

# InterPARES Trust Project Report



Title and code:	Investigating the management of digital records in enterprise-wide systems: Zimbabwe AF03
Document type:	Final report
Status:	Draft
Version:	2
Research domain:	Infrastructure
Date submitted:	January 26, 2018
Last reviewed:	November 27, 2017
Author:	InterPARES Trust Project
Writer(s):	Forget Chaterera
Research team:	<b>Dr Forget Chaterera</b> – Lead Researcher (National University of Science and Technology, Zimbabwe) <b>Ms Anna Tidlund</b> - Graduate Research Assistant (University of British Columbia, Canada) <b>Mr Mehluli Masuku</b> – Researcher (National University of Science and Technology, Zimbabwe) <b>Mr Sindiso Bhebhe</b> – Researcher (National Archives of Zimbabwe) <b>Prof. Mpho Ngoepe</b> – Researcher (University of South Africa) <b>Dr Shadrack Katuu</b> – Researcher (International Atomic Energy Agency, Austria)

Document Control

Version history			
Version	Date	By	Version notes
1	November 27, 2017	F Chaterera	Compiled and summarized the major highlights of phases 1, 2 and 3.
2	January 22, 2018	F Chaterera	Adjustments to the final report were done in accordance with the input, comments and feedback obtained from the InterPARES International Seminar, 4-7 December 2017-Cape Town, South Africa.

## Table of Contents

<b>Abstract.....</b>	<b>4</b>
<b>Research team .....</b>	<b>4</b>
<b>Background .....</b>	<b>5</b>
<b>Research questions.....</b>	<b>6</b>
<b>Objectives.....</b>	<b>7</b>
<b>Methodology .....</b>	<b>8</b>
<b>Findings.....</b>	<b>8</b>
<b>Conclusions .....</b>	<b>13</b>
<b>Products .....</b>	<b>13</b>
<b>References.....</b>	<b>14</b>
<b>Appendix I: Annotated bibliography .....</b>	<b>Error! Bookmark not defined.</b>
<b>Appendix II: Literature review .....</b>	<b>Error! Bookmark not defined.</b>

## **Abstract**

The project assessed the types of enterprise systems being used to manage digital records in Zimbabwe's public sector. It explored the relationship between enterprise wide systems and other existing systems and how these affect the management of electronic records. The project contributes to the infrastructure domain as it assessed the types of enterprise systems being used to manage digital records in Zimbabwe's public sector. It explores how the enterprise wide systems fit and relate with other systems in the enterprise architecture and the impact on the management of digital records. The study was concurrently done with the other two related case studies in the Africa team namely Kenya and Botswana. Chief amongst other reasons for undertaking the research was because very few studies have investigated on how digital records are being managed in public institutions as most studies focused more on conventional issues surrounding records and the archives management. The results of the study obtained from an annotated bibliography, literature review and a survey done in Zimbabwe's government departments' revealed lack of appreciation and understanding in the use of enterprise wide systems to manage electronic records.

## **Investigating the management of digital records in enterprise-wide systems: Zimbabwe**

### **Research team**

#### **Lead Researcher**

Forget Chaterera – National University of Science and Technology, Zimbabwe

#### **Project Researchers**

Mehluli Masuku – National University of Science and Technology, Zimbabwe

Sindiso Bhebhe – National Archives of Zimbabwe

Mpho Ngoepe –University of South Africa

Shadrack Katuu – International Atomic Energy Agency, Austria

#### **Graduate Research Assistants [with dates of participation month-year]**

### Dates of participation

Month	Year
April	2016
May	2016
June	2016
August	2016
September	2016
January	2017
July	2017
November	2017

### Background

The management of public sector records in Zimbabwe is fairly documented. The 21<sup>st</sup> century has seen a number of research work and studies on how public records are being managed in Zimbabwe (Barata et al., 2001, Chaterera, 2013, David et al., 2013, Dewah, 2010, Dewah and Mnjama, 2013, Malemelo et al., 2013, Matangira, 2010, Mazikana, 1996, Mazikana, 1997, Mazikana, 1998, Mazikana, 2009, Millar and Roper, 1999, Ngulube, 2004, Ngulube and Tafor, 2006, Sigauke and Nengomasha, 2012). However, very few studies have investigated on how digital records are being managed in public institutions as most studies focused more on conventional records and the archives. For instance, Dewah and Mnjama (2013) did an assessment of the National Archives of Zimbabwe's Records Centre in Gweru. Sigauke and Nengomasha (2012) addressed the challenges and prospects facing the digitisation of historical records for their preservation within the National Archives of Zimbabwe. Matangira (2010) did a study that investigated on audiovisual archiving in Africa and Zimbabwe was part of her research site. Barata et al., (2001) looked at the accounting records systems in the Government of Zimbabwe with the intention of producing a case study on financial management accountability and record keeping in the Zimbabwe's public service.

A limited number of studies have addressed the management of digital records in Zimbabwe. Ngulube and Tafor (2006) argued that management of electronic records has been a frustration and intentionally avoided in many countries due to the lack of resources,

expertise and facilities to manage the electronic media. Mnjama (2005) posited that archival legislation in most countries in the ESARBICA region failed to address issues relating to electronic records. In this regard Ndenje-Sichalwe (2011) argued that archives legislation should provide adequately for such electronic records and outline how to deal with electronic records creation, accessibility and disposal. Chaterera (2013) conducted a study that sought to establish if the National Archives of Zimbabwe covered electronic records when performing records and information management surveys in public departments. Her study found that electronic records were barely covered and the outstanding argument was that the National Archives of Zimbabwe Act (Zimbabwe, 1986, Chapter 309: Sec 6-7) from which the surveys are derived makes no mention of the examining of electronic records. This echoes observations by Ngulube and Tafor (2006) that only two member countries of the ESARBICA region included electronic records during records surveys and inspection. The results were in harmony with the research conducted by Ngulube and Tafor (2006:5) who concluded that, “electronic records in member countries of East and Southern Africa Regional Branch of the International Council on Archives (ESARBICA) are in danger of being lost due to benign neglect” and this includes Zimbabwe.

The brief discussion demonstrates that research on the management of digital records in Zimbabwe is still in its infancy. This is evidenced by lack of such studies that explicitly touch on how digital records are managed in the Zimbabwe’s public sector. As such, the current study sought to narrow that gap by investigating into the implementation of enterprise wide systems to manage digital records in Zimbabwe’s public sector

### **Research questions**

In pursuance of the study’s goal to ascertain the management of electronic records in Zimbabwe’s public sector, a survey instrument was developed collaboratively between four countries namely Kenya, Botswana, South Africa and Zimbabwe. 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. As such, the following 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?

## Objectives

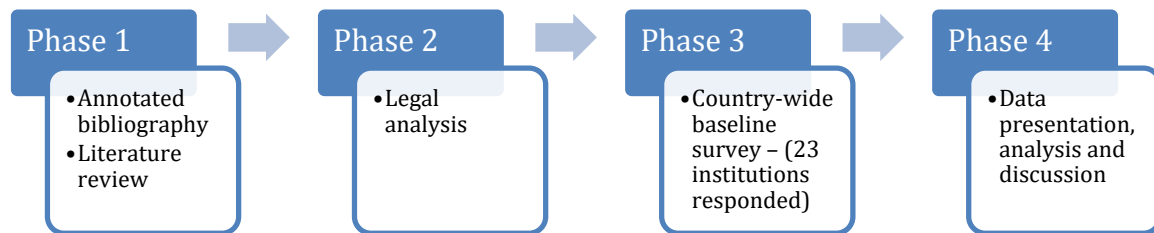
The objectives of the research were to:

1. Establish the main challenges in managing digital records within public institutions in Zimbabwe (*Paying particular attention to the technological framework in the country's public sector institutions*)
2. Examine the technological environments within which records are being generated with the goal of determining whether Enterprise Content Management (ECM) applications are used
3. Determine whether the ECM applications being utilised are open source or proprietary. This will include investigating the integration between ECM applications and other business systems such as Enterprise Resource Planning system.
4. Ascertain whether the Enterprise Content Management applications have been implemented in a cloud environment or not

## Methodology

The project was executed following the four stages depicted in Figure 1;

**Figure 1: Research phases**



## Findings

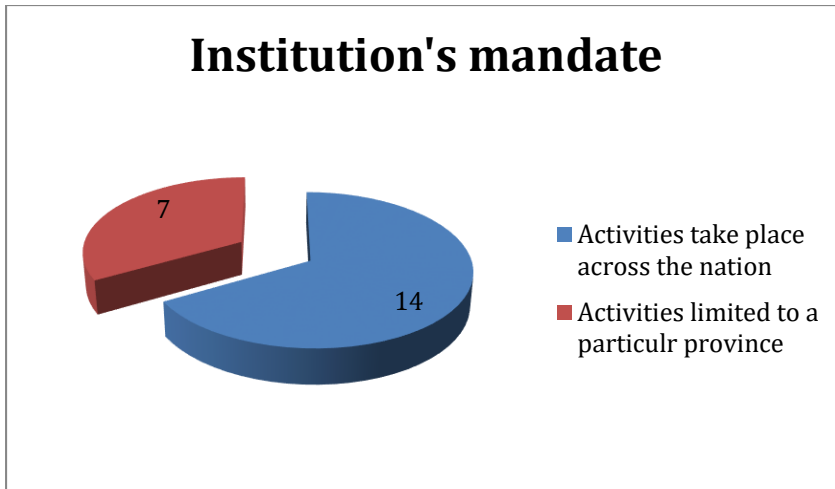
The response rate for the study stood at twenty-three with the bulk of the respondents coming from the executive branch public sector as depicted in Table 1.

**Table 1: Response rate (n=23)**

<b>Respondents' sector</b>	<b>Number of people (%)</b>
Public Sector – Executive Branch: Social	14 (60.87%)
Public Sector – Parastatals	4 (17.39%)
Public Sector – Executive Branch: Leadership	2 (8.70%)
Public Sector – Executive Branch: Economics	1 (4.35%)
Public Sector – Executive Branch: Environment	1 (4.35%)
Voluntary sector-Nongovernmental organizations and not for profit institutions undertaking social activities	1 (4.35%)

The twenty-one out of the twenty-three respondents displayed in Table 1 indicated the scope of their institutions' mandate as shown in Figure 2





**Figure 2: Institution's mandate**

The distribution of the respondents in terms of their departments was as displayed in Table 2.

**Table 2: Respondents' departments**

n=21

Department	Number of respondents
Records/Archives professional	13 (61.90%)
Administration	2 (9.52%)
Information Technology	2 (9.52%)
Other	2 (9.52%)
Operations (specific to the core business of the institution)	1 (4.76%)
Accounting/Finance	1 (4.76%)

This study was premised on the understanding that many institutions around the world are using cloud computing to manage their information assets. As such, the researchers deemed it essential to establish the use of cloud computing in Zimbabwe's government departments and the reasons for having such systems in place. Out of the twenty-one responses obtained on this aspect, eleven indicated none use of cloud computing in their institutions and one did not know whether cloud computing was in use or not. The remaining nine respondents

indicated use of cloud computing in their respective institutions and the reasons they cited for adopting cloud computing are displayed in Figure 3.

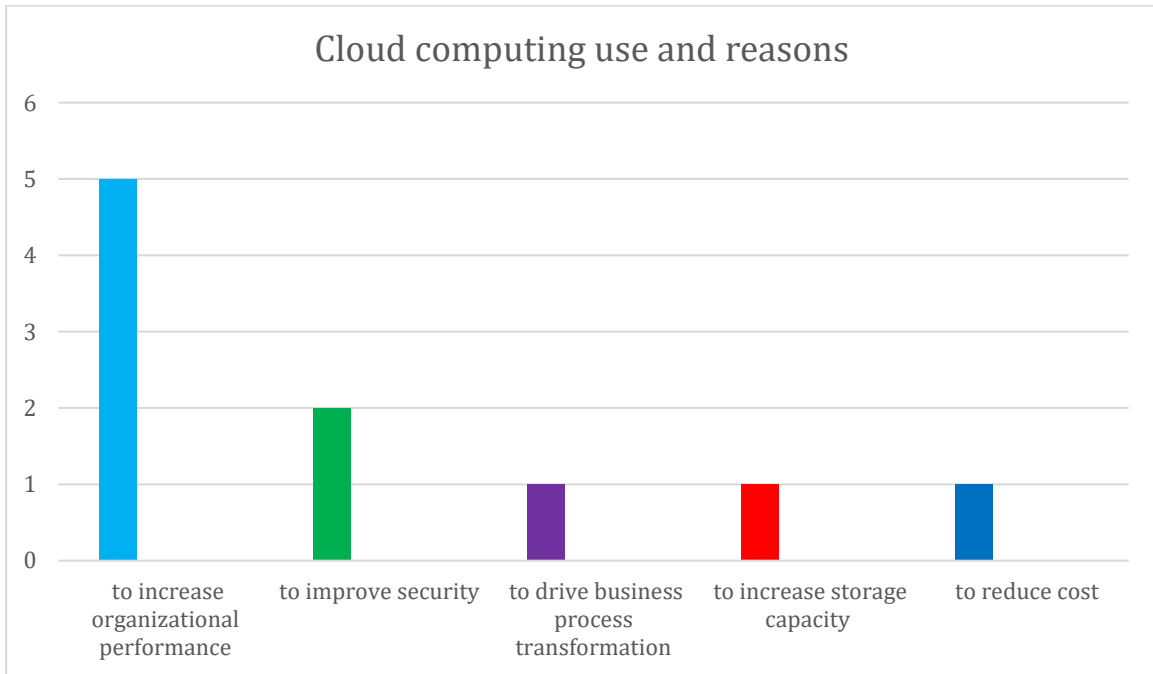


Figure 3: Cloud computing use and reasons

A follow up question to the above depicted results was made to establish the service models that were used by the respective institutions that had indicated use of cloud computing to manage their information assets. Table 3 shows the results that were obtained.

Table 3: Cloud computing service models

n=19

Service model	Number of responses
None	9
I don't know	5
Private cloud	2
Community cloud	1
Public cloud	1
A combination of all four service models (Private, Community, Public and Hybrid)	1

The results depicted in Table 3 were inconsistent with responses obtained from question four as nineteen research participants responded to the question yet only eleven had indicated use of cloud computing. This suggests that the participants were not conversant with cloud computing issues despite the attempt by the researchers to explain the issues before asking the questions.

For those that had indicated to have services as shown in Table 3, the most common cloud deployment model was Platform as a Service (Paas) accounting for 10% of the responses followed by Infrastructure as a Service (IaaS) and Software as a Service (SaaS) which had both a response rate of 5%. Another 5% indicated use of a combination of two deployment models.

In light of the background that many institutions have implemented enterprise resource planning systems to integrate the management of their core business processes, the current study sought to establish the functional areas covered by transactional systems. and the following responses were obtained.

**Table 4: Functional areas covered by the transactional system**

n=21

<b>Functional areas</b>	<b>Number of responses</b>
Accounting	8
Inventory or stock management	4
Project management	4
I don't know	4
None	4
Human resources	3
Customer relationship management	3
Marketing and sales	2
Operations	2
Data service that are self-service interfaces for customers, suppliers and/ or employees	1
Supply chain management	1

Order Processing	1
Corporate services	1
Manufacturing	1

A follow up question was made to establish the companies that supply the transactional system(s). The majority of respondents indicated that they did not know and these accounted for 13(62%) of the responses. The most common transactional system suppliers were SAP Business and Microsoft Dynamics followed by Oracle E-Business Suite. 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. As was the case with the previous question, a huge number of respondents (12 (57%)) indicated that they did not know the company that supplied their ECM system. The most common ECM systems suppliers were Microsoft (SharePoint/Office 365) and HP (TRIM/Records Manager).

It is understood that ECM systems often have different modules performing different activities. There are some instances where institutions have integrated their transactional systems with their ECM systems. As such, this study sought to find out if there has been any significant integration in those institutions that had both ECM and ERP systems in place.

- **Collaboration** had 16% with no integration and 67% with minimal integration and 16% with full integration
- **Records management** had 38% with no integration, 50% with minimal integration and 13% with full integration
- **Scanning** had 17% with no integration, 17% with minimal integration and 67% with full integration
- **Digital Asset Management** had with 11% with no integration, 78% with minimal integration and 11%
- **Document management** had 14% with no integration, 71% with minimal integration and 14% with full integration

- **Workflow** had 17% with no integration, 33% with minimal integration and 50% with full integration
- **Web content management** 14% with no integration, 43% with minimal integration and 43% with full integration

## Conclusions

This study revealed inadequacy of research work that specifically addresses the issues of ECMs & ERPs both in Zimbabwe's public and private sector. The bulk of the extant literature addresses the generality of electronic records management issues. The various pieces of legislations relevant to electronic records management are relatively passive and inefficient to creating a conducive environment to proper electronic records management. The use of ECMs is vaguely understood as evidenced by the inconsistencies in responses obtained. As such, the academic community and other researchers are challenged to accordingly address the status quo and ensure that the issues of electronic records management do not remain distant and vague in Zimbabwe's public sector.

## Products

1. Annotated Bibliography
2. Literature Review

## References

- Barata, K, Kutzner, FJ & Wamukoya, J. 2001. Records, computers, and resources: a difficult equation for Sub-Saharan Africa. *Information Management* 35(1): 34-42.
- Chaterera, F. 2013. Records survey and the management of public records in Zimbabwe. Masters Dissertation, University of South Africa, Pretoria.
- David, R, Ngulube, P & Dube, A. 2013. A cost benefit analysis of document management strategies used at a financial institution in Zimbabwe. *South African Journal of Information Management* 15(2): 1-10.
- Dewah, P. 2010. Records management surveys as a marketing tool for records services in the public sector: The case of Zimbabwe. In: Archival conference on records and archives in support of good governance and service delivery, Pretoria, South Africa, 9–10 July 2010.
- Dewah, P, Mnjama, N. 2013. An assessment of the National Archives of Zimbabwe's Gweru Records Centre. *ESARBICA Journal* 32: 55–67.
- Malemelo, F, Dube, A, David, R & Ngulube, P. 2013. Management of financial records at the Marondera Municipality in Zimbabwe. *Journal of the South African Society of Archivists*. Vol. 46 (2013).
- Mazikana, P. 1997. *Africa*, in Courier, Y. (Ed.) World Information Report, UNESCO, Paris, pp. 144:154
- Mazikana, P. 1998. Records Management Training in Sub-Saharan Africa. *Records Management Journal* 8(3): 77-83.
- Mazikana, P. 2009. A missed opportunity: archival institutions and public sector reforms. *Journal of the Eastern and Southern Africa Regional Branch of the International Council on Archives* 28: 36-51.
- Roper, M & Millar, L (eds). 1999. International Records Management Trust: managing archives: a training programme. <http://www.irmt.org/> (Accessed 11 May 2016).
- Mnjama, N. 2005. Archival landscape in Eastern and Southern Africa. *Library Management* 26(8/9): 457-470.
- Ngulube, P. 2004. Implications of technological advances for access to the cultural heritage of selected countries in Sub-Saharan Africa. *Government Information Quarterly* 21(2) 143-155.
- Ngulube, P. & Tafor, VF. 2006. The management of public records and archives in the member countries of ESARBICA. *Journal of the Society of Archivists* 27(1): 57-83.
- Sigauke, DT. & Nengomasha, CT. 2012. Challenges and prospects facing the digitization of historical records for their preservation within the National Archives of Zimbabwe. Paper presented at the ICADLA 2: International Conference on African Digital Libraries and Archives, Johannesburg