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

- 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

- 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

- 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
- Standards: DOD 5015.2 (2007), MoReq 2 (2008), OAIS (2009), CGSB 72.34 (2017)
- 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 Diplomatics 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.

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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 AF 05.
- 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.**
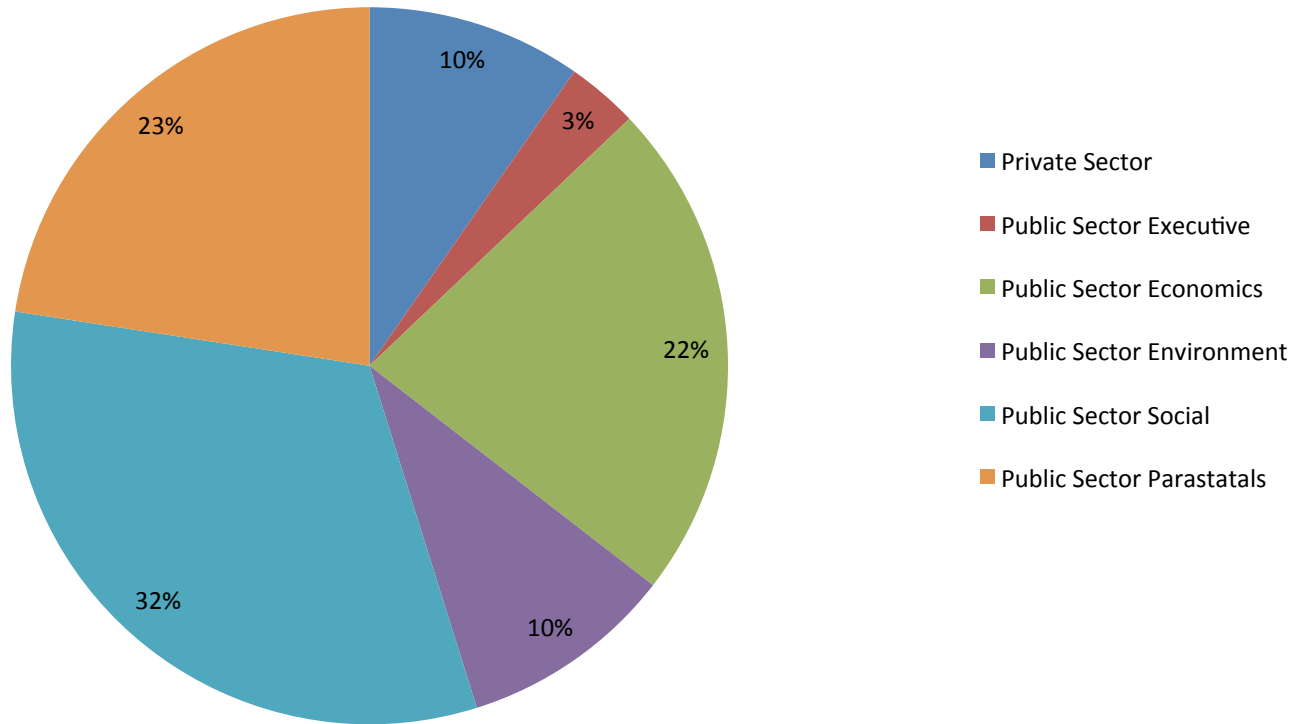
Baseline - Methodology

- 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
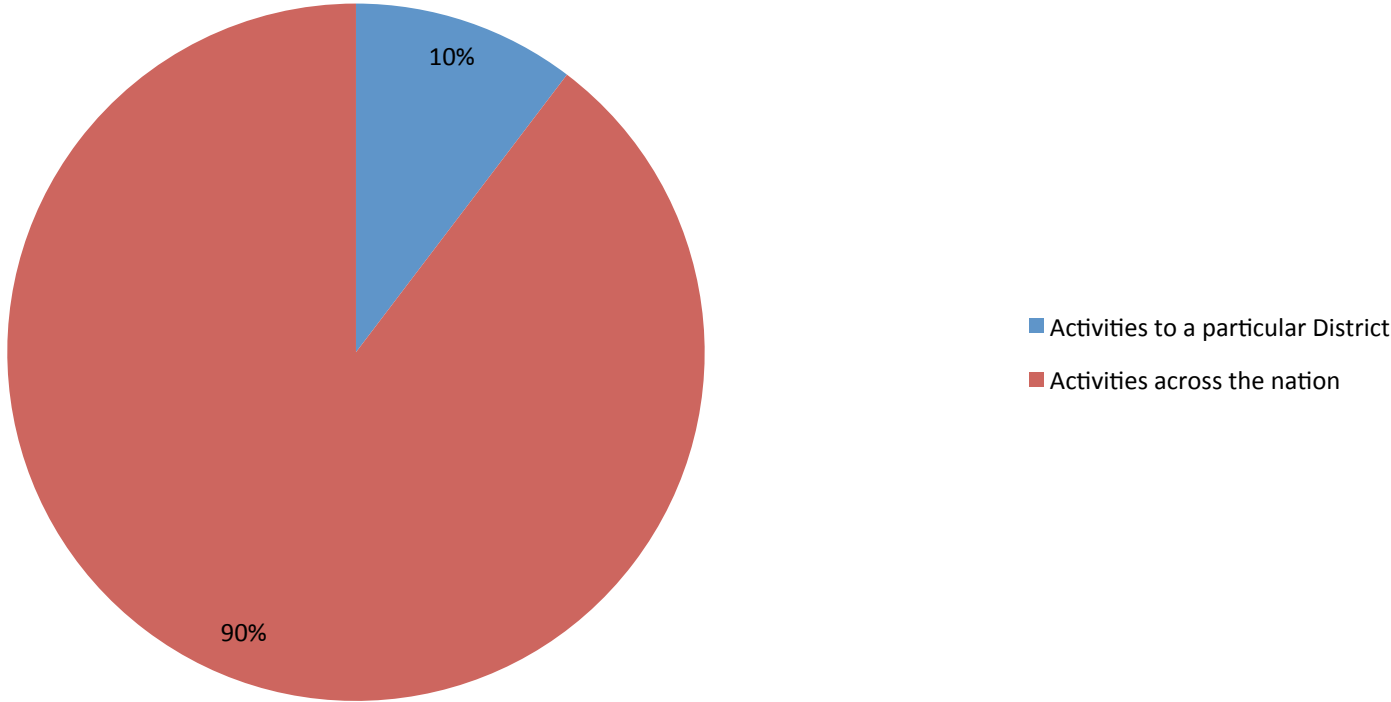
Type of Institution

Legend:
- Private Sector
- Public Sector Executive
- Public Sector Economics
- Public Sector Environment
- Public Sector Social
- Public Sector Parastatals

Values: 10%, 3%, 22%, 10%, 32%, 23%

Survey Question 2 & 3 – Institutional Mandate

Institutional Scope Of Mandate

10%

90%

■ Activities to a particular District

■ Activities across the nation

Survey Question 2 & 3– Location

Respondent's Department

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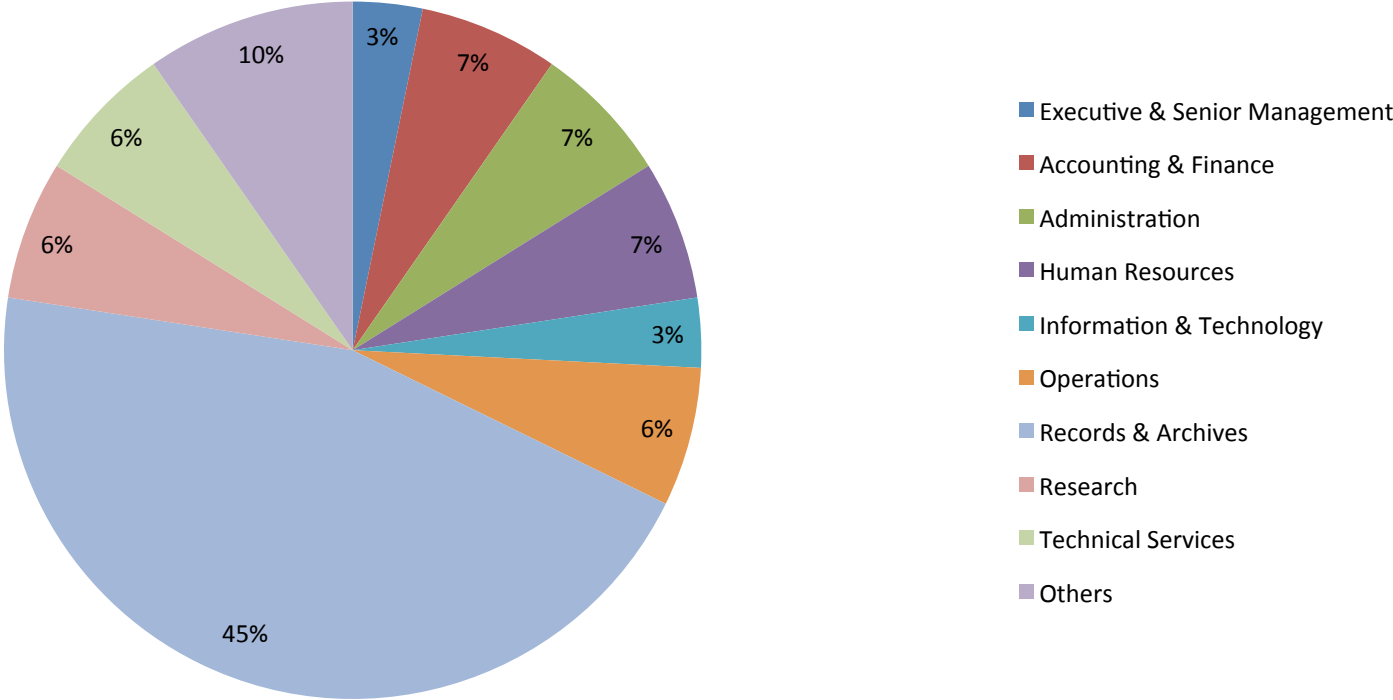
Functional Areas Covered by ERP Systems

Functional Areas Covered by ERP Systems

Legend:
- Accounting
- Corporate Services
- Customer Relationships
- Data Services
- Human Resources
- Inventory or Stock Management
- Manufacturing
- Marketing & Sales
- Operations
- Order Processing
- Project Management
- Supply Chain Management
- I don't know
- None
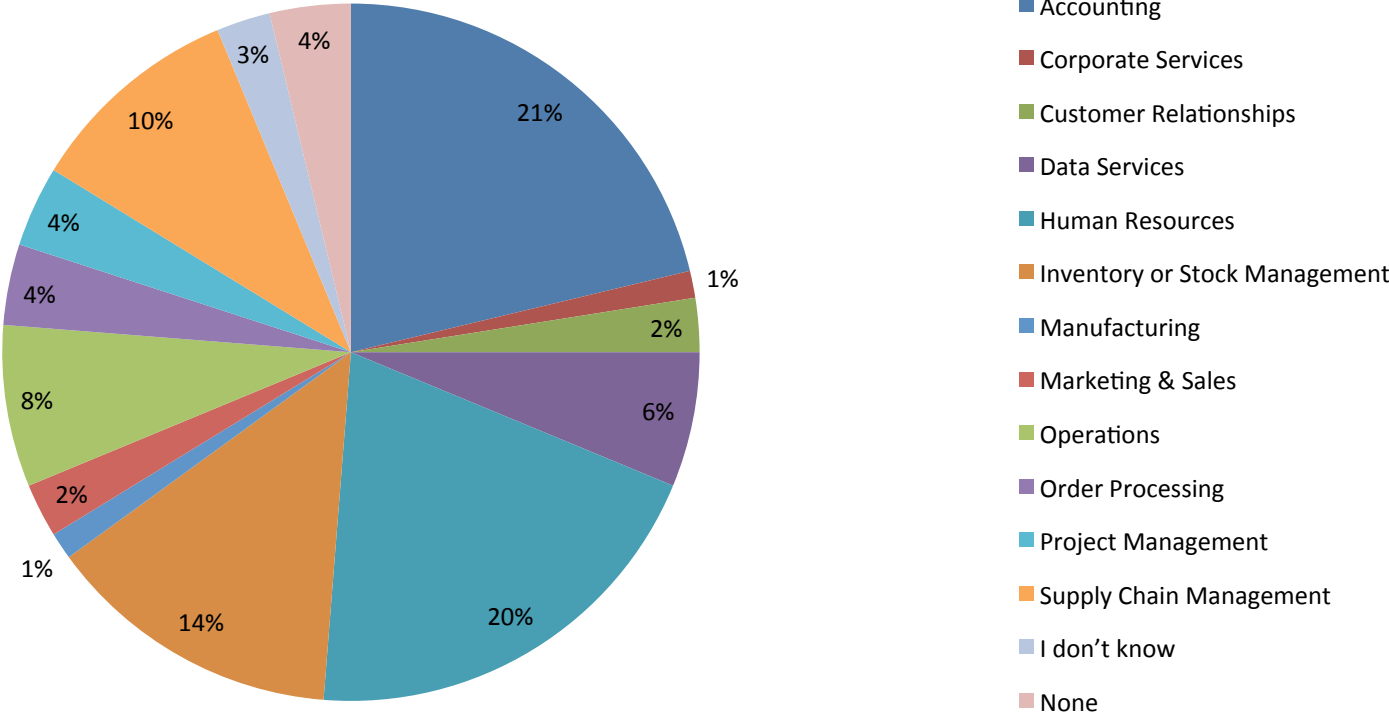
Companies Supplying ERP Systems

Companies Supplying ERP Systems

Legend:
- None
- I don't know
- Baan
- IBM-Maximo
- IFS Application
- Microsoft Dynamics
- Oracle E-business Suite
- Oracle Fusion
- Oracle Hyperiod
- Oracle People Soft
- Oracle Siebel
- Sage Group X3
- SAP Business
- Syspro

Pie chart values: 8%, 16%, 2%, 2%, 2%, 12%, 18%, 4%, 2%, 6%, 2%, 14%, 8%, 2%, 2%
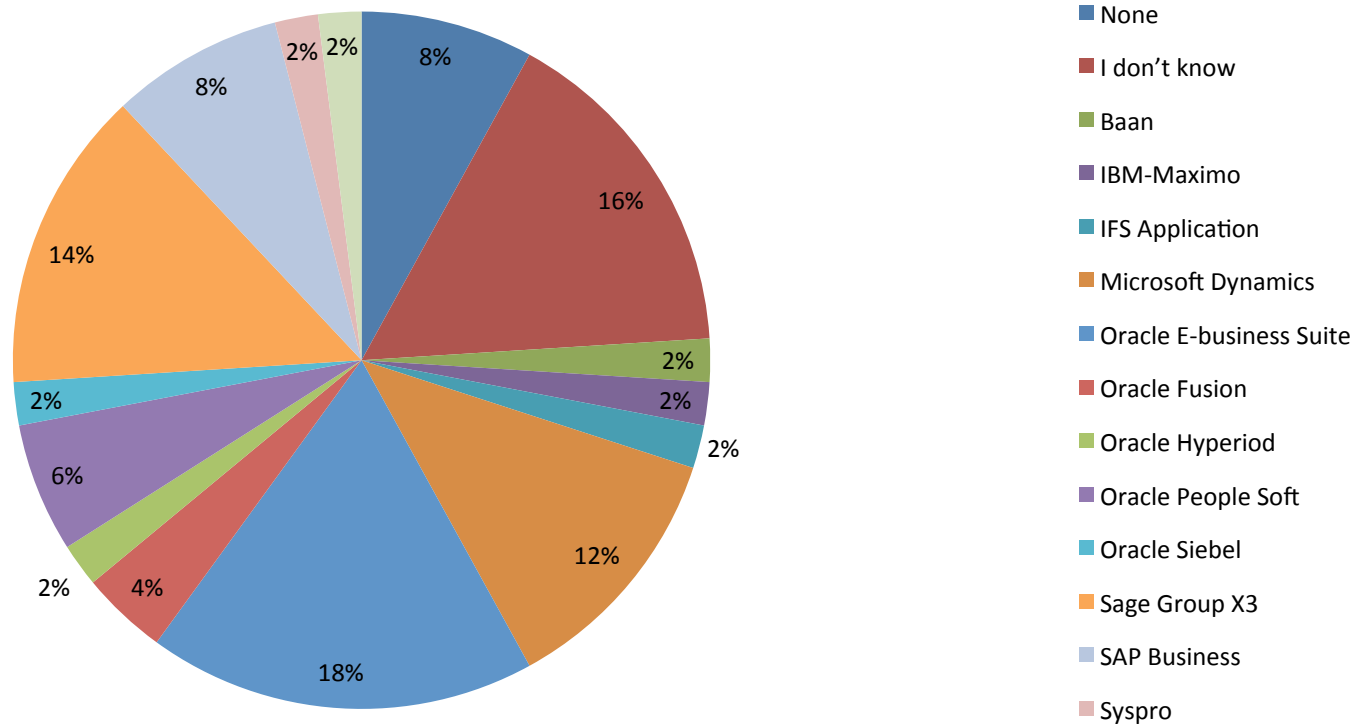
Companies Supplying ECM System

Companies Supplying ECM System

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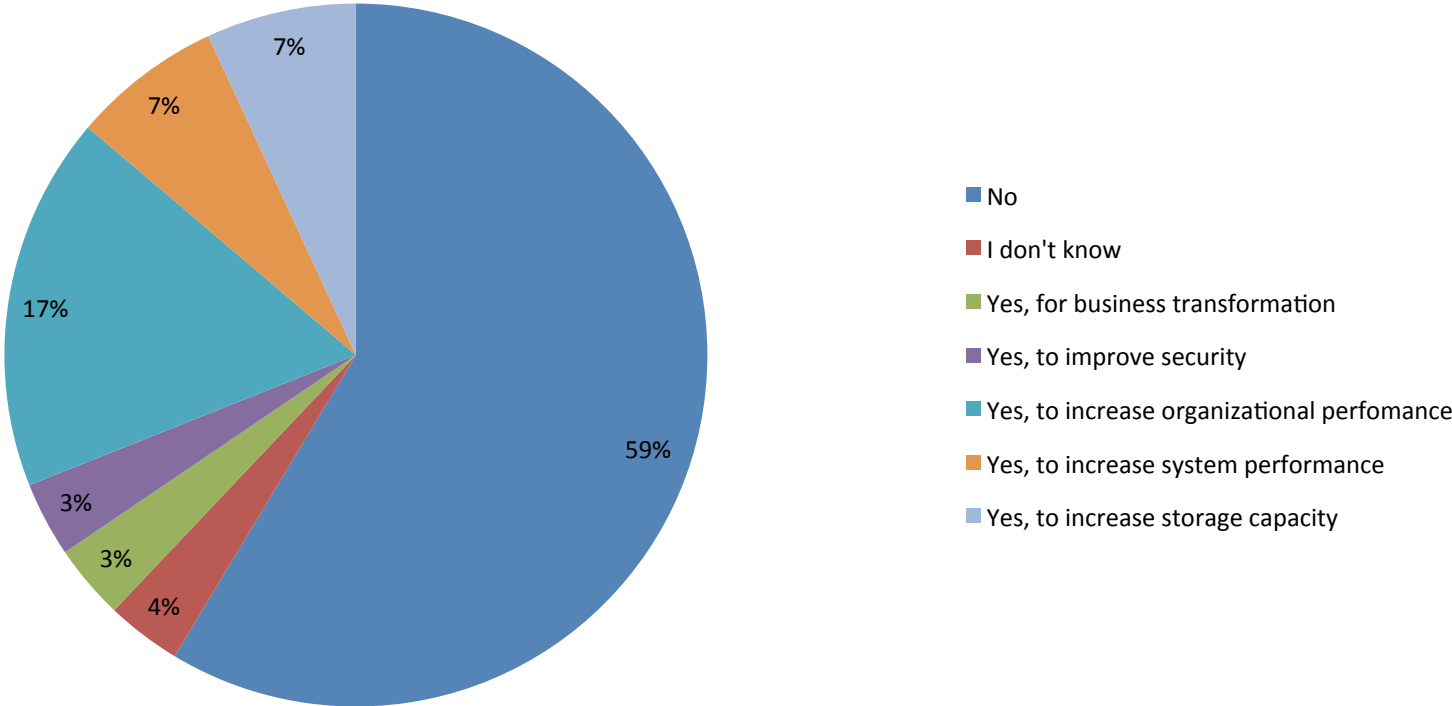- Other — 3%
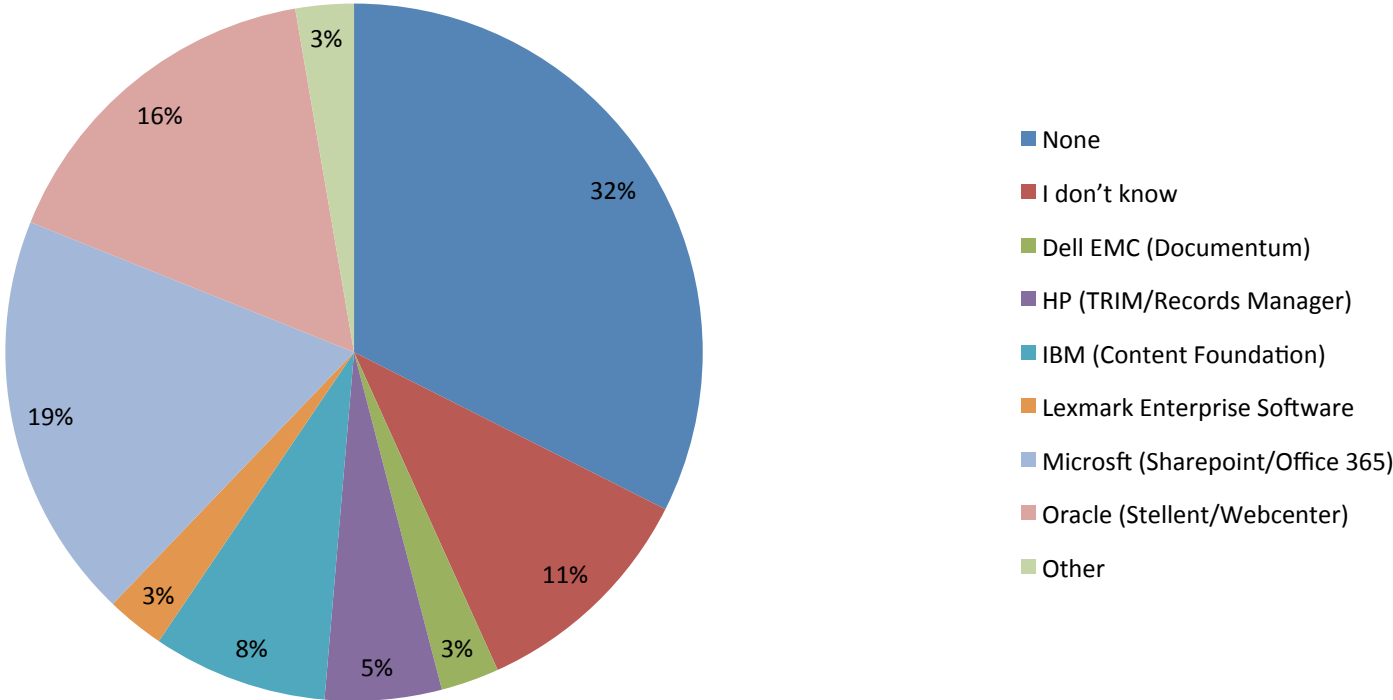
Integration of ERP & ECM Systems

Integration of ERP & ECM Systems
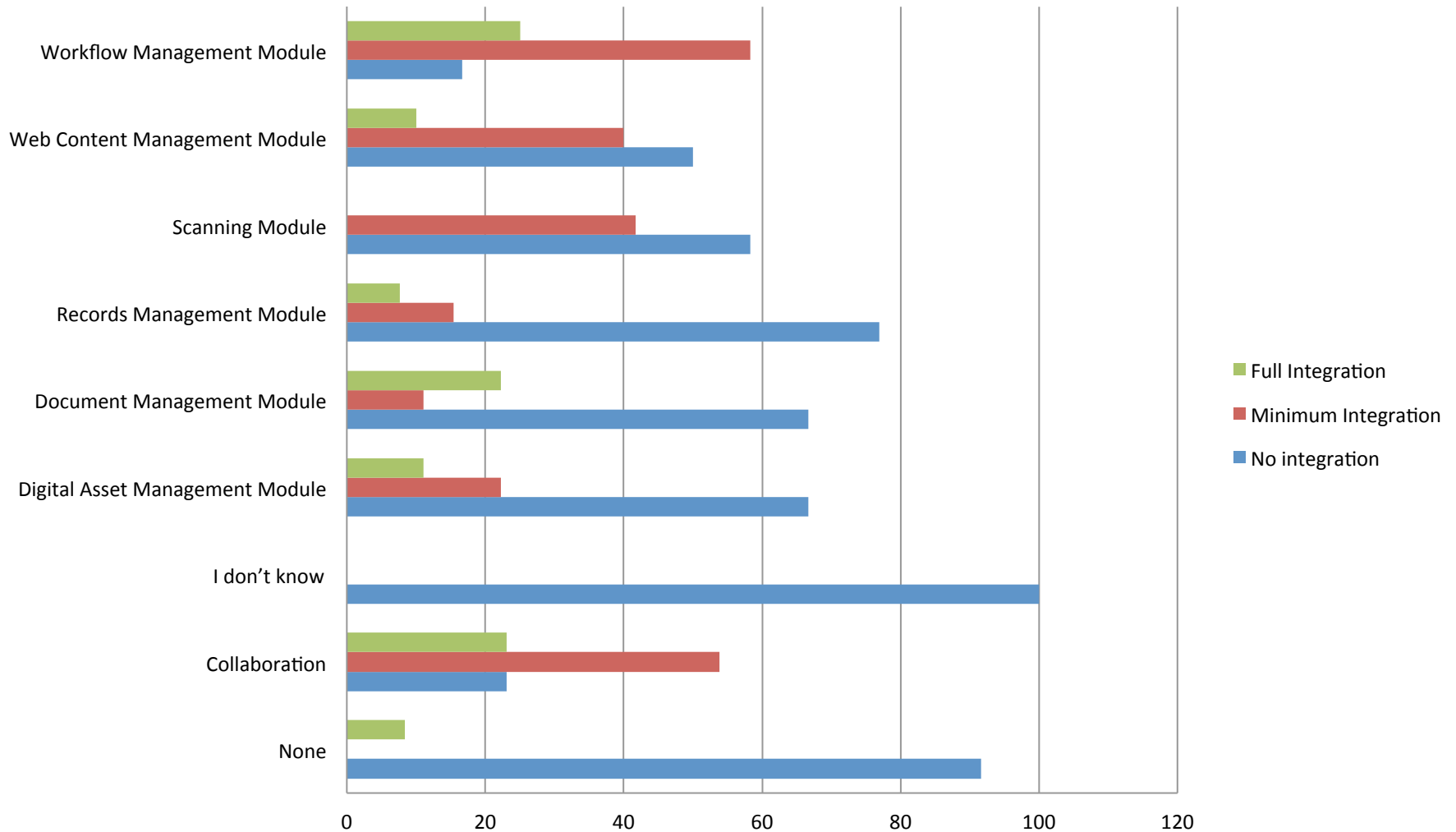
Deployment Cloud- Usage and Reasons

Cloud Computing Usage and Reasons

Legend:
- No
- I don't know
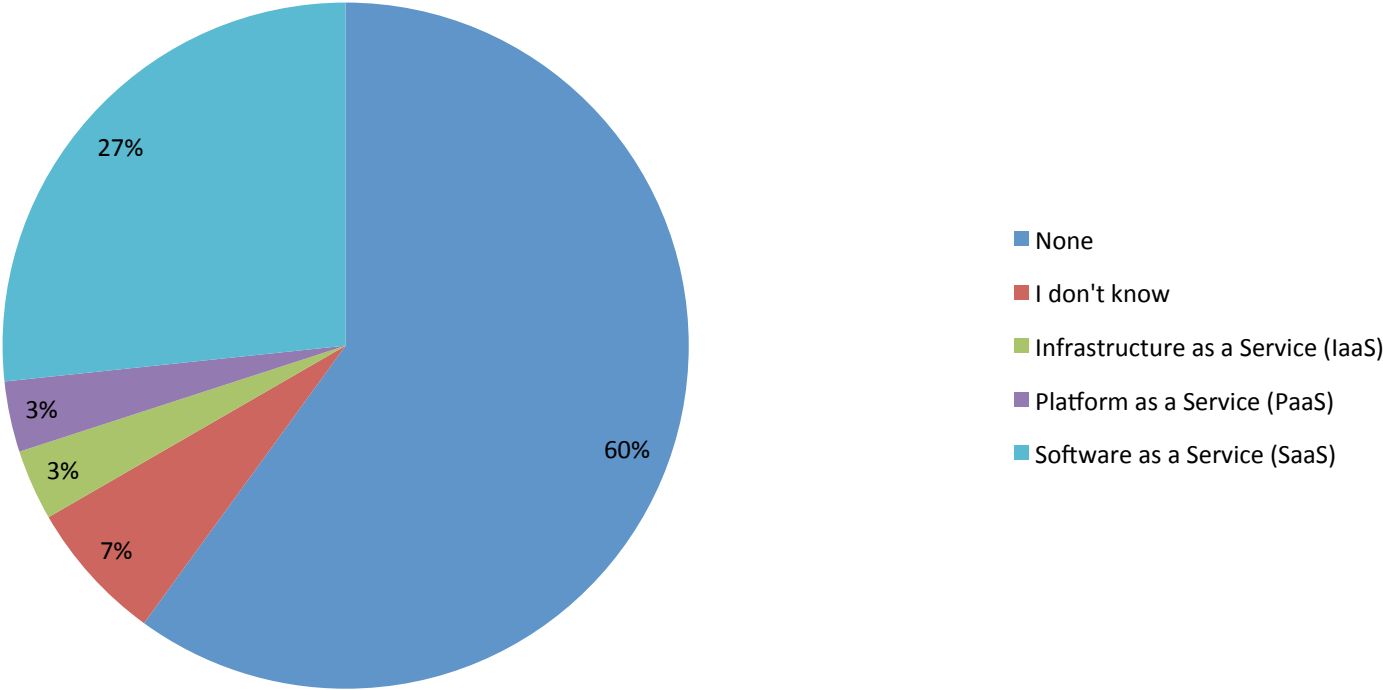- Yes, for business transformation
- Yes, to improve security
- Yes, to increase organizational perfomance
- Yes, to increase system performance
- Yes, to increase storage capacity

Pie chart values: 59%, 4%, 3%, 3%, 17%, 7%, 7%

Deployment Cloud - Usage and Reasons

Service Models Used

Legend:
- None
- I don't know
- Hybrid Cloud
- Private Cloud
- Public Cloud
- Combination of Service Models

Values shown: 59%, 4%, 11%, 11%, 11%, 4%
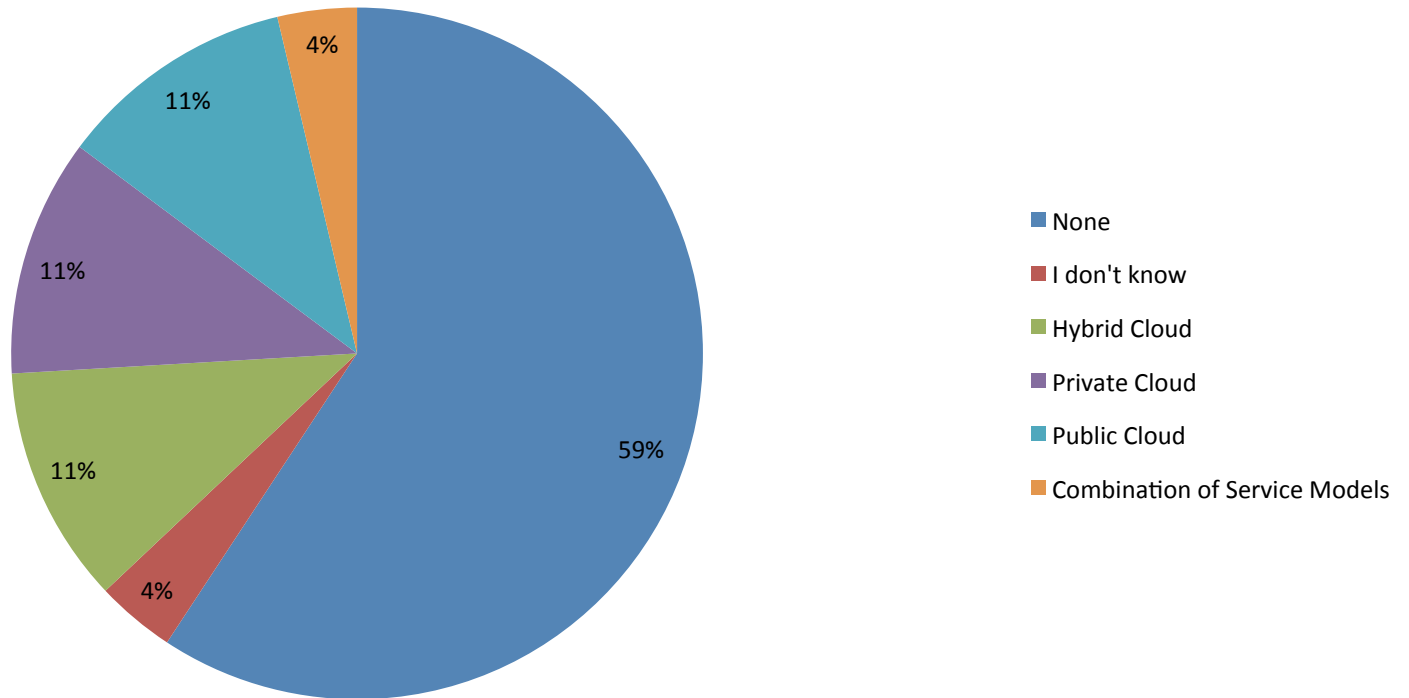
Deployment Cloud-Deployment Models Used

Deployment Models Used

Legend:
- None
- I don't know
- Infrastructure as a Service (IaaS)
- Platform as a Service (PaaS)
- Software as a Service (SaaS)

Chart values: 60%, 27%, 7%, 3%, 3%

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)