

InterPARES Trust Project Report



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Abstract

The project contributes to the infrastructure domain as it assesses the types of enterprise systems being used to manage digital records in Kenya's public sector. It explored how these systems fit and relate with other systems in the enterprise architecture and the impact on the management of digital records. The initial products contributed to the resource cross-domain with the production of an annotated bibliography of both published and grey literature on the topic. This study is related to the two other case studies in the Africa team undertaken in Zimbabwe and Botswana. The findings of the study showed that increasingly public sector institutions in Kenya are generating digital records as a result of increasing adoption of ICTs in government service delivery. Further, it would seem that some of these institutions have implemented ECM to manage their digital records. However, some institutions were yet to follow suit particularly so given the direction the country is taking in digitizing most of its service delivery as anecdotal evidence show. Nevertheless, the findings indicated that emerging technologies such as cloud computing were yet to be incorporated in the area of records management given the number of respondents who gave a negative response on whether this had been implemented in their institutions and those that responded that they did not know. Consequently, the study recommended that academic institutions that offer records management such as Moi University should incorporate these emerging areas in their curricula to prepare students who will be champions in implementing ECM and such technologies as cloud computing in managing digital records.

Background

There have been numerous studies in the management of records in Kenya's public sector over the last two decades. These studies have looked at issues covering the public sector in general (Kemoni, 2007, Kemoni et al., 2007, Mnjama, 2003, Moemi, 2015, Wamukoya, 1996) or specific components of the public sector such as the judicial system (Maseh, 2015a, Maseh, 2015b),

parastatal institutions (Ambira, 2010, Ambira and Kemoni, 2011, Mnjama, 1994) and public academic institutions (Erima and Wamukoya, 2013). A number of studies have covered the management of digital records (Kemoni, 2009, Mnjama and Wamukoya, 2007, Mutula, 2014, Nasieku et al., 2011, Wamukoya and Mutula, 2005). However no recent studies have exclusively investigated how digital records are being managed in public institutions in the country.

Keakopa (2010) and Kemoni (2009) have argued that South Africa is the most advanced African country in the implementation of software applications to manage digital records. A survey of South African institutions that investigated their implementation of Enterprise Content Management (ECM) systems which manage digital records revealed that, by 2010 when the research was conducted, more than 40% of the institutions had five or more years of practical experience (Katuu, 2012, p. 48-49). In addition they had ECM modules such as document management, records management, imaging and workflow within their applications (Katuu, 2012, p. 50-51). The study also showed that South Africa had representatives of six of the major global ECM companies (Katuu, 2012, p. 46). Ngoepe (2015) published a study that investigated the distribution of proprietary vs open source ECM products in South Africa and showed that 58% of national government ministries use proprietary ECM products while 33% have no ECM products.

Description of the study: Considering the extensive studies in Kenya, information similar to what has been discussed in South Africa is lacking. This study therefore sought to investigate

- a) The main challenges in managing digital records within public institutions in Kenya including the legal and regulatory context as well as the technological framework in the country's public sector institutions.
- b) The technological environments within which records are being generated. This includes

- a. Determining whether ECM applications are used and if yes, the modules that have been implemented.
- b. Determining whether the ECM applications being utilized are open source or proprietary. This will include investigating the integration between ECM applications and other business systems such as Enterprise Resource Planning system.
- c. Determining whether the ECM applications have been implemented in a cloud environment or not.

Methodology

In order to address the above concerns, the study was segmented into four different phases each covering different issues as depicted in Figure 1. Some of the phases were conducted concurrently.

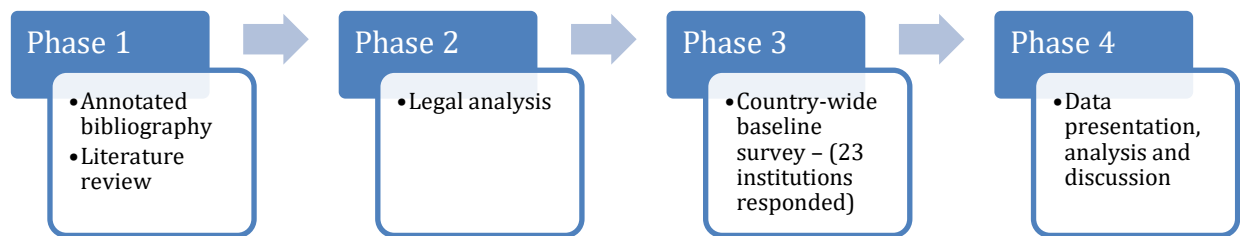


Figure 1: Research phases

Phase One - Annotated bibliography and Literature Review (May – November 2017)

The aim of this phase was to generate an Annotated bibliography and conduct a literature review. The Annotated Bibliography listed, analysed and summarised

articles and other documents that were deemed relevant to the study. A total of 66 publications were covered, and included publications authored by Kenyans, about Kenya and for Kenya.

The topical areas of the annotated bibliography included but were not limited to the following:

- Archives and Records management development;
- Policy, legal and regulatory framework for records management;
- E-government and its implications for records management;
- Records management and service delivery;
- Records management and Risk Management;
- Challenges of managing electronic records;
- Different types of records being managed including financial and health;
- Research activities in archives and records management

These topics were however not restricted to Kenya but also neighboring countries particularly within the East Africa such as Tanzania, Uganda.

In the same phase, an extensive lit review was done whose overall goal was to discern whether ECM applications or other enterprise-wide systems were in use in Kenya.

The objectives of the literature review were to:

- establish how digital records in the Kenyan public sector institutions were being managed;
- Determine the legal and regulatory framework for records management in general and digital records in particular;
- Establish the current technological framework for digital records; and assess the technological environment that generates records

Phase Two – Legal analysis - February 2017

An analysis of the legal and regulatory framework governing the activities of institutions and practitioners in the records management was conducted. The legal and regulatory framework of records and archives in Kenya is based upon English (sometimes styled “Anglo”) law often referred to as “common law.” It was established that there are numerous laws and regulations that have an impact on the management of records and archives in the country. These laws are highlighted in the table 1.

Table 1: Laws and Regulations relevant to Archives and Records Management in Kenya

Type of Law	Legislation of Regulation
Constitution	<ul style="list-style-type: none">• Privacy (Article 31, Constitution of Kenya)• Access to Information (Article 35, Constitution of Kenya)• Tax Records (Article 210, Constitution of Kenya)
National Archives Act	<ul style="list-style-type: none">• Public Archives and Documentation Service Act Cap 19 of 1965• The Records Disposal Act (Cap 14, Laws of Kenya)• The Privileges and Immunities Act (Cap 179, Laws of Kenya)
Freedom of Information Act	<ul style="list-style-type: none">• Access to Information Act no. 31 of 2016• Official Secrets Act (Cap 187, Laws of Kenya)• The County Governments Act, 2012 (Section 87)
Electronic Transaction Act	<ul style="list-style-type: none">• Evidence Act Cap 80
Communications Law	<ul style="list-style-type: none">• Kenya Information and Communication Act, 2009
Information Security Act	<ul style="list-style-type: none">• Official Secrets Act, Cap 187 (1967)
Information Security Standard	<ul style="list-style-type: none">• Directorate of National Security Intelligence Service Act, 1998
Administrative Law	<ul style="list-style-type: none">• Statistics Act, 2006• Public Officer Ethics Act, 2003

Type of Law	Legislation of Regulation
Tax Regulation	<ul style="list-style-type: none"> Value Added Tax Act, Cap. 476, 1990
Financial Regulations	<ul style="list-style-type: none"> Financial Management Act, 2004
Health and Safety	<ul style="list-style-type: none"> Health Records and Information Managers, Act No. 15 of 2016 Environmental Management and Co-ordination Act, 1999

Phase Three

The aim of this phase was to gather information on the technological environments within which records are being generated. The research questions covered the background information of the respondents as well as issues surrounding cloud services, Enterprise Resource Planning (ERP) applications, Enterprise Content Management (ECM) and the integration of ERP and ECM. To glean this information, ten questions were asked.

1. Which sector best describes your institution?
2. How would you characterise the scope of your institution's mandate?
3. Which section or department in your institution do you belong?
4. Does your institution use cloud computing to manage its information assets?
5. Which cloud computing models are used in your institution?
6. Which cloud computing deployment models are used in your institution?
7. Which functional areas are covered by the transactional system in your institution?
8. Which company supplies the transactional system such as the ERP in your institution?
9. Which companies supply the ECM in your institution?
10. Has there been any significant integration between your ECM and ERP systems?

In this phase of the study, a quantitative approach was adopted where questionnaires were administered to respondents in selected public sector institutions. Descriptive survey research was thus adopted. The selection of the institutions was purposively done to ensure participation of key domains in Kenyan public sector ensuring the two tiers of government are represented. However, individual respondents were randomly selected.

Findings

The response rate for the study was **twenty-four** (24) respondents with the majority of them from the public sector parastatals, independent offices, and commissions as shown in Figure 1.

Table 2: Respondents per sector

Respondents' sector	Number of people (%)
Public Sector – Parastatals, independent offices, and commissions	11 (45.83%)
Public Sector – Executive Branch: Economics	6 (25.00%)
Public Sector – Executive Branch: Social	4 (16.67%)
Public Sector – Executive Branch: Environment	2 (8.33%)
Public Sector – Executive Branch: Legislature	1 (4.17%)

All the 24 respondents (100%) indicated that the institutions they represented were mandated to conduct activities across the nation.

The respondents were from different departments and sections as shown in Table 2 and majority of them (41.67%) were from the ICT section/department in the institutions they represented.

Table 3: Respondents by department/section

Respondents' sector	Number of people (%)
Information Technology	10 (41.67%)
Records/Archives Professional	5(20.83%)

Respondents' sector	Number of people (%)
Audit	3(12.50%)
Operations	2 (8.33%)
Policy Development and Planning	1 (4.17%)
Accounting/Finance	1(4.17%)
Legal Affairs	1(4.17%)
Technical Services	1(4.17%)

Increasingly many institutions around the world are employing cloud computing which is internet-based computing that provides shared computer processing resources and data to computers and other devices on demand. The study was interested in finding out whether this global trend is gaining ground in Kenyan institutions and the most important reasons why institutions would employ cloud computing.

Figure 1 is a summary of the responses and shows that more than half of the institutions in Kenya represented by 13 (54.17%) of the respondents are not currently using cloud computing to manage their information assets. For those who use cloud computing, 16.67% (4 respondents) indicated they use it to drive business process transformation while 12.50% (3 respondents) said they use cloud computing to increase organizational performance. Another 12.50% said they use it to reduce costs. 1 respondent (4.17%) indicated they did not know whether their institution was using cloud computing or not.

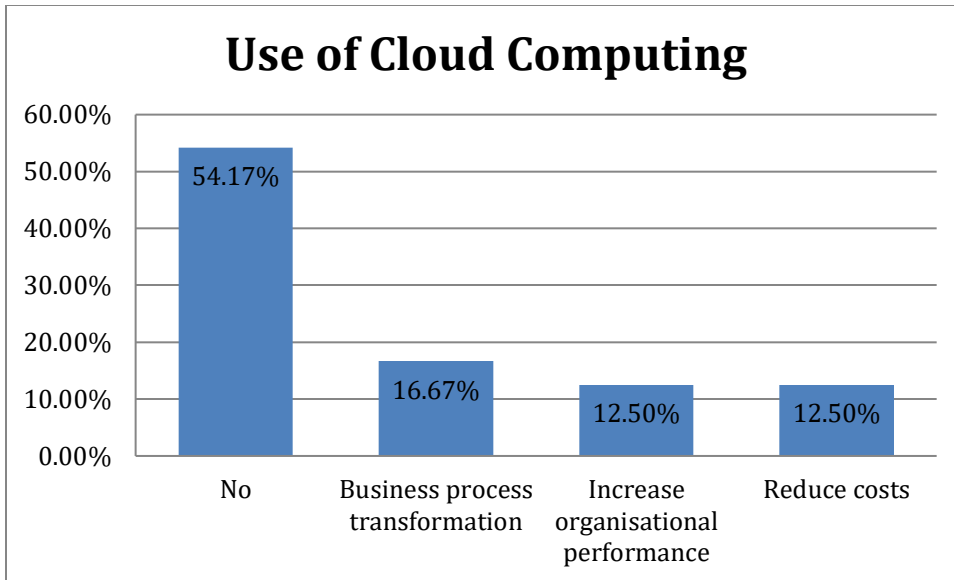


Figure 2: Use of cloud computing within institutions

Cloud computing can be offered as private, public or hybrid models. As shown in Table 3, for those institutions who use cloud computing services, 6 respondents (22.73%) indicated that they use private cloud, 2 (9.09%) use community cloud, 1 (4.55%) use public cloud, 1 (4.55%) use hybrid cloud while another 1 (4.55%) use a combination of all four service models (community, hybrid, private and public cloud).

Table 4: Cloud computing service models

Service model	Number of responses
None	12
I don't know	1
Private cloud	6
Community cloud	2
Hybrid cloud	1
Public cloud	1
A combination of all four service models (Private, Community, Public and Hybrid)	1

In institutions where cloud computing services are used, the most common deployment models indicated were Software as a Service (SaaS) used by 22.73% of the respondents while only 9.09% use either Infrastructure as a Service (IaaS) or Platform as a Service (PaaS) respectively. Further, 4.55% of

the respondents indicated they use a combination of all the three deployment models.

ERP software have been implemented by many organizations to integrate applications used to manage their business processes. The study sought to establish the functional areas covered by ERP systems. Most respondents indicated that their institutions had implemented ERP systems although the functional areas covered by each ERP varied as shown in Table 4.

Table 5: ERP functional areas

Functional areas	Number of responses
Human resources	13 (54.17%)
Accounting	13 (54.17%)
Supply chain management	10 (41.67%)
Operations	8 (33.33%)
Inventory or stock management	7 (29.17%)
Customer relationship management	6 (25.00%)
Data services	5 (20.83%)
Corporate services management	4 (16.67%)
Marketing and sales	1 (4.17%)
Project management	1 (4.17%)
I don't know	1 (4.17%)
None	2 (8.33%)

Respondents were further required to state which company supplied the transactional system such as the ERP in their institutions. It was interesting to note that of the 24 respondents, 12.50% indicated they had no supplier of ERP. This was curious and may simply be a veiled admission about lack of depth of knowledge concerning suppliers of systems. However, 16.67% out rightly said they did not know who the suppliers of the ERP systems for their institution were. 16.67% indicated their systems were supplied by another supplier who was not among those listed but did not go ahead to specify who this was. 50.00% of the respondents indicated that SAP Business supplied their ERP systems while 4.17% of the respondents each indicated that their systems were supplied by

Microsoft Dynamics AZ, Oracle Siebel, Sage X3, SAP Concur Technologies, SAP SmartOps, and SAP SuccessFactors.

In relation to this question, this study also sought to establish the companies that supply the Enterprise Content Management (ECM) system in those institutions that had indicated use of ECMs. Similar to the previous question, of the 24 respondents, 10 (41.67%) said they had no suppliers for ECM in their institutions while 7 (29.17%) did not know who the suppliers were. On the other hand, 4 (16.67%) indicated their ECM systems were supplied by Microsoft (SharePoint/Office 365), 2 (8.33%) were supplied by Oracle (Stellent/WebCenter) and 1 (4.17%) were supplied by Newgen software. A further 2 (8.33%) indicated their ECM systems were supplied by other vendors although they did not indicate who these were.

ECM systems often have different modules performing different activities. As well, there are some instances where institutions have integrated their transactional systems such as ERP systems with their ECM systems. The study sought to establish whether the institutions had different modules that had been implemented and whether the institutions had any significant integration of the ECM and transactional systems and systems.

In response to this, a significant portion of the respondents 83.33% said they did not know whether there was integration of the modules while another 83.33% also said there was no integration. 60.00% of the respondents indicated their institutions have implemented collaboration modules, 80.00% have implemented Digital Asset Management module, 58.33% have implemented Document Management module, another 58.33% have the Records Management module, 50.00% have put in place the scanning module, 40.00% have implemented the Web Content management module, 50.00% have implemented the Workflow Management module

Conclusions

This study revealed inadequacy of research work that specifically addresses the issues of ECMs & ERPs both Kenya's public and private sector. The bulk of the extant literature addresses the generality of electronic records management issues. The findings of this study particularly showed that increasingly, public sector institutions in Kenya are generating digital records as a result of increasing adoption of ICTs in government service delivery. From the findings it would seem that some of these institutions have implemented ECM to manage their digital records. However, some of the institutions are yet to follow suit particularly so given the direction the country is taking in digitizing most of its service delivery as anecdotal evidence show. The findings further indicated that emerging technologies such as cloud computing are yet to be incorporated in the area of records management given the number of respondents who gave a negative response on whether this had been implemented in their institutions and those that responded that they did not know. The study therefore recommended that academic institutions that offer records management such as Moi University should incorporate these emerging areas in their curricula to prepare students who will be champions in implementing ECM and such technologies as cloud computing in managing digital records.

Products

1. Annotated Bibliography
2. Literature Review

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