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TOWARDS A FRAMEWORK FOR E-RECORDS READINESS IN SUPPORT OF E-GOVERNMENT IN ESWATINI

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Abstract

This article is based on a study whose aim was to develop a framework for the effective management of e-records as a facilitating tool in support of e-government. The IRMT (2004) E-records Readiness Tool was adapted and used as the analytical framework for this study. This tool is designed to assist organizations to benchmark themselves and to determine where they stand with respect to the management of electronic records. The study mainly used the quantitative research approach, exploiting a survey that utilized a questionnaire as a data collection instrument. The quantitative approach was however complemented by the qualitative approach which utilized observation and interview techniques. Using both quantitative and qualitative approaches made it possible to triangulate and validate the findings. The unit of analysis was Eswatini government ministries, with a survey design involving all 18 the government ministries. The target study participants comprised the Directorate of Eswatini National Archives, the Directorate of Computer Services, the Directorate of E-government, Registry staff and the action officers. The results revealed that the level of e-records readiness in the government ministries is at an infant stage and that opportunities for increasing the depth of e-records readiness exist that require resolve. There was evidence of an irresponsive, weak, and disjointed legislative and policy framework on e-records; lack of contemporary records management skills; slow progress in the implementation of envisaged electronic document records management systems (EDRMS) and low capacity building among records management staff. Among other recommendations proffered is a useful e-record readiness framework that could enhance the management of e-records and spur the e-government drive Eswatini.

Keywords: e-government, e-records, e-readiness, records management, Eswatini

Introduction

As governments embark on e-government, there is, however, a need to pay special attention to the management of electronic records. This is so because electronic transactions carried out through e-government applications produce e-records whose quality and integrity need to be upheld (IRMT 2004; Mnjama & Wamukoya 2004). The IRMT (2004:1) thus cautions that, “funds and effort will likely be wasted unless e-government initiatives are supported by a solid records and information management programme.” Taking this notion into account, it can be said that e-government can be successful if it is driven by a robust e-records management system. The Commonwealth Secretariat (2013) argues that one of the major challenges facing the implementation of e-government in Eswatini and other Sub-Saharan African countries is the lack of a proper ICT infrastructure that support e-records management. The Commonwealth Secretariat (2013) is of the view that, among other salient factors, e-government can only be implemented successfully if it is supported by functional and readily accessible e-records. Electronic records are information or data files that are generated electronically and stored using computer applications technology (Turek & Norbert 2003). They are stored on various magnetic and optical storage devices and are products of computer hardware and software. E-records readiness, on the other hand, can be defined as the depth and breadth or the capacity of organisations to have the required institutional, legal framework, and an ICT infrastructure anchored on a systematic records and information management programme (Kalusopa 2011). According to IRMT (2004), it is the depth and breadth or the capacity of organisations in having the required institutional, legal framework, ICT infrastructure, and, records and information management programme based on the generic information and recordkeeping practices. In this study, e-record readiness is viewed as having a proper e-records management system that can support e-government and improved service delivery by government ministries to the citizens.

Eswatini National Archives and e-records

According to Eswatini National Archives (2015), a lack of investment on ICT infrastructure and the absence of a robust ICT policy that aligns e-records management and e-government are caused by the use of the obsolete Records and Archives Act of 1971. The department feels that this Act no longer addresses current issues as far as the management of records and archives is concerned, although it is the one that is used as a manual of operation even though it does not have any blueprint on e-records management. In Eswatini, the Department of Records and

Archives Management is the one that is mandated to manage records and to liaise with the Ministry of ICT in the implementation of e-government in government ministries. According to the progress report entitled *The state of e-records in government ministries in Eswatini* which was released by the Records and Archives department in April 2015, there is evidence that the state of e-records in government ministries in Eswatini is not impressive.

The Eswatini National Archives Report (2015) points out that there is no coordinated e-records policy or strategy at government level that cuts across and integrates e-records management in all ministries. The absence of such an infrastructure has resulted in ministries individually engaging consultancies in order to implement documents management systems. According to the Eswatini National Archives Report (2015) (Report), this did not help matters as far as e-records management is concerned, because it went as far as enabling ministries to have incomplete and incoherent individualised records management systems that are not coordinated. If e-records management is not coordinated in government ministries, one becomes interested in exploring in depth how a disintegrated e-records system would support e-government endeavours.

The Eswatini National Archives reports further assert that due to the lack of a coordinated effort in managing e-records, ministries have become comfortable with working in silos as they try to establish and implement their systems. The report notes that only a few ministries have tried to implement their local systems while the majority of ministries do not have any systems of e-records management in place.

Due to the lack of functional e-records management systems in government ministries, the Eswatini National Archives Report (2015) notes that individual civil servants create e-records and keep them in different formats and back them up using external drives. This was noted as a concern because individuals retire or resign without proper hand-over or take-over. In such cases, retrieval of such documents stored on individual computers and on different external drives tends to be a challenge. Therefore, keeping records in such formats is risky. This scenario is also noted by Tsabedze (2011) who accentuates that each office that created electronic records had its own way of maintaining, retrieving and storing electronic records. In some offices, memory sticks were found lying on top of tables without protective lids and storage boxes to minimize their exposure to dust. There was no documentation of records in electronic format, which makes them inaccessible to other officers.

E-records readiness assessment within e-government

E-government cannot be discussed out of the context of ICT and e-records management. In that regard, for the implementation of any e-government strategy to occur, there is a need for thorough assessment of the capacity in terms of legislative and policy framework, human resources and ICT infrastructure in order to ascertain if public organizations are e-records ready. The importance of e-records readiness assessment in e-government is that it helps organizations to be aware of the existing gaps, risks and opportunities in the records management systems in use. The recommendations coming from the assessment form a basis for planning in terms of infrastructure, human resources, legal framework in view of the transition to an e-environment (IRMT 2004; McLeod, Childs & Heaford 2006). In that regard, Kalusopa (2011:8) has aptly argued that, “e-records readiness assessments are meant to guide development efforts by providing benchmarks for comparison and gauging progress in organizations in understanding the depth of e-records management.”

Government records are a public resource; hence all citizens have the right to their merited access to engender values of accountability, transparency and good governance. The effects of not effectively managing e-records can be far-reaching and would necessarily imply that records may not be made available if and when needed (Moloi & Mutula 2007).

Documented studies on e-records management in the developing and the developed world reveal notable challenges that negatively impact on e-records management practices. For example, studies conducted by Millar (2004), Wamukoya and Mutula (2005) and Nengomasha (2009) in East and Southern Africa highlight the following impediments to e-readiness.

- Lack of or deficient legislation, policy frameworks and procedures to guide the management of e-records.
- Lack of understanding of what records are and the importance of records management.
- Lack of adequate training and education in information technology systems and electronic records management approaches.
- Poor security, confidentiality control mechanisms, records backup and recovery systems.
- Low status accorded to e-records management personnel and their roles in fostering organizational efficiency and accountability.
- Inadequate budgets allocated to records management operations.
- Lack of mechanisms for record creation, update, retention, migration and disposal.

- Absence of a records management disaster plan, including digital preservation strategy.

Wamukoya and Mutula (2005) posit that accurate and reliable records management is needed to provide a strong foundation for all e-records management development strategies. A well-managed e-records management system is considered crucial today in providing a strong foundation for enhancing accountability, transparency, democratic governance, poverty eradication and elimination of corruption and efficient use of public resources (IRMT 2003). In Eswatini, although the 2013-2017 Swazi e-government strategy is emphasized as a vehicle for national economic and social development by ensuring effectiveness, efficiency, transparency and accountability on the part of the government, it does not highlight whether the government ministries in Eswatini are e-records ready for purposes of the implementation of e-government. For example, it is still problematic to access e-records in rural areas or any other place where there is no technology and electricity. Sheridan and Riley (2006) argue that trying to introduce e-government when there is no e-records readiness is as good as wasting money and other valuable resources. Nengomasha (2009) also affirms that when the government embarks on e-government there tends to be an increase in the use of electronic records as well as an increase in government's reliance on electronic information. Against the background given above, the study investigated and made an assessment of e-records readiness in view of the e-government strategy in Eswatini.

Statement of the problem

The overarching problem that instigated this study is that while there is abundant evidence of the Eswatini government's undoubted ICT platforms that provide accurate and faster communication through the use of e-applications to access government services, the status of e-record readiness of this implementation has not been fully ascertained. Several authorities on records management such as IRMT (2004; 2009) underscore the fact that although e-government services produce e-records that document government transactions and online activities, the extent of their application records management functionalities remains in contention.

The Eswatini ICT legislative and policy framework of 2007 allows for the establishment of the e-government portal that should provide ubiquitous access and sharing of information through the internet among government departments; yet there have been several instances where records captured and stored in the e-records system have been lost or could not be accessed by the user

community (Times of Eswatini 2010). This implies that the drive in the implementation of the national e-government strategy is fraught, among other issues, with e-records management challenges of admissibility, authenticity and reliability which are a cornerstone for evidence in the administration of the state and general governance of the country (Tsabedze 2011).

As far as studies elsewhere in Africa such as the IRMT (2003) are concerned, Wamukoya and Mutula (2005), Moloji (2006), Nengomasha (2009) and Kalusopa (2011) underscore the need for a thorough e-records readiness as key to the implementation of e-records management programmes and ultimately e-government in the public sector. However, past studies in Eswatini show no research evidence that ascertain the depth of e-records readiness in the context of the current e-government strategy. Studies that have been documented on records management systems in the country have largely focused on paper-based records management in government ministries, such as one conducted by Tsabedze (2011). Specifically, on e-records, the study by Ginindza (2008) attempted to study the general state of e-government in Eswatini in government ministries and departments. Others such as Maseko (2010) examined the management of audio-visual records at the Eswatini Television Authority (STVA). The Eswatini National Archives Report (2015) also have noted that the lack of comprehensive studies in Eswatini on e-records management has prejudiced the department and its partners in the Ministry of Information Technology that would be a blueprint that can guide the implementation of the e-records project. This has resulted in government ministries adopting an uncoordinated approach in managing e-records owing to the fact that both the ICT policy and the e-government 2013-2017 strategy are silent on how e-records management is supposed to be implemented in the face of the e-government drive. In the same vein, the Records and Archives Act of 1971 is also obsolete and therefore inadequate to address the issues of e-records management in the current digital era. There is currently a paucity of empirical studies which address e-records readiness with respect to e-government in the context of a developing country such as the Kingdom of Eswatini.

Aim and objectives of the study

The main aim of the study was to assess e-records readiness in the Eswatini government ministries with a view to conceptualizing framework for the effective management of e-records as a facilitating tool for e-government. In order to achieve the goal of the study, the following were the objectives to:

- establish the national legal and policy framework governing the management of electronic records in government ministries in Eswatini in the context of e-government.
- ascertain the level of compliance with policies, standards, tools, procedures and responsibilities for e-records management in the government ministries.
- establish the e-records management products and technologies existing in the government ministries.
- examine resource capacity and training for e-records management staff in the government ministries.
- establish the depth of government-wide digital preservation strategy in the government ministries.
- conceptualise a framework that may inform the appropriate management of e-records in the context of the Eswatini e-government.

Methodology

The e-records readiness tool was adapted and used as the analytical framework for this study. This tool is designed to assist organizations to benchmark themselves and to determine where they stand in respect of the management of electronic records (IRMT 2004).

The study used a quantitative approach to a large extent and employed a survey design. However, this was complemented by methodological triangulation of both quantitative and qualitative data collection methods to assess e-records readiness in government ministries in Eswatini. Surveys are largely quantitative and have been a widely used method in records management research. Ambira (2016) utilised survey research in his study to investigate the development of a framework for the management of e-records in support of e-government in Kenya. Another study by Marutha (2016) also utilized survey research to investigate the development of a framework to embed medical records management into healthcare service delivery in the Limpopo province of South Africa. The study employed a survey design in order to “describe, compare, contrast, classify, analyze and interpret implications of the findings”.

In this study, no sampling was done and all 18 the government ministries, Cabinet office, deputy prime minister’s office, Eswatini National Archives, Department of Computer Services and the office of e-government department were included. The participants were the action officers (action officers are people who are working in the different ministries’ administration), registry

personnel, the Director of National Archives, the Director of Computer services and the Director of e-government. In determining the sample sizes for registry staff, Israel's formula for determining sample sizes was used (Israel 1992).

$$n = \frac{N}{1+N(e)^2}$$

Where n = desired sample size

N = Population size

e = Margin of error

e = ± 10 %

90 % Confidence level

The values of e=±10% and 90% confidence level were adopted. Consequently, using the Israel formula, the following samples were generated for records/registry staff:

Sample for registry staff

n= N

1+N (e)²

n=498

1+498 (0.10)²

 = 83 registry officers →

The action officers, like their records/registry counterparts, were stratified randomly selected taking care to include all three management levels, followed by random selection within each management level using the Ministries' organizational structure as the sampling frame. This resulted in 126 action officers being added. The distribution of the action officers was as follows: 42 from top level management, 42 from middle level management and 42 from lower level management. The Ministries and sampled staff that were included in the study are reflected in Table 1.

Table 1: Government Ministries and staff included in the study

Unit	Records/registry staff	Action Officers	Directors
Eswatini National Archives			1
Department of Computer Services			1
Department of E-Government			1
Cabinet office	4	6	
Deputy prime minister office	4	6	
Ministry of Justice	4	6	
Ministry of Labor and Social Welfare	4	6	
Ministry of Public Service	4	6	
Ministry of Tourism	4	6	
Ministry of Works & Transport	4	6	
Ministry Natural Resources	4	6	
Ministry of Education	4	6	
Ministry of Finance	4	6	
Ministry of Housing and Urban Development	4	6	
Ministry of Home Affairs	4	6	
Ministry of Sports, Culture and Youth Affairs	4	6	
Ministry of Health	4	6	
Ministry of Information, Communications and Technology	4	6	
Ministry of Economic Planning	4	6	
Ministry of Commerce	4	6	
Ministry of Tinkhundla	4	6	
Ministry of Foreign Affairs	4	6	
Ministry of Agriculture	4	6	
Total	n= 83	n=126	n= 3

Findings and discussions

The findings and discussions that follow focus on the national legal and policy framework, electronic records management products and technologies, internal awareness of link of e-record management with e-government strategy, and the status of e-government in the government ministries.

(a) National legal and policy framework governing the management of e-records

The study sought to find the national legal and policy framework governing the management of electronic records in government ministries in Eswatini. These consist of statutes, laws, regulations, codes of conduct, best practice guidelines and ethics governing the business environment that relate to records management.

The study revealed that 123 (75%) of the respondents are unaware of Eswatini's National Archives Act No. 5 of 1971 as a regulatory tool for records in the different ministries, while 40 (25%) are aware of the Act which include records officers as depicted in Figure1.

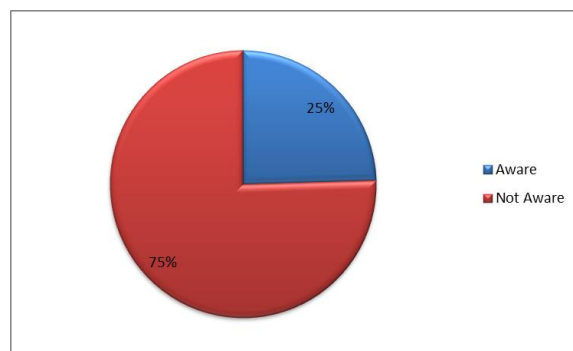


Figure 1: National legal and policy framework governing management of e-records

The study also sought to find out if the respondents (40 (25%)) were aware of the contents of the legislation for records management. Figure 2 shows that 26 (65%) were aware of the contents of the legislation and 14 (35%) were not aware of the contents of the legislation.

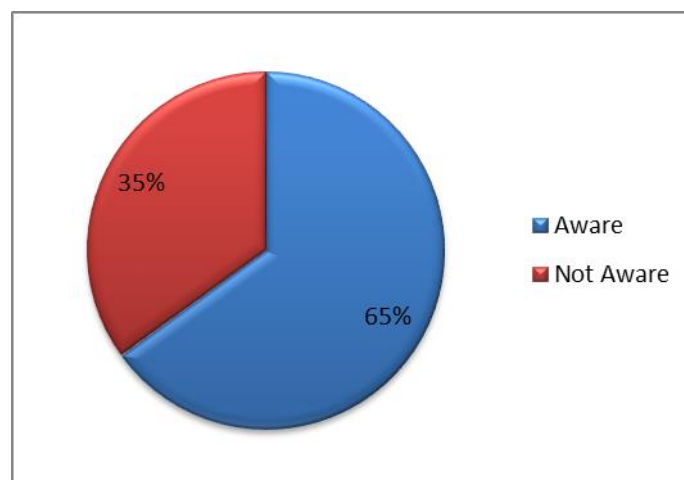


Figure 2: Awareness of the contents of the legislation for records management

Although 40 (25%) of the respondents were aware of the national legislation, it is quite concerning to note that there exists no national records management Act to guide the effective management of e-records. This is despite the fact that the National Archives Act No. 5 of 1971 focuses more on the archival stages of the records lifecycle (Eswatini Government 1971). The study also reveals that there is a National Archives and Records Management Bill of 2010, which captures the total life cycle management of all records, regardless of media and format which have to be passed into law. The glaring lack of suitable legislative framework, the creation, maintenance and long-term preservation of and access to e-records are left to chance.

(b) Compliance with policies

The study sought to find out whether the ministries had policies to guide the management of e-records. As shown in Figure 3, a total of 88 (53%) respondents acknowledged the non-existence of policies for managing e-records while 23 (14%) respondents acknowledged the existence of policies, but did not know the major areas the policy covered. Some 52 (32%) respondents were not sure whether a policy for managing e-records existed.

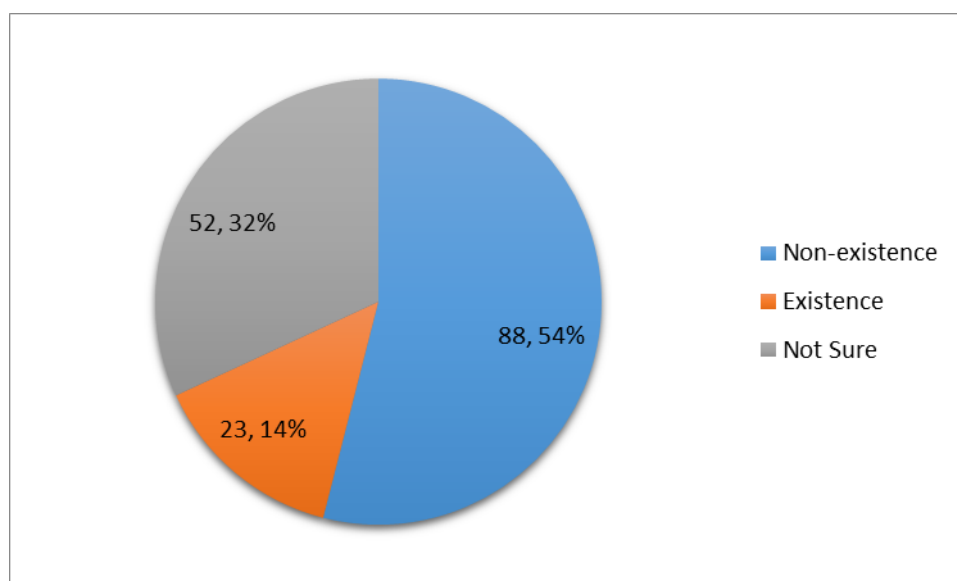


Figure 3 The policies for managing e-records

The study confirmed that a policy for managing e-records did exist. Interviews with the Director for Eswatini National Archives revealed that the ENA has developed and distributed a national records management policy guideline to help the ministries develop internal records management policies throughout government ministries. “There is a National Records Management Policy

that has been developed by ENA and circulated to all government ministries and departments so that they can develop their own policies”.

ISO 15489-1 (2016) (section 5) stipulates that a records management policy and procedures of an organisation should demonstrate the application of the regulatory environment to their business processes. Section 6 specifies that an organisation should “establish, document, maintain and promulgate policies, procedures” to guarantee that “its business need for evidence and accountability and information about activities is met”. The study therefore confirms that the guiding national records management policy has not been used by government ministries. The study also established that the Ministry of ICT had developed an ICT policy and e-government strategy; however, it did not address electronic recordkeeping issues. The e-government strategy emphasises that e-government is a vehicle for national economic and social development by ensuring effectiveness, efficiency, transparency and accountability on the part of the government, but it does not highlight e-records readiness in government ministries for purposes of use in the implementation of e-government. On the other hand, the ICT policy addresses issues such as the ICT infrastructure policy, policy compliance and sustainability and procurement, maintenance and disposal of ICT infrastructure and systems.

The Director of Computer Services explained that, “there is an ICT policy in place and an e-government strategy but they don’t capture the creation, receipt, use and disposal of records but, instead, there is a records management procedure which captures that”.

Through document analysis, the research revealed that the ICT policy and the e-government strategy did not include strategies for the creation, receipt, use and maintenance, storage, security and integrity and disposal of e-records. Such strategies will guide records officers and action officers in the proper management of e-records from creation to disposition. Without a strategy or policy in place, it becomes difficult for the ministries to manage records in an electronic environment.

(c) Compliance with procedures and tools

The study sought to ascertain the level of compliance with procedures and tools. The study revealed that there is a documented records management procedures manual developed by Eswatini National Archives which are used by the ministries. However, the study revealed that the procedures manual caters for physical records and it is not clear for e-records. Nevertheless,

the study has revealed that 18 (25.7%) records officers that comply with the procedures manual indicated that the manual was 'Above average', while 29 (41.4%) said it was below average. This is shown below in Table 2.

Table 2: Compliance with records management procedure and tools [N=70] (Records officers)

Response	Frequency	Percent
Above average	18	25.7
Average	23	32.8
Below average	29	41.4
TOTAL	70	100

(d) Electronic records management products and technologies

The study sought to find out whether technology for electronic records management was available in the ministries. Respondents were presented with a list of electronic technologies and asked to tick against the ones that were available in their offices. Table 3 shows that 111 (69.3%) indicated that they have computers in their offices, 140 (87.5%) indicated that they have mobile phones, 10 (6.25%) had digital cameras and 2 (1.25%) had EDRMS.

Table 3: Technologies for electronic records management (N=160)

Response	Frequency	Percentage
Computers	111	69.3
Printer, scanners, photocopiers, laminators	70	43.75
CD, CD-ROM, DVD, VCD, Flash Drive	109	68
Electronic document records management system (EDRMS)	2	1.25
Internet connectivity	98	61.25
Online transactional processing systems (OLTPS)	35	21.9
Mobile phones	140	87.5
Decision support systems (DSS)	0	0
Digital camera	10	6.25
Cassette recorder and tapes	35	21.9

***Multiple responses were possible**

(e) Strategies used to create and receive e-records

The respondents were also asked to indicate strategies they use to create and receive e-records in their offices. The question was directed to registry staff and action officers whose responsibilities included the creation and receipt, use, maintenance and disposal of e-records as part of their day-

to-day business activity in the ministries. Table 4 shows that 151 (94%) respondents made printed copies of the e-records they created while 151 (94%) made printed copies of the official records they received. One hundred and eleven (69.3%) create and save on computer files while 51 (32%) receive and save e-records on the computer hard disk. One hundred and nine (68%) of the respondents create and save on storage devices such as CDs and USBs while 12 (9%) receive and store e-records on storage devices.

The findings indicated that there is no standardised procedure put in place for the effective management of e-records across Eswatini Government Ministries. This can be attributed to the general practice that most e-records (including e-mails) were created and then filed as paper-based records. Such a situation is not good, especially if the e-records will exist as corporate memory of those ministries. The study also observed that each office that created electronic records had its own way of maintaining, retrieving and storing electronic records. In some offices, memory sticks were found lying on top of tables without protective lids to minimize their exposure to dust.

Table 4: Strategies used to create and receive e-records [N=160]

Response	Frequency	Percentage
Create and save on computer files	111	69.3
Create and save on storage devices such as CD and USB	109	68
Receive and save on the computer hard disk	51	32
Make printed copies after receipt	151	94
Create and make printed copies	151	94
Receive and store on storage devices	12	9

***Multiple responses were possible**

The researchers also observed that the majority of respondents made printed copies of the records they created and received. This could be attributed to the fact that despite computerization of some of the ministries and departments, those ministries had not done away with the use of paper records as a means of transacting business. Respondents maintained soft copies of the e-records they created and received. The strategies used to create and receive official e-records by the ministries were individual measures that were undertaken by the respondents without necessarily involving their ministries or the Eswatini National Archives as a watchdog over the creation, maintenance, use and disposal of records. It was apparent, therefore,

that the creation and receipt of e-records did not adhere to any records management principles or policy.

A follow-up interview with the Director of the ENA and the Director of Computer Services revealed that the ENA is piloting an EDRM solution to the Ministry of ICT and the Cabinet office to effectively manage and preserve government records as corporate memory for future generations. The main aim is to bring about uniformity and standardization of e-records systems and management practice across government ministries and departments. The study observed that although there is a system that is being piloted, some respondents kept printed copies of e-records in desk drawers and cabinets without necessarily filing the records. Paper records had continued to clog the office space, thus resulting in the inaccessibility of records whenever they were required for reference.

(f) Strategies used to access e-records

The study sought to establish how officers accessed information contained in e-records. The results revealed that 151 (94%) respondents made printed copies of e-records and filed copies manually in folders to facilitate access, while 109 (68%) respondents used storage devices such as USB sticks and CDs as a strategy to ensure that whenever the information was required it was made available in the ministries and departments. Sixty (40.6%) respondents indicated that they used backup, while 98 (61.25%) respondents used electronic mail to distribute e-records. The results are presented in Table 5.

Table 5: Strategies used to access e-records (N=160)

Response	Frequency	Percentage
Making printed copies	151	94
Storage devices such as USB sticks and CDs	109	68
Back up	65	40.6
Electronically via e-mail	98	61.25

***Multiple responses were possible**

The researchers also established that some respondents used personal folders to store e-records. Such respondents did so as a personal initiative and gave the folders names that were only known to them. The study also noted that there were no procedures in place to provide guidance on the management of computer files. Without the assistance of records creators or the persons

who received the e-record, it is impossible to access or retrieve the information. At times, officers were having difficulty retrieving the e-records they stored on computer folders because they had forgotten the file name(s) and the location of the folder(s).

(g) Status of e-government in the government ministries

The study also investigated the status of e-government in the ministries and it established that the ministries were in the initial phase with the implementation of e-government. The study established that Eswatini government ministries were just starting to be prepared for the implementation of e-government services by way of putting in place the necessary infrastructure and operating administrative functions of the ministries electronically.

The majority of the action officers keep their records in their offices and nobody else knows about their existence. No procedures are followed when action officers file documents which include e-records where the use of folders and naming conventions is not systematic. The e-records were neither well-arranged nor well documented, causing problems when action officers wanted to retrieve records. The findings indicate that there is no standardised procedure in place for the effective management of e-records across Eswatini government ministries. This can be attributed to the general practice that most e-records (including e-mails) were created and then filed as paper-based records. The study also observed that each office that created e-records had its own way of maintaining, retrieving and storing the e-records.

Proposed framework for the management of e-records in the context of e-government strategy in Eswatini

The successful implementation of e-government is dependent on e-records readiness. The study established that Eswatini is not yet e-records ready. The country's 2013-2017 e-government strategy and the ICT policy lack depth on e-records management and readiness. Government ministries in Eswatini still rely on the obsolete and out of current context Records and Archives ACT of 1971. This study thus contributes towards bridging this gap, through the framework on how e-records management could be harmonized with e-government in Eswatini government ministries.

The proposed framework for the management of e-records in the context of e-government strategy in Eswatini provides a structure that can enhance a collaborative approach to the management of e-records between e-government services owners and records management

stakeholders in Eswatini to achieve the desired synergies between the management of e-records and e-government strategy to ensure that existing practices for the management of e-records adequately support e-government strategy (See Figure 7).

The rationale for the framework is based on the findings and on the literature review which established that:

- the level of e-records readiness in the government ministries is at infancy stage since records management is disjointed, haphazard, poorly approached, there are poor records management skills and professional training of staff, weak legislative and policy framework, and there is low capacity building in records management staff
- there is no standardised records management system to manage e-records in the context of e-government strategy
- there is no clear framework for examining and understanding e-records readiness in the context of e-government strategy.

It has been argued throughout this article that the implementation of e-government has necessitated the emergence of e-records. The problems associated with e-records management are inseparable from the problems of e-government. The electronics and the provision of services to businesses and citizens will produce e-records as evidence in individual transactions. The evidence must be kept in the form of records to demonstrate accountability and maintain reliable access. Replacing the manual and paper processes with electronic processes in government will generate e-records as evidence in policy management and service delivery areas. These transactional records will be generated by new forms of service delivery when electronic transactions are received from businesses and citizens and processed in one or more departments. This implies that government ministries must restructure and establish standardized procedures for the management of e-records. The need to have a clear framework for understanding the e-records readiness in the context of e-government strategy is critical. With e-government being implemented in Eswatini, e-records that document government transactions and online activities are also being produced. Therefore, it is important that government ministries ensure that standards are developed and implemented, that appropriate facilities are created and that adequate resources are invested in managing official records in digital and other formats. Once implemented by government ministries, the proposed framework would help the ministries to comply with the facets of e-records readiness and be in a strong position to drive the e-government strategy in Eswatini.

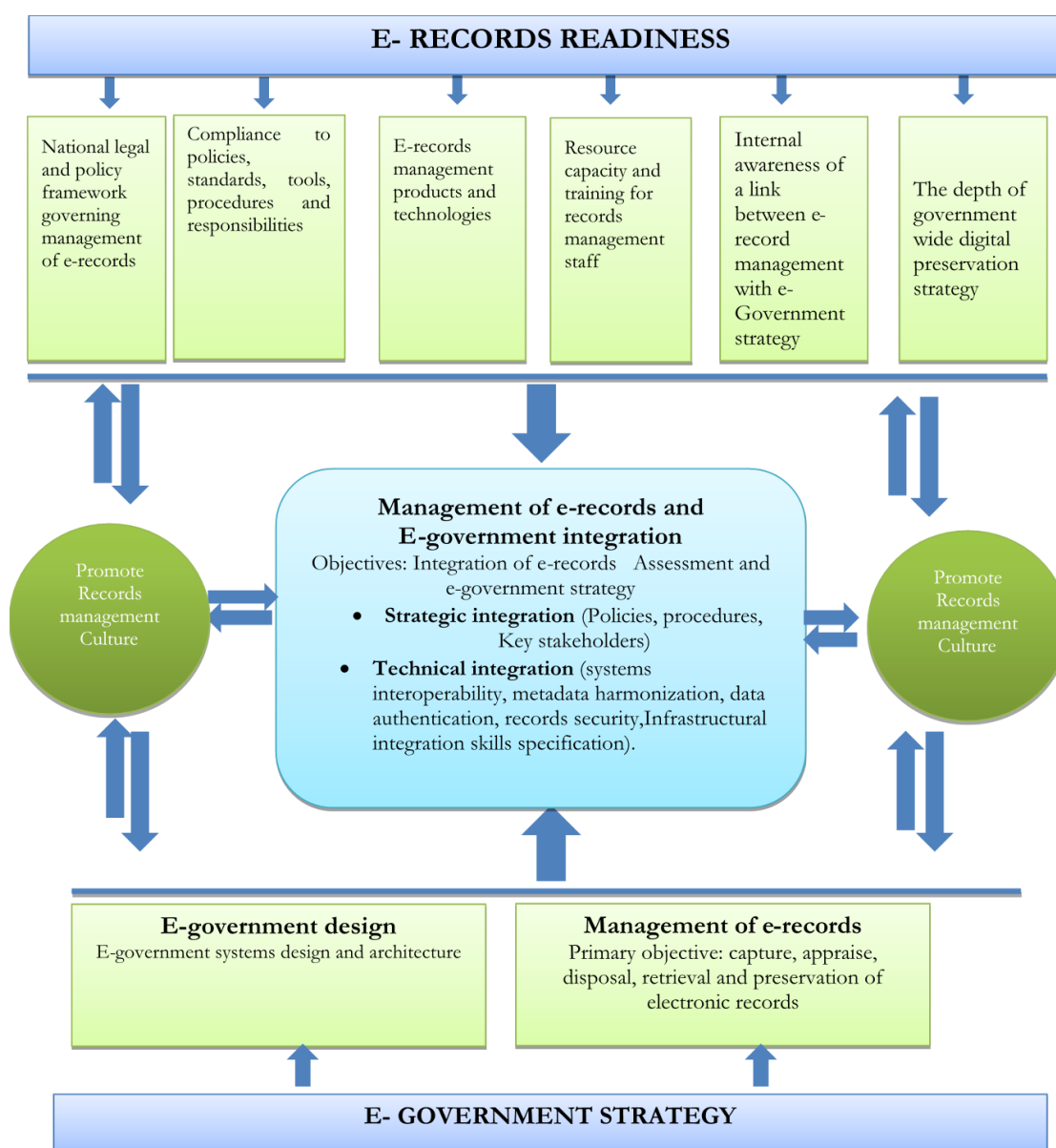


Figure 7: Proposed framework for management of e-records in the context of e-government strategy

This proposed framework therefore builds on the existing body of knowledge on e-records readiness in support of e-government. The framework considers service delivery as the main drive of e-government. The e-government platforms form the frontline that interfaces with the citizen while management of e-records systems form the backend operations that support e-government to serve the citizens effectively. It was established by this study that the management of e-records is predominantly seen as a means to an end (service delivery) rather than an end in itself (internal operational efficiencies). The framework explains what the Eswatini government ministries should do in order to strengthen the management of the e-

records environment in the context of e-government strategy in order to create, manage and preserve trustworthy and reliable records for accountability, transparency and good governance.

The elements include:

- (a) e-records readiness
- (b) management of e-records
- (c) management of e-records and e-government integration
- (d) e-government design
- (e) e-government strategy.

(a) E-records readiness

E-records readiness implies having a proper e-records management (e-system) that can support e-government and improve service delivery by government ministries to the citizens.

This entails building on the following aspects:

(i) Reviewing national legal and policy framework governing management of e-records

The national legal and policy framework reflects how a country intends to manage its records. Legislation is the key factor and has a major role in governing records keeping in government entities and employees under these entities. The national legal and policy framework measures are components required to enforce records keeping in the face of problems of handling electronic records. Taking this assertion into consideration, it is necessary for the government of Eswatini to review its national policies and legal framework governing the management of e-records.

(ii) Reviewing records management standards, tools and procedures

Governments that are creating e-records must adopt or develop a government standard setting functional requirements for the management of e-records. These standards and functional requirements are essential to ensure that the government's ICT systems create, capture, organize, store, retrieve and retain electronic records and protect the integrity and reliability of such records in a consistent manner. In Eswatini, only ISO 15489: 2001 is adopted as a benchmark for developing the Records Management Procedure Manual produced by the Eswatini National Archives which is used by the different ministries and departments. There are many international standards that can be adopted by the government of Eswatini for usage in records management,

such as Module 3, Guidelines and Functional Requirements for Records in Business Systems, ICA: Functional Specifications. Business Information Systems Software, National Archives of Australia; MoReq 2, Model Requirements Specification for the Management of Electronic Records; ISO 15489: 2016: Information and Documentation – Records Management; E-records Readiness Tool, International Records Management Trust; European Commission's Model Requirements for the Management of e-records; US Department of Defence DOD 5015.2; United Kingdom National Archives functional requirements among others. Therefore, it is essential for the government of Eswatini to go further than ISO 15489: 2001 and embrace other relevant standards to manage e-records.

Eswatini National Archives should champion the adoption of international best practices like the IRMT's Good Practice Indicators for Integrating Records Management Functionality in ICT systems to improve the professional quality of management of electronic records in support of e-government.

(iii) Determining e-records management products and technologies that exist

The study established that most of the technologies for electronic records creation were available in the ministries, but some of the ministries had Decision Support System (DSS) and Online Transactional Processing System (OLTPS). The study recommends that the ENA, in collaboration with the Department of Computer Services and the Department of E-government, should develop specification and functional requirements for e-records management systems within the context of e-government in Eswatini to ensure that all software acquired for managing e-records captures the requirements of e-government, including the capability to interface with the e-government platforms for the push and pull of data. The ENA must introduce a system that covers all records management functionalities such as records circulation, records appraisal module, records disposal module, records preservation module, records retrieval module, scanning and capturing of electronic documents that were created on paper-based format. The implementation of an e-records management system will also improve economy and efficiency of these ministries in the management of records by reducing overhead costs arising from space and storage equipment for unnecessary paper records. The ministries have the advantage that they can implement the e-records management system with ease since they already have several computers, printers, servers and other related IT requirements that can be utilized as a start. Through the Department of Computer Services, the ministries need to purchase and add more

of these products and technologies to ensure a successful and effective implementation of the EDRM system.

There have been many developments over the past decade with regard to technologies and products for managing e-records and digital information. These include Records Management Application (RMA) software, Electronic Document and Records Management (EDRM) systems, Enterprise Content Management (ECM) systems or Information Lifecycle Management (ILM) systems. These technologies and product solutions are designed to enable institutions to capture, classify, store, retrieve and track electronic records, regardless of their format (paper, e-mail, web pages, digital documents, basic transactions, data, etc.)

Taking this assertion into consideration, it is necessary for the government of Eswatini to know what solutions are available for integrating e-records management into an e-government system before attempting to adopt inappropriate technologies for this purpose or to create new solutions from scratch.

(iv) Examining resource capacity and training for e-records management staff

The study established that there are inadequate resources to manage e-records effectively within the ministries. Evidence of this is the inadequate budget allocated specifically for the records management unit. As part of records management programme, there is need to have an adequate budget dedicated to the records management unit to cater for the registry staff and registry equipment. It has also been established that there is inadequately trained registry staff with no experience in terms of theory and practice of managing e-records. Therefore, it is recommended that more trained registry staff be recruited. Eswatini government ministries should encourage registry staff to attend records management conferences, seminars and workshops to ensure their professional development. This would ensure that registry staff in the ministries are kept abreast of emerging issues in the archives and records management profession.

(v) Creating internal awareness of the link of e-record management with e-government strategy

The study established that there is low awareness of the management of e-records as the sensitization of staff on management of e-records is not done regularly. All new government officers should undergo management of e-records orientation for them to understand their responsibilities and to generally appreciate the records management framework they operate in.

The proposed records management policy could have a clause on this. One of the responsibilities of the registry staff in the ministries and the ENA will be to provide ongoing training for all action officers on records keeping. The ministries should dedicate adequate budget to the records management unit to cater for capacity building. Continuous monitoring and evaluation of the records management programme will ensure that problems are identified and rectified quickly, avoiding a collapse of the records management programme. Senior management and action officers need to be aware of the importance of trustworthy and well-managed records for delivering effective records and information services and protecting institutional accountability and integrity. This, together with records and information management policies, procedures, tools and resources, would result in sound records management.

(vi) Establishing the depth of government-wide digital preservation strategy

The findings of the study revealed that the government ministries did not have a digital preservation strategy that supported the preservation of records and other information materials to ensure their continued access. The study therefore recommends that:

- the ENA should take the leading role in developing a comprehensive preservation strategy that harmonizes management of electronic records across government ministries
- the ENA could also benchmark with Korea and Singapore National Archives who have implemented unified digital preservation systems
- the Ministry of ICT should also fast track the amendment and passing into law of the proposed National Archives and Records Management Bill of 2010 that provides for the management and preservation of electronic records.

(b) Management of e-records

The study confirmed that the records managing policy did exist, but did not fully address the management of e-records. The study recommends that the ENA should facilitate the development of records management policies for the ministries, which should cover the management of e-records in e-government, requirements for systems for managing e-records, preservation of e-records, common data to be shared across the ministries, ICT infrastructure requirements for managing e-records and e-mail management.

The management of e-records element defines the requirements for an effective management of e-records, which guarantees an e-records management with the e-government environment. The

primary objective would be: capture, appraise, dispose, retrieve and preserve electronic records. The development of the management of e-records component will be the responsibility of the Eswatini National Archives. The point of integration is the point at which the unique requirements set out in the e-government and management of e-records components are merged to establish a harmonized approach to the delivery of e-government services. Duplicate requirements are merged. Additional requirements for alignment are identified together with areas of efficiency and economy. Unique requirements are determined and their relationship to the rest is established. The defining of the integration of unique requirements for management of e-records components and e-government needs to be merged to build a synchronized approach to e-government.

(c) Management of e-records and e-government integration

The findings also revealed that these records existed in various forms, including but not limited to digitized records, structured data in business applications' databases, e-mail records and other born digital records arising from various desktop applications. The study further revealed that there were initiatives to improve policy framework for management of e-records as well as acquisition of software to aid the management of e-records.

This element outlines the requirements for the management of e-records that would ensure adequate management of e-records within the context of e-government. When developing the management of e-records component, the following requirements should be considered:

- Capture of various formats of records
- Manage Classification Module
- Central Registry Module
- Loan Module
- Security and integrity of e-records
- Appraisal and disposition of e-records
- Audit trails on access and changes to e-records
- Metadata of records
- Preservation of the e-records
- Digital archiving
- Double filling detection to avoid duplication

This study has revealed that there is no strategic integration between management of e-records and e-government in the government ministries. This is a major challenge that significantly impacts on the technical orientation of both e-government and e-records systems.

The integration point is the point at which the unique requirements defined at management of e-records and e-government components are merged to build a harmonized approach to e-government. Duplicate requirements are merged. Complementary requirements are identified for alignment. Supplemental requirements are identified to define areas of efficiency and economy. Unique requirements are determined and their relationship with the rest established. The integration should be on two fronts: strategic and technical integration.

Strategic integration

Integration refers to the blending of management of e-records objectives and e-government objectives as contemplated in the management of e-records and e-government components' scoping to provide guiding principles that inform the direction of e-government implementation. The objective of this element is to anchor management of e-records into e-government and e-government into management of e-records and provide a strategic method of management of e-records into the e-government environment. Key outputs of the integration will be:

- A coordinated strategy that captures the requirements for both Management of e-records and e-government that define the relationship between the two.
- Policy directions for aligning Management of e-records and e-government.
- Clear definition of Management of e-records and e-government key stakeholders and their roles and responsibilities in driving effective e-government.
- Standards, models and best practice indicators for managing electronic records in the context of e-government.
- Framework for the relationship between management of e-Records and e-government stakeholders.
- Specification of ownership of the management of e-records functions within the e-government in line with the e-government strategy objectives.
- Benchmarks for e-records services that would help enhance the quality of the managing of e- Records.

Strategic integration should be a shared responsibility between the Department of e-government, the Department of Computer Service and ENA.

Technical integration

At this stage, the management of an e-records system and e-government are linked together to ensure seamless management of e-records in the context of e-government strategy. This can be accomplished through the following:

- ***Systems interoperability.*** This would involve interfacing of the e-government application service with the database for the EDRMS. This is to achieve data exchange that is scoped in the data sharing.
- ***Metadata harmonization.*** This refers to terminology for describing records within the e-government, e-records and business systems standardization. Data interchanged between e-records system and e-government is exchanged based on linked database fields. The fields are defined to accept data of certain formats and field lengths. Therefore, harmonization of metadata becomes important to achieve the seamless interchange of data.
- ***Data authentication.*** Mechanisms for authenticating data and electronic records must be put in place to eliminate consumption of services based on forged or fraudulent records. The objective of this stage is to ensure that accurate data is captured and used to dispense government services. This element will be important in enhancing transparency and accountability.
- ***Records security and integrity.*** The security and integrity of records over time must be established across e-government and management of e-records systems to ensure the records remain valid and reliable.
- ***Electronic records preservation.*** Preservation of records generated on the e-government is done at the back end of the management of e-records. This will ensure that there is no deleting of records from e-government databases or other business application systems to create room for newer records. E-mail archiving systems can be interfaced with the management of e-records to enhance preservation of emails.
- ***Infrastructural integration.*** This refers to the harmonization of ICT infrastructure across e-government and management of e-records systems to ensure both are operating at the same level to achieve operational resilience and economy in the management of e-records and e-government. This integration would include both hardware and software harmonization.
- ***Skills specification.*** This refers to defining the minimum skills sets and competencies for managing electronic records. These are the skills base for both ICT and records management officers. The objective of this aspect is to anchor required expertise for the

management of e-records in the e-government setup, both professional and technical, on ICT and electronic records.

(d) E-government design

The main assumption of the current study was that Eswatini government ministries have already rolled out an e-government, which then tends to be an increase of electronic records creation within the ministries and departments. Therefore, this study also investigated the status of e-government in the ministries. The study established that the ministries were at the initial phase as regards e-government implementation. The study also established that Eswatini government ministries were just starting to be prepared for the implementation of e-government services by way of putting in place the necessary infrastructure and operating administrative functions of the ministries electronically.

The e-government systems design is the development, implementation and configuration of the e-government platforms. This element provides technical specifications and requirements for the e-government platforms. It will also look at e-government models, e-government readiness and ICT infrastructure for e-government. It is at this stage that the e-government requirements on electronic records will be determined to scope what e-data and records will be required to support the service, including the desired formats of the records.

The e-government systems design and architecture refer to the development, setting up and configuring of e-government platforms. This element provides technical specifications and requirements for e-government platforms.

(e) E-government strategy

E-government strategy refers to developing a strategy for the design and delivery of e-government in terms of the following.

- Define services delivery specifications within e-government
- Define the requirements of effective management of e-records that would ensure adequate management of e-records in the context of an e-government strategy.

The study has established that the e-government strategy in Eswatini does not have an element of e-records management and readiness.

The next element is to review the e-government strategy so as to define the following:

- The purpose of e-government for increasing efficiency, transparency and citizen participation.
- The scope of e-government across the government ministries and the extent to which e-government would transcend government services: in terms of government to Citizens (G2 C); Citizens to Government (C2G); Government to Government (G2G); Government to Business (G2B)
- Services to be delivered on e-government: These services include public utility services such as telecommunication, transportation, post, medical facilities, electricity, education and also some of the democratic services relating to citizenry such as certification, registration, licensing, taxation, passports, ID cards, etc.
- Policies, procedures, standards and legal framework anchors of e-government: reviewing the National ICT Policy Framework and records management legal framework.
- Framework for e-government delivery: supporting policies and ICT infrastructure.
- Success measures for government, business and citizens: effective service delivery and participation of Swazi citizens on governance issues.
- The growth plan for the e-government penetration in government; outreach programmes to the stakeholder communities and dissemination and implementation plan.
- Infrastructure and key players in e-government supporting policies, ICT infrastructure and government, citizens and corporate world.
- Standardization of e-government services across the ministries and departments in Eswatini: outline manuals, procedures and standard documents.
- The significance of management of e-records in the context of e-government: outline how e-records are going to be managed in the government ministries.

The reviewed e-government strategy would harmonize e-records management and e-government in Eswatini government ministries. The e-government strategy can only be implemented successfully if it is driven by a robust e-records management framework.

Conclusion

There is a haphazard and poor approach to the management of government e-records in Eswatini as evidenced by: weak legislative and policy framework, poor records management skills and professional training of staff, slow progress in the implementation of the EDRMS and low

capacity building as records management staff are rarely sent on training. The study has also revealed that opportunities for increasing the depth of e-records readiness exist such as: availability of financial resources for the EDRMS project. Therefore, this study advocates, among other things, improvement of legislative and policy framework, regular training for records management staff, soliciting senior government official's support and coming up with sufficient budget to cater for records management units. The study's implication for practice stems primarily from the proposed framework which can be harnessed by records management practitioners to enhance the management of e-records in the context of the e-government strategy. The framework suggests a structure that can be used to achieve this integration. The results in this study also point to the contribution to policy, by establishing the link between management of e-records and e-government strategy in Eswatini. Through the recommended framework, the study has further shed light on approaches for integrating the management of e-records within the policy direction for e-government strategy that underscore key elements such as e-records readiness, management of e-records, management of e-records and e-government integration, e-government design and e-government strategy. This should also be able to provide a baseline for the development of guidelines for management of e-records within e-government strategy in Eswatini.

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