AF04 – Managing digital records in networked environments: Botswana

Research Team:

Team Leader: Trywell Kalusopa, PhD (Ass. Professor, Information Science)

Researchers: Tshepho Mosweu (PhD Candidate)
Shadrack Bayane (Records Management Consultant)

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Outline

• Brief Overview of InterPARES Project
• Progress to date on research and dissemination activities undertaken
• Introduction – an outline of the case study
InterPARES – 4 phases to date

InterPARES 1 (1998-2001) [www.interpares.org](http://www.interpares.org)

- Researched issues pertaining to digital records in databases and office management systems in the course of administrative activity
- Focused on developing theory and methods to ensure preservation of authenticity
- Studied records from the perspective of the records preserver
InterPARES – 4 phases to date

InterPARES 2 (2002-2007) [www.interpares.org](http://www.interpares.org)

- Researched issues pertaining to digital records in dynamic and interactive systems in artistic, scientific, and government activity
- Examined issues of authenticity, reliability, and accuracy over the lifecycle
- Studied records from the perspective of the records creator
InterPARES – 4 phases to date

InterPARES 3 (2007-2012) [www.interpares.org](http://www.interpares.org)

- Put theory into practice in archives / records units in organizations with limited financial or human resources
- Applied and tested the findings of InterPARES 1 and 2 to implement sound programs supporting the creation and preservation of digital records that could be shown to be authentic, reliable, accurate
Impact

• Legislation: Italy, China
• Policies & procedures: all participating countries, public/private sector
• Curriculum for continuing education, university training: ICA Education Modules for Digital Preservation (2012 with translation to Chinese, Spanish, Arabic); Digital Diplomactics and Digital Records Forensics (2013-present, UBC)
InterPARES Products

All InterPARES 1-3 Products are available at

www.interpares.org
InterPARES Trust (2013-2018)

www.interparestrust.org

Purpose:

• To generate theoretical & methodological frameworks to support development of integrated & consistent local, national, & international networks of policies, procedures, regulations, standards, & legislation for digital records in online, networked, environments, in order to

• Ensure public trust grounded on evidence of good governance, strong digital economy, & persistent digital memory
Background...AF 04

• This study is part of InterPARES Trust (IP Trust) projects which is a multi-disciplinary and multinational research project that explores issues concerning digital records entrusted to the Internet world-wide.

• The Botswana Team research focus is on Implementation of enterprise-wide systems to manage trustworthy digital records in Botswana’s public sector.
Work Completed...

• Annotated bibliography
• Legal analysis
• Literature review
• Baseline survey (current presentation)
• Next – In-depth study
Annotated bibliography

• The annotated bibliography of the Botswana study thematically covers:
  • a) Policies and regulatory framework for the management and preservation of records in Africa
  • b) Policies and regulatory framework for the management and preservation of records in Botswana
  • c) Implementation of enterprise wide systems to manage digital records in Botswana’s public sector.
Legal Analysis

• The study has revealed that Botswana **still lags behind in the promulgation of legislation that guide the implementation of enterprise wide systems** in the Botswana public sector with regards to the issue of trustworthiness.

• Data protection and Freedom of Information legislations **have not yet been enacted**.

• Legislation recognizing electronic records as evidence and in e-commerce transactions **is in place in the form of the Electronic Communications and Transactions Act**, which gives electronic signatures the legal equivalence to the handwritten signatures and is meant to promote a technology-neutral legal framework for the creation of e-signatures and gives legal recognition to certificates created or issues locally or externally.

• Electronic Records (Evidence) Act **now exists provides for the admissibility of electronic records as evidence in legal proceedings and authentication of digital records**.

• There is **still need to amend existing legislation** such as the National Archives and Records Services Act and the Cybercrime and Computer Related Crimes Act to accommodate the management of electronic records in the country.
Literature Review

• Literature review covered over **50 published articles**
• Examined the state of enterprise-wide systems and ECM applications in the Botswana public service to:
  – determine their relationship (if any) to existing archives and records management (ARM) practices, and;
  – contextualize these enterprise-wide systems and ECM applications with acknowledged ARM challenges in Botswana and Africa.

• **Key Finding:**
  • Digital records in Botswana’s public institutions are managed in a **hybrid manual-electronic system, with opportunities for improvement and increased focus on digital RM.**
  • Legal context of ARM in Botswana is **strong at the national level, but some key pieces of legislation, such as FOI and Access to Information, remain to be implemented.**
  • Botswana’s ARM education programs, **although recognized as strong, have not been effectively utilized for the benefit of the public service,** most notably due to failures on the part of government to retain staff.
  • E-government ICTs **have penetrated many or most of Botswana’s public sector institutions, even if they do not necessarily interoperate with ARM systems.**
  • Was unable to discern **whether any of them were cloud-based.** Although their connections to ARM practice were not always clear, Botswana has a stated interest in tying its ICT and e-government initiatives to ARM
Baseline Study Phase

• The survey instrument was developed collaboratively between four country studies AF02, AF03, AF04 and AF05.

• The survey instrument had 10 questions in the following broad categories
  – Background information (questions 1-3)
  – Cloud services (questions 4-6)
  – Enterprise resource planning (ERP) applications (questions 7 and 8)
  – Enterprise content management (ECM) and ERP integration (questions 9 and 10)

• However, each country case study acknowledged its own nuances particularly in the background information. For instance, Question 2 asked about the scope of the institution in Botswana divided about district vs national scope or county vs national scope.
Baseline - Methodology

• Cross-sectional study undertaken in May 2017.
• An online web survey was distributed to 50 potential respondents and **31 responded (62%)**
• Baseline survey of public sector institutions was done through a Survey Monkey which enabled easy data analysis and presentation of results and reports.
Survey Question 1 – Institutional Background – type of institution

Type of Institution

- Private Sector: 32%
- Public Sector Economics: 23%
- Public Sector Executive: 10%
- Public Sector Environment: 3%
- Public Sector Social: 10%
- Public Sector Parastatals: 22%
Survey Question 2 & 3 – Institutional Mandate

Institutional Scope Of Mandate

- 90%: Activities across the nation
- 10%: Activities to a particular District
Survey Question 2 & 3 – Location

Respondent's Department

- Executive & Senior Management: 45%
- Accounting & Finance: 7%
- Administration: 7%
- Human Resources: 7%
- Information & Technology: 3%
- Research: 6%
- Technical Services: 6%
- Operations: 6%
- Records & Archives: 3%
- Others: 3%
Functional Areas Covered by ERP Systems

- Accounting: 21%
- Corporate Services: 1%
- Customer Relationships: 10%
- Data Services: 4%
- Human Resources: 3%
- Inventory or Stock Management: 14%
- Manufacturing: 1%
- Marketing & Sales: 2%
- Operations: 6%
- Order Processing: 2%
- Project Management: 4%
- Supply Chain Management: 8%
- I don’t know: 1%
- None: 0%
Companies Supplying ECM System

Companies Supplying ECM System

- None: 32%
- I don’t know: 16%
- Dell EMC (Documentum): 19%
- HP (TRIM/Records Manager): 11%
- IBM (Content Foundation): 8%
- Lexmark Enterprise Software: 5%
- Microsft (Sharepoint/Office 365): 3%
- Oracle (Stellent/Webcenter): 3%
- Other: 3%
Integration of ERP & ECM Systems

![Bar chart showing the integration levels of various modules.]

- **Workflow Management Module**: Full Integration, Minimum Integration, No integration.
- **Web Content Management Module**: Full Integration, Minimum Integration, No integration.
- **Scanning Module**: Full Integration, Minimum Integration, No integration.
- **Records Management Module**: Full Integration, Minimum Integration, No integration.
- **Document Management Module**: Full Integration, Minimum Integration, No integration.
- **Digital Asset Management Module**: Full Integration, Minimum Integration, No integration.
- **Collaboration**: Full Integration, Minimum Integration, No integration.
- **None**

Legend:
- Full Integration
- Minimum Integration
- No integration
Deployment Cloud - Usage and Reasons

Service Models Used

- None: 59%
- I don't know: 4%
- Hybrid Cloud: 11%
- Private Cloud: 11%
- Public Cloud: 11%
- Combination of Service Models: 4%
Deployment Cloud-Deployment Models Used

- None: 60%
- I don't know: 27%
- Infrastructure as a Service (IaaS): 3%
- Platform as a Service (PaaS): 3%
- Software as a Service (SaaS): 7%
Conclusion

This is an ongoing research project therefore any remarks are only preliminary pointing out the major trends

- **Q1** - **10 (32.6%)** indicated that they were from the Public Sector (Executive Branch: Social), followed by **7 (22.58%)** from Public Sector (Parastatals/State-owned Enterprises/Independent Offices/Commissions/Institutions based on Chapters 4, 5, 6 and 7 of the Constitution), from Public Sector (Executive Branch: Economics/Infrastructure)

- **No respondents** from Voluntary sector - (i.e. Non-governmental organizations and not-for-profit)

- **Q2** - **Most of the respondents 26(89.66%)** indicated that their activities took place across the nation. Only **3(10.34%)** indicated that their activities were limited to a particular District while

- Many institutions have implemented transactional systems such as **enterprise resource planning (ERP) systems**. These systems are business applications that integrate the management of core business processes.

- Functional areas are covered by the transactional system in their institution -
  - Results indicate that Accounting was chosen by most of the respondents **7(54.84%)**


Conclusion

- Most of the respondents 9 (29.03%) of the respondents indicated Oracle E-Business Suite as their ERP supplier.
- Most of the respondents 12 (42.86%) indicated none of the companies listed as the suppliers ECM in their institutions. 7 (25.00%) indicated that Microsoft (SharePoint/Office 365).
- There was either no or less integration of the various modules of the ECM. In order, the records management module was not integrated at all, followed by the documents management and digital assets management modules, then scanning and web content modules.
- Out of the 29 respondents who answered this question, most of them 17 (58.62%) indicated that they did not use cloud-computing to manage their assets.
- Institutions that used cloud computing services were asked to indicate the service models are used in their institutions - that 3 (11.11%) of the respondents indicated that used hybrid cloud, 3 (11.11%) private cloud, and the other 3 (11.11%) indicated they used public cloud.
- Most of the respondents 16 (59.26%) indicated that they used none of the service models outlined.
- Most of the respondents 18 (60%) indicated that they used none of the cloud computing deployment models. 8 (26.67%) indicated that they used Software as a Service (SaaS).