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# A FRAMEWORK FOR E-RECORDS IN SUPPORT OF E-GOVERNMENT IMPLEMENTATION IN THE TANZANIAN PUBLIC SERVICE

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## Abstract

Effective e-records management is considered an integral part for successful implementation of e-government. While many previous studies have been conducted on e-government implementation in Tanzania, only a few investigated the importance of e-records in supporting successful implementation of e-government in the country. As such, this paper tries to cover this gap as it investigated a framework for e-records management in support of e-government in the Tanzania public service. The study used the International Records Management Trust (IRMT) E-records Readiness Tool (2009) and World Bank E-government Handbook for Developing Countries (2002) as the theoretical framework. Data were collected through interviews and personal observation and analysed using thematic analysis. Findings revealed that although there is evidence of availability and use of e-records across government institutions in Tanzania, the e-records readiness and efficiency levels in support of e-government were low. In addition, the study established that despite the government's efforts to embrace ICT tools across the public service, the management of e-records is not yet streamlined to the majority registries. Similarly, the existing legislation, policies and regulations are inadequate and ineffective particularly on matters relating to e-records management and e-government implementation. Further, this study revealed that records 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 its related systems. The study has recommended a framework for effective management of e-records in support of e-government implementation.

**Keywords:** Public records, e-records, e-government, electronic records management systems, e-government maturity, digital repository

### Introduction

E-records and e-government have become common concepts in both the developed and developing world today (Lemieux 2016; IRMT 2009; Wato 2006; 2012; Komba 2014). E-government is the use of information and communication technologies (ICTs) to promote more efficient and effective government, and make it more accessible and accountable to the citizens. The characteristics of e-government include: electronic service delivery, electronic workflow, electronic voting and electronic productivity (UNESCO 2005:5).

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 is about a government using computer technology, software and the internet to manage and deliver services in three overlapping focal points namely: external interaction, connecting citizens and process improvement. According to the World Bank (2001), 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.

According to UNESCO (2005), e-government is concerned with the use of ICTs to promote governments' efficiency and effectiveness as it makes them more accessible and accountable to the citizens. UNESCO (2005) identified four main characteristics of e-government, namely: (1) Electronic service delivery; (2) Electronic workflow; (3) Electronic voting; and (4) Electronic productivity. Moreover, 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 interaction that form the foundation of e-government deployment. The highlighted types of interaction are: (1) G2G: This is government-to-government interaction, which involves sharing of data and conducting of electronic information exchange among various government departments and other entities. This exchange could be both intra- and inter-agency at national level as well as exchanges among national provincial and local levels (UNESCO 2005).

On the other hand, e-records are informational or data files that are created and stored in digitized form through the use of computers and applications software (State of California 2002:10). E-records which are sometimes referred to as digital records are:

...records created, communicated and maintained by means of computer technology. They may be 'born digital' (created using computer technology) or they may have been converted into digital form from their original format (e.g. scans of paper documents (National Archives of Australia 2014).

In an electronic environment, records systems may be designed to register records through automatic processes transparent to the user of the business system (ISO 15489-1 2016). Furthermore, e-records can be recorded on a medium (Saffady 2002; IRMT 1999) such as magnetic tapes or disks. However, their status is not dependent upon the medium. A review of literature indicates that, unlike paper records, e-records must be viewed as a logical rather than physical document because, for them to be read, an aid of computer hardware and software is necessary so as to interpret the codes used to present letters, numbers and figures (IRMT 1999). Sources of e-records include: computers and computer-like devices, scientific and medical instrumentation, communication equipment, video records and audio recorders (Saffady 2002). Unlike paper-based records, e-records are a logical flow that require three major attributes, namely content, context and structure. Content refers to what the record is about, context is the background information that helps explain the meaning of the document and structure concerns the appearance and arrangement of the content.

E-records are therefore the by-products of e-government (World Bank 2002). This is why Wato (2006) rightly points out that issues related to e-records are inseparable from e-government issues. The electronic delivery of services to government, business and citizens produces electronic records, be it in text, graphics, pictorial, audio or data as evidence of transactions. Such electronic evidence needs to be retained as records which can demonstrate accountability and preserve reliable access and in turn support the e-government (Nkala, Ngulube & Mangena 2012). However, this brings about tremendous challenges which need a sound framework that would safeguard the security, integrity and authenticity of e-records.

### **Statement of the problem**

Effective management of e-records plays a tremendous role in e-government implementation. The government of Tanzania has been striving to adapt and implement e-government throughout the public service amidst numerous challenges. For instance, the government has completed a feasibility study of designing a government mini-data centre that is intended to host and

operationalize various e-government systems; built the national optic fibre backbone to network all ministries, departments, agencies and regional administration for reliable internet connection; purposely established ICT departments in all public offices; and successfully revamped the government portal. Some of the e-services that are currently operating include: online job applications, online registrations, tax payments, utility bills payments, obtaining permits, obtaining certificates, obtaining licences, government announcements, forms and various types of information from ministries and departments (URT 2013). Despite these efforts, e-records generated by government departments as a result of e-transactions and website records, are not well managed. Studies by Ndenje-Sichwale (2010), Yonazi (2010) and Komba (2014) have been conducted on records management and e-government implementation in Tanzania. These studies, however, did not address the e-records management as a key aspect in e-government implementation. This study therefore sought to bridge such a gap by investigating the consequences of failing to implement an effective e-records management strategy for e-governance. Consequently, the study proposes a framework to guide effective implementation of e-records and e-government within the Tanzanian public service.

### **Aim and objectives of the study**

The study aimed to investigate whether the existing e-records management promotes or undermines the implementation of e-government with a view to develop a framework for effective management of e-records in support of e-government implementation in Tanzania. The specific objectives of the study were to:

1. determine the e-records readiness in the Tanzanian public service.
2. assess the e-government implementation status in the Tanzanian public service.
3. establish the effectiveness of existing e-records' legal, policy and regulatory framework in support of e-government.
4. determine the e-records knowledge and skills of staff in the public service.
5. examine out the extent to which the national archives (RAMD) is involved in the management of e-records and e-government implementation in the public service.
6. develop a framework for the management of e-records and e-government implementation.

## Theoretical framework

This study reviewed a number of theories related to e-records management and e-government implementation. However, only one theory (the IRMT E-records Readiness Tool of 2009) will be discussed as the theoretical framework of this study. The elements of this model were used to provide guidance of the study.

According to IRMT e-Readiness Tool (2009), 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. However, the management of e-records is associated with many challenges ranging from inadequate infrastructure, absence of legislation, 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, the IRMT developed an e-records assessment tool that could assist governments and agencies in assessing 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 format in a bid to implement effective e-government.

IRMT (2009) observes that adequate infrastructure is crucial for managing e-records created out of e-government services. 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 format of information, the likelihood exists of jeopardising the substantial investment required to launch e-government services. Furthermore, the 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 risk; and reduced transparency, accountability and trust (IRMT 2009:2). Based on these facts, the E-Readiness Tool was designed to be used along with 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 provides a risk assessment of e-records readiness both at government-wide, national level and the agency specific level.

## A FRAMEWORK FOR E-RECORDS

The IRMT tool consists of 12 key components of e-readiness out of which six components address national, government-wide e-readiness, and the other six components address agency-specific e-readiness. The national, government e-readiness components include the following (IRMT 2009:2-14):

- Legal mandate for the government-wide of public records and information.
- Legal framework for e-commerce activities.
- Freedom of information and protection of privacy legislation.
- Government-wide ICT infrastructure and capacity.
- Government-wide e-records management standards and guidelines.
- 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.
- compliance with records and information management policies and procedures.

The present study considered the IRMT e-readiness tool 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 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 through which the researcher based on when assessing various aspects regarding e-records and e-government in the public service of Tanzania.



## Research methodology

The 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, data validity and reliability, ethical considerations and presentation and analysis of data as detailed in sub-sections below.

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). An interpretive paradigm seemed more appropriate to achieve the goals of the study as it allowed for a deeper understanding of the phenomenon at hand because it relies on analysing and interpreting the participants' experiences and meanings related to the study.

A study population is an aggregation of elements from which a sample is selected (Babbie 2004). It is that unit of which a population is comprised and which is selected in a sample, distinguished from units of analysis, which are used in data analysis. The elements of analysis of the current study included the Ministry of President's Office Public Service Management (PO-PSM); Ministry of Communication, Science and Technology; 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. 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 105 eligible participants were selected to be interviewed. 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 the huge one will be typical or representative of the whole (Babbie 2012; Bryman 2012; Creswell 2014). The selection of 50 respondents purposely depended on their knowledge, positions and responsibilities relating to the study at hand.

In this study, interviews and personal observations were employed to collect data. In research, the use of various methods to collect the same data is highly recommended. This multi-method

approach is known as *triangulation*. Bell (2005:116) points out that, "the key to triangulation is to see the same thing from different perspectives and thus to be able to confirm or challenge the findings of one method with those of another". As such, 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 other data collection methods. While interviews were the dominant tool to collect data, a non-participatory obtrusive observation was used to validate the facts obtained from interviews.

Data analysis allows researchers to sum up observations so that they can find answers to research questions. In this study, qualitative data from interviews and personal observation were analysed using the 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. During the process of data analysis, the process involved iterative (i.e. moving backwards and forwards), revolving around research questions or theoretical frameworks identified from literature and reducing the data into segments and groupings, which was finally be linked to the literature and theory during data interpretation. Finally, interview results were presented using relevant and substantive quotations. There was a deliberate use of the 'voice' of various participants by clearly stating whose opinion was being represented. According to Luyombya (2010), the use of quotations, reproducing the words of participants, communicates their attitudes and depth of feeling while simultaneously advances the argument made. Themes of varying size, words and phrases connected to e-record management and e-government implementation strategies were connected to identify relevant subject areas in the data.

### **Findings**

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

#### **E-records readiness in the Tanzanian public service**

Study findings revealed that six action officers out of ten were not even aware that the e-government strategy exists, so they could not even state the extent to which it addresses e-records. Four action officers who participated in this study revealed that the extent to which e-government strategy addresses e-records is very low. In supporting e-government implementation strategies within the public service, it was revealed that the e-Government

Agency of Tanzania (e-GA) has completed a feasibility study of designing a government mini-data centre that is intended to host and operationalize various e-government systems.

Similarly, the study findings revealed that, despite the availability and use of various types of e-records within the public offices, the management of e-records is not yet streamlined to the registries. As such, records personnel were not directly involved with the management of e-records, rather office secretaries and IT staff were. Because of that, the management of e-records generated by government departments as a result of e-transactions and website records was not well managed during their continuum. The study further established that records 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 its related systems, including metadata identification in e-records, procedures for e-records storage, distribution and disposition.

About e-records management systems, it was revealed that the government has procured and installed some 'piece meal' software, which cuts across the public service but are limited to specific types of digital information. The software includes the Government Mailing System (GMS), the Human Capital Information Management System (HCIMS), the Strategic Budget System (SBAS) and the Integrated Financial Management System (IFMS). Moreover, the study established such challenges that inhibit effective management e-records management in the public service, including inadequate information systems and standards, limited knowledge of and skills regarding managing e-records, absence of e-records policies and low awareness of the importance of e-records and e-government initiatives.

### **Status of e-government implementation in the Tanzania**

The study indicated that e-government implementation maturity level is low between stage one (publishing) and stage two (interactivity). The results indicate that the Records and Archives Management Act of 2002 was inadequate and ineffective particularly regarding matters relating to e-records management and e-government initiatives. The study findings further revealed that currently there are no specific policies for e-government implementation. Instead, the government uses circulars and guidelines which are being issued by the government from time to time to provide institutional and operational guidance and compliance with regard to e-government implementation initiatives in the public service.

### **The effectiveness of existing e-records legal, policy and regulatory framework in support of e-government**

The study findings indicated that the Records and Archives Management Act of 2002 was the only law that the records staff were aware of concerning public records management. The law, however, seems inadequate and ineffective, particularly on matters relating to e-records management and e-government initiatives as it does not have provisions that provide directives, guidelines and policy or legislative requirements to assist government institutions to manage electronic records effectively. Likewise, the Tanzania Electronic Transactions Act of 2015 which recognises electronic records, does not provide any specific guidelines on how to achieve effective management of the electronic records.

With regard to policies related to e-records and e-government, this study revealed that currently there is no public office with a functioning policy to guide the management of electronic records. The study indicated that the current National Records and Archives Management Policy (NRAMP) of 2011 does not reflect specific values, principles, aims and objectives of electronic records management. In addition, it was the view of this study that the policy does not seem to provide the required guidance which is expected to assign and define responsibilities and authorities on e-records management to public officers. Similarly, a comprehensive e-records management standard guidelines throughout their continuum was non-existent across the public service.

### **Knowledge and skills of public servants in e-records management**

The findings indicated that all eight records staff members who participated in the study had a Diploma in Records Management obtained from the Tanzania Public Service College (IPSC). However, it was further revealed that the training on e-records was inadequate due to insufficient curriculum for the records management programme, particularly on e-records management modules which were reported to be more theoretical than practical. As a result, it was evident that seven out of eight records personnel had inadequate knowledge and skills on issues related to e-records management systems, including metadata identification and procedures for the storage, distribution and disposition of e-records. The study further revealed that only one (12.5%) records staff member out of eight confirmed that they handled e-records at their registry, whereas seven (87.5%) records staff members indicated that they were never involved with e-records management at all.

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 the public service were identified to lack the required knowledge and skills on records management. They denounced that, although they were IT experts, they had not received any training on records management; hence, they were not conversant with processes and procedures involved in the life cycle of public records.

### **The contribution of the national archives (RAMD) in e-records and e-government in the public service**

The study results indicated that although there was evidence that public institutions in Tanzania are generating e-records as a result of e-transactions, the national archives of Tanzania, also known as Records and Archives Management Department (RAMD), has not developed policy and guidelines for the management of e-records in the Tanzanian public sector. Furthermore, it was evident that the RAMD has failed in fulfilling its mandate, especially regarding the management of e-records, due to factors such as inadequate skills on e-records management among RAMD staff, lack of government-wide e-records management policy, guidelines and standards on e-records, inadequate facilities and budgetary considerations. High staff turnover at the RAMD was also reported to be one of the contributing factors to unsatisfactorily fulfilment of RAMD obligations.

### **Discussions**

This section gives a brief discussion based on the study findings provided above. The discussion is provided in relation to the study objectives identified in this paper.

#### **E-records readiness**

The findings revealed that at least every public office had adopted ICT as a tool in its business operations, hence generating a good volume of e-records. However, it was learnt that, with the exception of the TCRA, records personnel in other offices were not directly involved with e-records. It was also evident that government institutions lacked recommended e-records management systems and qualified personnel as key factors towards e-government initiatives. Because of that, data from the records personnel and e-GA staff revealed that, despite the positive steps taken by the Tanzanian government towards e-government implementation strategies, currently, the voluminous e-records generated by government departments as a result of e-

transactions and website records, are not being managed systematically. Such a scenario is aggravated by the fact that the majority of records personnel and other members of staff in public offices had inadequate knowledge and skills on issues pertaining e-records and its related systems, including metadata identification in e-records, procedures for e-records storage, distribution and disposition. This observation conforms to Mnjama and Wamukoya's (2007) study when they pointed out that, even though many governments have tools and procedures for managing paper records, electronic records and images management are still lacking. In Uganda, Luyombya (2010) evidenced that there is a 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, its impact on quality is questionable. The doubt regarding 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 programmes 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 the IRMT. Despite these efforts, the study revealed that an initiative that has not been achieved in the East African region is a centre of excellence for digital records management.

Based on the study results under objective one of the study, 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 in ERM. This should go along with a review of the curriculum on ARM which seems to concentrate more on theories than practical. In addition, top management buy-in agenda on e-records seems to be lacking. It would also 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 the 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.

Moreover, the findings indicated that, currently, there is no single official e-records management software installed at public offices. Rather, it was observed that, at present, government ministries, departments and agencies (MDAs) manage e-records using some software which was either purchased from system vendors or developed by own IT staff to suit their institutions. A good example could be cited from TCRA where an EDRMS is used. This implies that for government institutions to manage their e-records using different systems and software, the question of interoperability could be problematic and lead to fragmentation of public digital records. The existing software which operates in silos may not necessarily provide for adequate preservation of e-records for future use. The study results, however, indicated that the RAMD, in collaboration with the e-GA, were working on a prototype of an e-office system to be rolled out throughout the public service as a means to mitigate the prevailing weakness. Meanwhile, the idea to purchase a comprehensive e-records management system was being considered should the budget allow. These findings conform to those of Luyombya (2010:159) who cites EDRMS as one of the important digital records management tools which was missing in several ministries in Uganda. Luyombya (2010) reports that most of ministries in Uganda are neither networked nor interconnected with digital systems; a situation which led to a wide incompatibility of technological systems, even within the same ministry. The fragmentation of information and lack of coordination between different arms of government were also pointed out in his study.

E-records are normally fragile and their integrity depends on the ever-changing hardware and software. Unless e-records are carefully protected, governments will be unable to guarantee their availability, authenticity and usability over time (Ngulube 2012; Mnjama 2014; Lemieux 2016). Study findings indicate that public offices in the study had insufficient strategies for the long-term preservation of public information in an electronic environment. Similar results were reported by Wamukoya and Lowry (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 (OAIS) and specifications for trusted digital repositories were in the market, none of the East African region countries have considered for testing and adaptation (Wamukoya & Lowry 2013).

With regard to e-records preservation strategies, 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". The study results on this particular aspect indicated that the National Internet Data Centre (NIDC) has been constructed in Dar es Salaam to provide an 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. However, it is worth noting that digital technologies present technological challenges for the long-term preservation of data. The challenges include obsolescence of software and hardware, media failure, vulnerability of e-records, communication error, operator error, economical failure and organizational failure (Ngulube 2012). Moreover, it was revealed from this study that the government is finalizing an installation of a Modular Data Centre to serve as a disaster recovery for government applications under the NIDC for the purpose of preserving its records emanating from online transactions.

### **E-government implementation status in the Tanzanian public service**

The study indicated that the e-government implementation maturity level in Tanzania is low. One of the reasons for such a situation might be contributed by the fact that some stakeholders are not involved in the process. A study by Ndlou (2004) revealed that the ability of developing countries to reap full benefits of e-government is hampered by the existence of a myriad of political, social and economic hindrances. In Africa, the key challenges to implementation of e-government include: (1) the development of information and communications infrastructure; (2) human resources development and employment creation; (3) the current African position in the world economy; and (4) insufficient legal and regulatory frameworks and government strategy (Cogburn and Adeya (1999: vi). Similarly, Rangarirai et al. (2010) reported that, in South Africa, the implementation of e-government is problematic due to the fact that (1) some stakeholders had a distorted perception of the value of e-government projects, (2) citizens were not meaningfully consulted and (3) the tasks were not properly coordinated.

It is therefore suggested that there is a need to meaningfully engage with various stakeholders as they need to understand the benefits and the nature of e-government projects. As Yonazi (2010:27) had observed, citizens will be attracted to adopt e-government initiatives when they perceive that the government is adequately prepared to serve them electronically. Otherwise, citizens will be unlikely to seek or receive government e-services that are not formalised and legalised.



### **The contribution of RAMD in e-records and e-government in the public service**

The study also sought to determine the attempts being made by the RAMD to embrace e-records management and e-government implementation in the public sector. The study results indicated that, although there was evidence that public institutions in Tanzania are generating e-records as a result of e-transactions, the RAMD has not been able to fully spread its wings in fulfilling its responsibilities on e-records and e-archives in a bid to support e-government implementation in Tanzania. Insufficient budget, lack of required skills and necessary facilities and infrastructure for digital records management; were among the reasons to such a situation. Similar results were also reported by Nkala et al. (2012) who contend that the National Archives of Zimbabwe (NAZ), does not have adequate infrastructure, including hardware and software to cater for e-records preservation (Nkala et al. 2012).

### **Recommendations**

The next section provides recommendations on what the Tanzanian Government can do to effectively manage e-records in a bid to successfully implement e-government initiatives. It also proposes a framework for e-records in support of e-government implementation in the public service. Recommendations of the study are based on what research findings revealed. In order to enhance effective e-records management and e-government in the Tanzania public Service, the study recommends that the following:

- i. Records personnel, IT staff and secretaries should be trained in how to deal with electronic records. The training should be conducted by the Tanzanian public service in conjunction with the RAMD, the e-GA and any other external organizations proven to have the necessary technology to cover gaps such as hands-on skills in the creation, preservation, dissemination and disposition of records in a digital format. Furthermore, knowledge and skills on issues pertaining e-records and its related systems, including ERM security, metadata identification, procedures for e-records storage, distribution and disposition, need to be covered to mitigate the existing knowledge and skills gap.
- ii. The RAMD should develop its own website so that it can become involved in managing public records generated by websites. Nevertheless, cautions about the fluidity of web pages which can be available today and gone tomorrow should be taken care of by the government.
- iii. The e-GA should take initiatives to equip all public offices with recommended ICT tools and facilities that would enable the effective management of e-records from the time of

- creation to their final disposition, including digital repositories which are currently missing.
- iv. The government, through the RAMD and the e-GA, should identify specifications for e-records management software and instruct all public offices to purchase and install them. This would enhance the uniformity and interoperability of information systems throughout the public service.
  - v. The RAMD should observe the digital preservation standards such as the Open Archival Information System Standard (OAIS) and the specifications for trusted digital repositories, which are in the market and adapt them for effective preservation of public records in a digital format.
  - vi. 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 PO-PSM, in cooperation with the RAMD and the e-GA.
  - vii. Amendments in the current legislation on records and archives management in Tanzania are crucial so as to provide directives, guidelines and policy statements that would enhance effective e-records management.
  - viii. The RAMD and the e-GA should identify and adapt policies, guidelines, processes and procedures to preserve electronic records in the public sector. These tools would assist with efficiency in terms of records capture, metadata identification, security and integrity of records, preservation of the electronic records and digital archiving.

### **Proposed framework for e-records management in support of e-government in the Tanzanian public service**

From the study findings and recommendations, this study proposes a framework for e-records management in Tanzania. The proposed framework provides a structure that can enable a collaborative approach between e-government services and e-records management practices in Tanzania. The framework is meant to ensure that there is an effective management of e-records, hence supporting e-government. Within the proposed framework, effective service delivery has been considered as the main purpose of e-government. E-government platforms form the frontline that interfaces with the citizens while ERM systems form the backend operations that support e-government to serve the citizens effectively. The framework considers e-records

management as a crucial factor in facilitating e-service delivery. Figure 1 provides a summary of the proposed framework.

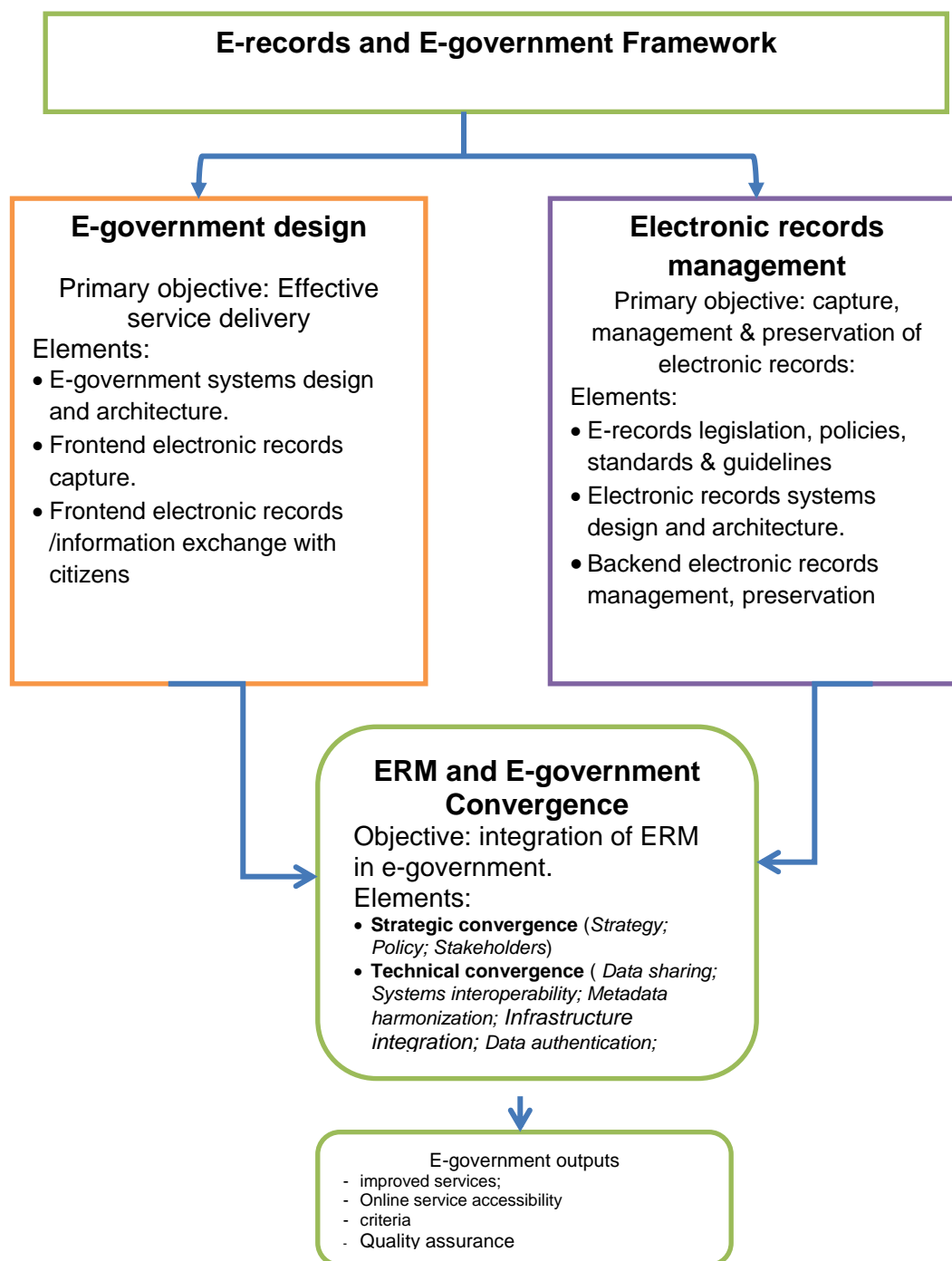


Figure 1: Proposed framework for management of electronic records in support of e-government in Tanzania (Adapted from Ambira 2017)

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