-readiness for successful implementation of e-government within the public sector. The study aimed at assessing the government's e-records readiness for effective implementation of e-government in Tanzania. Specifically were to:

1. Determine the availability of policies, standards, and guidelines for the management of e-records;
2. Examine the ICT infrastructure and capacity in public offices;
3. Determine the digital preservation strategy in public offices; and
4. Identify the e-records knowledge and skills of staff in the Public Service.

Theoretical framework

This study reviewed a number of theories related to e-records management and e-government implementation. However, a triangulation of the IRMT E-Readiness Tool (on electronic records management) and World Bank E-government Handbook for Developing Countries (on e-government implementation) was used as the theoretical framework of this study. The elements of these frameworks were used to provide guidance to the study.

The IRMT E-readiness Tool

IRMT developed an e-records assessment tool that could assist governments and agencies to assess their e-records readiness against internationally accepted standards. The IRMT (2009) is convinced that the e-records readiness tool can assist organizations to develop plans and strategies with which to improve records management in both paper and digital formats in a bid to implement effective e-government. IRMT (2009) observes that adequate infrastructure for managing e-records created out of e-government services is very crucial. Similarly, the records and information classification schemes and retention and disposal schedules are also necessary for protecting e-records so that they remain complete evidence of organizational business transactions. Without proper protection and preservation of such information, the likelihood of jeopardising the substantial investment required to launch e-government services stays high.

Further, any government may face increased operating costs; gaps in recorded memory; reduced public access to entitlement and erosion of the rights; inability to comply with laws and policies; weakened capacity for decision making; increased legal, financial and political risks; and reduced transparency, accountability, and trust (IRMT, 2009:2). Based on these facts, the E-Readiness Tool was designed to be used along existing e-government readiness tools to permit a high-level assessment of the infrastructure and capacity necessary for the management of records and information in electronic environment. The tool can be used to carry out risk assessments of e-records readiness at government-wide, national level, and agency-specific levels.

The IRMT tool consists of twelve key components of e-readiness out of which, six components address national and government-wide e-readiness while the other six components address agency-specific e-readiness. The national and government e-readiness components include (IRMT, 2009:2-14):

- Legal mandate for the government-wide public records and information
- Legal framework for e-commerce activities
- Freedom of information and protection of Privacy Legislations
- Government-wide ICT infrastructure and Capacity
- Government-wide e-records management standards and guidelines; and
- Government-wide digital preservation strategy.

The agency e-records readiness consists of six components including:

- Policies and responsibilities for records and information management;
- Tools and procedures for records and information management;
- E-records management products and technologies;
- Resources and training for records and information management personnel;
- Internal and public awareness of records and information management; and
- Compliance with records and information management policies and procedures.

The IRMT e-readiness tool is considered relevant to the present research because the tool addresses important aspects for effective e-records management as well as e-government implementation strategies. The IRMT e-readiness tool addresses issues that would assist governments and organizations in developing plans and strategies with which to improve the management of electronic records in a bid to implement an effective e-government. For instance, IRMT (2009) observes that government agencies must adhere to e-records standards and functional requirements to ensure that ICT systems consistently create, capture, organize, store, search, retrieve, and preserve e-records and protect their integrity and trustworthiness. These were among the key issues that the current study was researching on. Therefore, the IRMT e-readiness tool served as a guidance on which the researcher based the assessment of various aspects regarding e-records and e-government in the public service of Tanzania.

World Bank E-government Handbook for Developing Countries

World Bank (2002) declared that there is no e-government theory; and that knowledge comes from practice while excellence comes from best practices. This entails that, as of now, there is no comprehensive theory of e-government. As such, it is right to note that e-government concepts are informed by circumstances, practices, and experience. The design of effective e-government systems as a result of ICT is guided by a sound legal framework and strategies that are meant to simplify service delivery to the public and elimination of unnecessary government bureaucracies.

The World Bank E-government Handbook of 2002 was designed to catalogue and present key resources on e-government implementation in the developing world. According to World Bank (2002), E-government is the use of information and communications technologies (ICT) to transform a government by making it more accessible, effective, and accountable. E-government includes:

- Providing greater access to government information;
- Promoting civic engagement by enabling the public to interact with government officials;
- Promoting civic engagement by enabling the public to interact with government officials;
- Making the government more accountable by making its operations more transparent and thus reducing corruption opportunities; and
- Providing development opportunities, especially those that benefit rural and traditionally underserved communities (World Bank, 2002:8).

The handbook saves as an important framework for the current study as it offers a concrete guidance to government officials and other stakeholders in the developing world, Tanzania included. The handbook presents a roadmap for policy makers who consider e-government as a mechanism for reform. It therefore shows how it can be done and brings to light the realities and challenges that can be faced. However, World Bank (2002) cautions that although E-government can facilitate change and create new and more efficient administrative processes, it is not a panacea as it will not solve all problems of corruption and inefficiency; nor will it overcome all barriers to civic engagement. Similarly, it is rightly observed that, e-government does not happen just because an organization buys more computers and puts up a website. Rather, e-government requires planning, sustained dedication of resources, and political will (World Bank, 2002).

Various governments have different strategies for building e-government. However, countries that began with smaller projects in phases are identified as most successful. In this regard, World Bank (2002) divides the process of e-government implementation into three main phases. According to World Bank (2002:10):

> These phases are not dependent on each other, nor need one phase be completed before another can begin, but conceptually they offer three ways to think about the goals of e-government (World Bank 2002).

The three e-government phases proposed by World Bank (2002) are:

Phase 1: Publish - using ICT to expand access to government information

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This involves the process of publishing government information online, beginning with rules and regulations, documents, and forms. This is an important phase of e-government which seeks to disseminate information about government and information compiled by government to as wide an audience as possible. This enables citizens and businesses to readily access government information without having to travel to government offices, stand in long lines, or pay bribes to be served. For effective implementation of the *Publish Phase,* the World Bank (2002:10) recommends governments to:

- Begin with a strategy to get information online, with appropriate milestone;
- Post information of value to people in their daily lives, and emphasize local language content.
- Consider a mandate that all agencies publish a specified range of information online.
- Seek attainable results using available resources.
- Design sites so they are easy to maintain, and sustain funding to ensure that information is updated regularly.
- Focus on content that supports other goals, e.g. economic development, ant-corruption, attracting foreign direct investment.

Phase 2: Interact - broadening civic participation in government

This is the second phase of e-government implementation where the government involves citizens in the governance process by engaging them in interaction with policy makers throughout the policy cycle and at all levels of government. Interactive e-government involves two-way communications, starting with basic functions like email contact information for government officials or feedback forms that allow users to submit comments on legislative or policy proposals. This phase may also include the creation of citizen/government forums where people can exchange ideas, broaden public awareness of issues and establish new opportunities for activism not constrained by distance (World Bank, 2002). In this particular phase, governments are advised to:

- Show citizens that their engagement matters, by informing them of the outcomes of their online comments.
- Break down complex policy issues into easy-to-understand components.
- Be proactive in soliciting participation; use traditional media to publicise online consultations.
- Engage citizens collaboratively in the design phase.

Phase 3: Transact - making government services online

In this phase, governments create websites that allow users to conduct transactions online. Governments are expected to make use of the internet to offer various online services. Transact website offers a direct link to government services available at any time. In this regard, citizens can use the opportunity of the available technically enhanced websites to conduct complete and secure transactions on-line 24/7, without necessarily visiting government offices. The important drivers under this phase are cost savings, accountability through information logs, and productivity improvements. Recommendations for successful implementation of this phase of e-government include:

- Target audiences that will have immediate use for the online services.
- Enlist the support of those who will be using the site and address the concerns of government workers whose role will change as a result of the innovation.
- Integrate e-government with process reform, streamlining and consolidating processes before putting them online.
- Recognize that initial investments in transact systems can pay off over time in terms of cost savings and increased revenue.
- Create a portal for transact services (World Bank, 2002).

This study has found the World Bank e-government Handbook for Developing Countries relevant to its aim as it explicitly explains the key phases of e-government implementation in developing countries, Tanzania included. Contrary to other models of e-government, the World Bank Handbook tool presents a roadmap for policy makers who consider e-government as a mechanism for reform.

Research methodology

This section presents the research methodology used in conducting this study. The methodology includes such aspects as research design, study target population, sampling procedure and justification of sample size, data collection methods, and data analysis and presentation.

Research Design

This study adopted a case study design. This design was preferred as it allows for an in-depth investigation of the problem at hand. A case study is suitable when the research being conducted is an in-depth study of less than 50 cases (Mouton, 2001).

Target population

The study population from which a sample was selected included the: President's Office Public Service Management and Good Governance (PO-PSM&GG); Records and Archives Management Department (RAMD); Tanzania E-Government Agency (e-GA), and Tanzania Communications Regulatory Authority (TCRA).

The study used purposive sampling which is a non-probability sampling technique to generate a sample. Purposive sampling is a type of sampling where items of the sample are selected deliberately by the researcher and his choice concerning the items remains supreme (Robson, 2011; Creswell, 2009; Neuman, 2007). In this study, a sample of 50 respondents out of a population of 105 was selected. The criteria for such a selection based on the fact that in non-probability sampling, the researcher may purposely select particular units on the basis that the small mass selected out of a huge one will be typical or representative of the whole (Babbie, 2011; Creswell 2014; Bryman, 2012).

Data collection methods

In this study, interviews and personal observations were employed to collect data. This multi-method approach is known as *triangulation*. The researcher believes that these methods were more suitable for the data collection because triangulation improves on data quality by filling

in the gaps that may be left out by single data collection methods. While interviews were the dominant method for collecting data, a non-participatory obtrusive observation was used to validate the facts obtained from them.

Data analysis

In this study, qualitative data from interviews and personal observation were analysed using thematic coding analysis approach. This technique can be used as a realistic method which reports experiences, meanings, and the reality of participants (Robson, 2011). Keywords and themes that emerged from data were grouped or classified as guided by research objectives. Interview results were presented using relevant and substantive quotations where necessary. There was a deliberate use of the 'voice' of various participants by clearly stating whose opinions were being represented. Themes of varying sizes, words, and phrases connected to e-record management and e-government implementation strategies were connected to identify relevant subject areas in the data.

Response rate

A total number of 30 interviewees out of 50 participated in the study. These included 10 (33.4%) action officers, 8 (26.6%) records staff, 6 (20%) IT staff, 3(10%) archivists, and 3 (10%) records managers. These represent a response rate of 60%. The response rate of 50 (100%) respondents was not reached due to the fact that some respondents had travelled on-duty where others were reported to have tight schedules according to their positions. However, since Babbie & Mouton (2001) regarded a response rate of 50% adequate, 60% as good and 70% very Good; the researcher regards the rate size of 60% as sufficient. Table 1 provides a description of the response rate.

Table 1: Response rate

Respondents' cadre	Expected No.	Actual No.	Percentage
Action Officers	24	10	33.4/%
Records staff	10	8	26.6/%
IT Staff	10	3	20/%
Archivists	3	3	10/%
Records managers	3	3	10/%
Total	**50**	**30**	**100/%**

Source: Field Data

Key study findings

This section presents key findings of the study based on its objectives as follows.

Policies, standards and guidelines for e-records management

One of the study's objectives was to identify the availability of functioning policies, standards and guidelines for the management of e-records. With regards to policies, the findings indicate that currently the national e-records management policy is lacking. Although records staff reported on the availability of the National Records and Archives Management Policy (NRAMP) of 2011, the study revealed that, the mentioned policy does not reflect specific values, principles, aims, and objectives of electronic records management. In support of this observation concerning NRAMP, one respondent asserted that:

> *...the policy does not provide guidance which is expected to define and assign responsibilities on e-records management and authorities to officers who directly come into contact with the e-records.*

Meanwhile, a comprehensive e-records management guideline was reported to be non-existent in all offices that participated in the study. It was however noted that, there existed two guidelines namely; the Registry Procedure Manual, 2005; and the Guideline for procedures of managing Personnel records in the Public Service, 2013.These two guidelines seemed to accommodate some aspects of electronic records. For instance, the Registry Procedure Manual has a small section that provides for procedures of managing official emails.

In addition, the records personnel observed that the Tanzania Registry Procedure Manual of 2007 was meant for paper based records. It therefore lacks important aspects concerning e-records management procedures and processes. Further, respondents reported that at times they make use of circulars and guidelines which are normally issued by the government from time-to-time in providing institutional and operational guidance and compliance with regard to e-Government implementation initiatives in the public service.

ICT infrastructure

The availability of ICT tools is the basic underlying factor for e-records management (ERM) and e-government. Under this aspect, the study sought to establish the capacity of public offices in terms of ICT infrastructure. The study findings established that the government of Tanzania

has harnessed ICT and its related tools in a bid to adopt e-government throughout the public service. The data from 3 RAMD staff and 4 IT staff indicated that the government of Tanzania has made commendable efforts on the aspect of ICT tools due to the fact that at least all public offices have functioning ICT departments and are installed with a number of ICT tools including: computers, Local Area Networks, internet facilities, fax machines, printers, and telephones. The study results further revealed that, the government has built the national optic fibre backbone to network all ministries, departments, agencies, and regional administration hence making it possible to connect them with internet which enables them to install and utilise modern communication technology facilities such as teleconferencing services. In another scenario, 1 respondent from e-GA reported that the government has successfully revamped the government portal which was developed in 2010 under the domain name ***www.egov.go.tz*** to serve as the government's one-stop centre for information and services. One officer from e-GA confirmed that:

> ...the new government portal with the domain name **www.tanzania.go.tz** is a single electronic window web-enabled interface that provides comprehensive, accurate, and reliable one-stop centre for information and services from government institutions. This is a positive step towards e-government implementation in our country because institutions and the general public can now share and access information more easily from anywhere in the world as long as they are connected to the internet.

However, it was evident that TCRA and e-GA were more equipped in terms of technological infrastructures, ICT facilities, and competent staff while RAMD and PO-PSM&GG were lagging behind. Unreliable power supply; unreliable internet connection; and the absence of effective e-records policies, standards, and guidelines were also reported as bottlenecks to effective implementation and practice of e-government. Similarly, facilities for storage of digital records, including digital repositories were not yet available.

Strategies for digital preservation

E-records are fragile and their integrity depends on the ever changing hardware and software. Unless the records are carefully protected, governments will be unable to guarantee their availability, authenticity, and usability overtime. Based on these facts, respondents were asked to identify strategies in place for secured preservation of records in digital format. Study findings indicate that, public offices under the study had no sufficient strategies for the long-term preservation of public records in electronic format. Respondents of this study assumed that system administrators or new technologies will take care of e-records so that they can be accessible over time. With regard to the mandate of ICT departments in public offices, it was revealed that system administrators were only responsible for: ensuring the availability of network connection; maintenance of system software, ant-viruses installation and updating; information back-ups; and providing assistance to end users of ICT facilities and application systems. Further, it was revealed that for security of e-records within their premises, physical burglary doors were fixed in server rooms, and anti-virus software and cyberoams were installed. Information encryption and the use of strong passwords were identified as other means being utilized to preserve records in e-format.

However, it is worth noting that during the study, e-GA was found to have some strategies in place for the long term preservation of e-records. The findings indicate that, e-GA has facilitated the construction of the National Internet Data Centre (NIDC) in Dar es Salaam as part of the implementation of the National ICT Broadband backbone (NICBB). According to one senior officer from e-GA, the NIDC provides state-of-the-art infrastructure with a network platform for big data, cloud computing, data mining, and other similar data services to be hosted from government and business institutions. Additionally, it was learnt that e-GA has installed a Modular Data Centre to serve as a Disaster Recovery for government information under the NIDC. In addition, it was noted that, e-GA has implemented the Government Network (GovNet) for secure data, voice and video communications where a total of 72 MDAs have been already connected, and the connection of 77 Local Government Authorities is underway. However, when respondents from e-GA were asked to mention any challenges related to the secure preservation of e-records, they identified various challenges including: lack of approved e-records policies; lack of procedures, practices, principles and standards; scattered and uncoordinated efforts; suboptimal infrastructure; and lack of reliable digital repository and limited Human Resource capacity.

Consequently, study results indicate that despite the fact that the national archives (RAMD) has been formally mandated with the responsibility of preserving public records in all formats; it was evident that insufficient budget and inadequate skilled personnel and facilities to facilitate permanent preservation e-records across the public service were among factors inhibiting RAMD from developing and implementing mandatory government-wide standards for file formats, storage media, and preservation metadata to be used in government computer systems.

E-records management knowledge and skills

Effective management of e-records requires proper training and experience. In this aspect, the study sought to determine the level of knowledge and skills of respondents on issues pertaining to e-records management. The findings indicated that, at least all records staff who participated in the study had qualifications of a Diploma in Records Management attained from the Tanzania Public Service College (TPSC). However, it was further revealed that the training on e-records was inadequate due to insufficient curriculum contents for the records management programme, particularly on e-records management modules which were also reported to be more theoretical than practical. As a result, it was evident that most records personnel had inadequate knowledge and skills on issues related e-records management systems including metadata identification, and procedures for e-records storage, distribution, and disposition.

It also emerged from this study that, action officers who are also key players in official records for various transactions and decision making, were lacking adequate knowledge and skills on e-records management. On the other hand, the ICT professionals in public service were found to lack required knowledge and skills on records management. The professionals complained that although they were IT experts, they had not got any training on records management hence they were not conversant with processes and procedures involved in the life cycle of public records.

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Discussion of findings

This section presents a discussion of research findings presented in the previous section. The discussion is provided based on study objectives identified in this paper.

Policies, standards and guidelines for e-records management

E-records management policies are such an important component in determining factors for successful creation and management of e-records. In spite of the difficulties in managing electronic records, managing records in compliance with legislation and policies is not an option but an obligation for public sector bodies (Saffady, 2002). Despite these facts, the study findings have indicated that currently, there are no specific policies for e-records management in the public service. Instead, the government issues circulars and guidelines from time-to-time to provide institutional and operational guidance and ensure compliance. This appears to therefore mean that public offices in Tanzania are creating, organizing, maintaining, and disseminating their digital records using personal initiatives without standard guidance. In this regard, it can further be interpreted that, the management of e-records is not sufficient and the security of such information is endangered.

In addition, this study has established that there were no government-wide official standards for e-records management or metadata. This explains why Lowry & Wamukoya (2013:154) asserted that the national archives of Tanzania, Uganda, and Kenya have yet to adopt the ISO standards on records management and standard functional requirements for the management of records in ICT systems. This would mean that, government institutions are creating and managing their digital records by their own initiatives without common standards. As a result, the existence a low and fragmented e-records management initiatives cannot be avoided. Further, this implies that the authenticity, reliability, and trustworthiness of government information in digital format are not guaranteed. With the absence of standards, metadata and compatibility elements for future accessibility of e-records might go missing hence endangering their long-term preservation.

A study by Yonazi (2010) revealed that activities involving guiding and regulating e-government initiatives in Tanzania were not yet implemented. Because of that, Yonazi (2010:61) revealed fragmented initiatives as each government institution attempted to implement its own e-service. The current study also concurs with an earlier study by Kalusopa & Ngulube (2012) which pointed out that despite the use of computer technology in labour organizations in Botswana, there were no institutional procedures to guide the filing, arrangement, and disposition of electronically created documents. They further argued that, labour organization are no different from many other organizations around the world that are in transition to electronic environments while the standards and guidelines on e-records are yet to be established.

Consequently, it has been established in this study that currently, there are no comprehensive e-records management guidelines, thus making the entire process of managing e-records throughout their continuum haphazard across the public service. It has however been noted that there exist two guidelines namely; the Registry Procedure Manual, 2005; and the Guideline for procedures of managing Personnel records in the Public Service, 2013. These two guidelines seem to accommodate some aspects of electronic records. The Registry Procedure Manual has a small section that provides procedures for managing official emails. The manual

directs action officers, whom official emails are sent to, to get them printed and captured in the manual filing systems similar to traditional paper records. This would however seem inappropriate because an email ceases to be an e-record as soon as it gets printed out (URT, 2005).

Tshotlo (2009) reported a number of challenges with regards to e-records guidelines at Gaborone City Council which included; lack of records management policies to guide the creation, storage, access, retention, and disposal of records. Kalusopa & Ngulube (2012) confirmed that, there was no evidence of well-defined procedures to guide the creation of e-records in most labour organizations in Botswana. The authors further observed that institutions' guidelines on filing, arrangement, and disposition of e-records were lacking. Similarly, a study by Svärd (2014:138) in Sweden reported that even though Swedish municipalities had positive information culture, they faced a number of challenges including but not limited to; email management, lack of electronic archives, and lack of system integration of which affected the achievement of holistic records management environment and a well-functioning information infrastructure.

ICT infrastructure and Capacity

The availability of ICT tools is the basic underlying factor for e-records management (ERM) (Luyombya, 2010). Findings from this study established that the government of Tanzania has harnessed ICT and its related tools in a bid to adopt e-government throughout the public service. Respondents, for instance, confirmed that at least all public offices were installed with a number of ICT tools including: computers, Local Area Networks, internet facilities, fax machines, printers, telephones, and have functioning ICT departments. However, it was evident that some public offices were more equipped in terms of technological infrastructures, ICT facilities, and competent staff while others were lagging behind. Similarly, facilities for storage of digital records, including digital repositories, were not yet available. These results concur with the ones by Lowry & Wamukoya (2013:156) who disclosed that within MDAs in Kenya, Uganda, and Tanzania; facilities for managing records as per international standards and good practice were lacking; digital records are stored in various recording media in computer rooms with poor environmental controls and with little documentation which endangers their continued accessibility. These results mean that even though the government of Tanzania has tried to embrace ICT in its offices, a lot needs to be done in favour of e-records management.

In Uganda, Luyombya (2010:158) revealed similar weaknesses when he observed that the Uganda Public Service (UPS) lacked adequate digital records management (DRM) equipment and facilities; a factor that hampered the generation and management of electronic records. Luyombya (2010) identified lack of awareness of the benefits of DRM services as a reason behind the absence of adequate DRM equipment and facilities. A study by Kalusopa & Ngulube (2012) revealed that fax, telephone, and cell phone were the dominant ICT facilities that adopted and used by labour organizations in Botswana while internet was slowly being adopted. Similarly, Nasieku (2012) reported that Moi University had inadequate ICT infrastructure and resources to carter for e-records management. The factors for such inadequacy were lack of adequate funds to purchase hardware and software, the benefits of using ICT to manage records was not well recognized, and lack of administrative will for making policy decisions regarding the management of e-records at the University. Unavailability and unreliability of ICT and telecommunications networks and computers, and lack of optimization of the existing infrastructure such as mobile phones, were seen as inhibiting factors for effective e-Government adoption initiatives in Tanzania by Yonazi (2010).

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Digital preservation strategies

This study's findings have also indicated that there were no sufficient strategies for the long-term preservation of public information in electronic environment. This means that vital public records in digital formats were prone to loss or inaccessibility over time. As such, evidence of government business transactions might be difficult to retrieve hence compromising rights of individuals and the public at large. Related results were reported by Lowry & Wamukoya (2013:154) as they pointed out that national archives and MDAs in the East Africa region have not yet established standards for the archival management and digital preservation of valuable digital records. While digital preservation standards such as the Open Archival Information System Standard (OAISS) and specifications for trusted digital repositories were in the market, none of the East African region countries had considered for testing and adaptation (Lowry & Wamukoya, 2013). In agreement with the above argument, Ngulube (2012:129) said: "Identifying, collecting and storing online publications and organizational records will be a futile exercise if strategies such as developing trusted digital repositories are not devised".

E-records management knowledge and skills

The proliferation of digital information in public offices requires employees to be equipped with information and records management skills that can promote records creation, capture, management, use, and re-use in electronic environments (Svärd, 2014:6).The study findings have established that all records staff who participated in the study had qualifications of a Diploma in Records Management attained from the Tanzania Public Service College (TPSC). However, the study revealed that, majority of them had inadequate knowledge and skills on issues pertaining to e-records and their related systems including, metadata identification in e-records, and procedures for e-records storage, distribution, and disposition. It was further identified that, the reason behind such incompetence was the insufficiency of curriculum content on e-records management which was reported to be more theoretical than practical. This observation is in line with the one made in a study by Mnjama & Wamukoya's (2006) pointing out that even though many governments have tools and procedures for managing paper records, electronic records and images management is still lacking. In Uganda, Luyombya (2010) evidenced that there is shortage of skills across the public service. He further observed that, records managers lack adequate technical knowledge on how to manage digital systems. As a result, few records managers are able to contribute in ICT discussions especially on issues related to the establishment of digital records solutions.

Katuu (2015) conducted a study on the development of archives and records management education and training in Africa. This study, among other things, argued that although there exists in Africa a variety of institutions offering qualifications in archives and records management, their quality is questionable. The doubt on the quality of education and training in African universities offering archives and records management programmes (ARM) is based on a number of challenges including: low numbers of qualified staff; virtually non-existent research; poor quality of education materials and outmoded programs; and education

methodologies based on the model of rote memorization that does not encourage critical thinking, problem solving and creativity (Katuu, 2015). Based on these weaknesses, Katuu (2015: 11-12) contends that, there have been efforts to develop educational materials on various areas such as the training in Electronic Records Management (ERM) which was developed by IRMT. Despite these efforts, the study revealed that, an initiative that has not been achieved in East African region is a centre of excellence for digital records management.

Based on the above facts, it would mean that, the government efforts on e-records management implementation would be useless if the 'half cooked' records personnel are not given practical training on ERM. This should go along with a review of curriculum on Records and Archives Management (RAM) which seem to concentrate more on theories than practical aspects. In addition, top management buy-in agenda on e-records seem to be lacking.

Moreover, the study findings have indicated that although most action officers were computer literate, they lacked knowledge on technical issues related to e-records management. Svärd (2014:92) also observed similar results in Sweden where officers were never informed about how they should handle such records. Instead, records management training courses were only offered to registrars in municipalities who were directly involved with public records management. Related results were reported by Nkala, Ngulube & Mangena (2012:114) who submitted that staff members at NAZ had limited skills and knowledge in managing e-records despite most of them being computer literate. Study results further indicated that some government officers with networked computers on their tables could not even draft an email without assistance. Others were reported to misuse the installed ICT facilities by conducting personal activities such as playing games and informal communications through social networks such as Facebook, Twitter, and others. On the other hand, the ICT professionals in public service were identified to lack required knowledge and skills on records management. They revealed they had not gotten any training on records management hence they were not conversant with processes and procedures involved in the life cycle of public records.

It would seem from the results that most public servants, including action officers, are not conversant with procedures and practices of e-records management. This suggests that, effective implementation of e-records management systems will not be successful unless all stakeholders are acquainted with the techno-how on the same. To achieve this, training on ERM is important along with policies, standards, and guidelines that would provide responsibilities and directives to all responsible staff.

Conclusion and recommendations

This paper has discussed results on e-records readiness as a necessary aspect for effective implementation of e-government in Tanzania. It has been established that although many public institutions generate a good volume of e-records, they are currently being mismanaged because majority of public servants have inadequate knowledge and skills on issues pertaining to e-records and their related systems including, metadata identification in e-records, and procedures for e-records storage, distribution and disposition. Moreover, it has been established in this article that the management of e-records in the Tanzania Public Service is being inhibited by a number of challenges including: inadequacy of information systems and absence of standards; unreliable power supply; poor internet connection; and absence of effective e-records policies, standards, and guidelines. Based on such findings, the

paper provides some recommendations on what the government should do to improve the existing situation concerning e-records readiness as follows:

i. Records personnel, IT staff, and secretaries should be trained on how to deal with electronic records. The training should be conducted by professionals and experts proven to have necessary knowledge and technical skills to cover such gaps as: hands on skills on creation, preservation, dissemination, and disposition of records in a digital format. Further, knowledge and skills on issues pertaining to e-records and their related systems including ERM security; metadata identification; and procedures for e-records storage, distribution, and disposition need to be covered to mitigate the existing knowledge and skills gaps.
ii. e-GA should take a lead in equipping all public offices with recommended ICT tools and facilities that would enable effective management of e-records from the time of creation to their final disposition including digital repositories which are currently missing.
iii. The government, through RAMD and e-GA, should identify specifications for e-records management software and instruct all public offices to allocate a budget to purchase and install them. Such an approach would enhance the uniformity and interoperability of information systems throughout the public service.
iv. RAMD should observe the digital preservation standards such as the Open Archival Information System Standard (OAISS) and the specifications for trusted digital repositories which are in the market and adapt them for effective preservation of public digital records.
v. The adaptation and customization of the existing ISO Standards and Guidelines to suit the Tanzanian environment is necessary to enhance the adoption and implementation of interoperable, secure, reliable, and cost effective e-Government solutions. In addition, policy and regulatory frameworks and capacity to ensure information security should be developed by the President's Office, Public Service Management (PO-PSM&GG) in cooperation with RAMD and e-GA.
vi. The development of policies, guidelines, processes, and procedures to preserve electronic records in the public sector needs to be taken seriously by responsible government MDAs. These tools would help to improve efficiency in terms of: records capture, metadata identification, security and integrity of records, and preservation of the electronic records.

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