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1. Introduction

Enterprise content management (ECM) and enterprise-wide systems relate to the use of comprehensive and overall strategies, tools, implementation, procedures, and abilities for the management of all information assets in the form of structured and unstructured data. This includes the management of information in all media, locations, and statuses of use and transmission, which may include digital assets, data in a cloud environment, web content, metadata, and transitory information. Successful ECM systems aid the controlled capture, management, storage, preservation, and accurate referral of information and digital assets. As a result, ECMs can provide beneficial security, accuracy, efficiency, authority, accountability, and transparency in public-sector institutions. In this literature review, ECMs refer to content management systems— specific products, technology, or infrastructure that aids in the control of information to create, declare, and maintain records.

In Zimbabwe, the implementation of ECM systems for the public sector has not been well documented or studied. Zimbabwe has a complex political, social, economic, and technological history that altogether contributes to the development and climate of records and data management. While conventional paper-records management has been well documented in studies by Dewah and Mnjama (2013), Sigauke and Nengomasha (2012), Matangira (2010), and Barata, Kutzner, and Wamukoya (2001), in-depth digital records-management strategies and research have been limited and isolated. Digital records are increasingly becoming the norm for the public sector, with interest growing in technological infrastructure, e-government strategies and services, and Information and Communication Technologies (ICTs).

Since the ECM model is an overarching framework with many contributing parts that go beyond the effects of technological tools, it is necessary to consider all relevant areas and contexts. This includes investigating the national archival legislation guiding or hindering development, economic factors, political influences, technology and national infrastructure, and social contributors. Ngulube and Tafor (2006) argue that frustrations over the lack of infrastructure, resources, and legislation, as well as attitudes toward a comprehensive records- and content-management strategy, have stagnated digital record-management research and development in Zimbabwe. Similar frustrations exist across Sub-Saharan African countries, making regional studies equally important for

understanding the context of ECM development in the Eastern and Southern African countries.

1.1 Problem Statement and Rationale

Records management has been fairly documented for the public sector in Zimbabwe. However, most of the research conducted has concentrated on conventional paper-records management and archives. Limited research has been completed on the study of digital records, data management, and systems for comprehensive digital records and information control. This literature review surveys and assesses the existing literature to identify current trends in Zimbabwe's private and public sectors. The review includes regional literature to enable comparing and contrasting of strategies and trends that other member countries of the Eastern and Southern Africa Regional Branch of the International Council on Archives (ESARBICA) have undertaken. The goal of this study is to investigate utilization of ECM applications, the nature of their implementation in both the public and private sectors, and the extent and appropriateness of existing infrastructure for Zimbabwe's public sector.

The purpose of this study is to promote and improve the tools and infrastructure for information sharing within government agencies so that they may become more efficient, accountable, transparent, and cost-effective, promote citizen participation, and enhance governance.

1.2 Working Parameters—Country-Specific Context

Zimbabwe exists in a complex historical, political, social, economic, and technological context. While many intricate factors influence the Zimbabwean records and information-management environment, this section discusses a few major events.

Like many Sub-Saharan African countries, Zimbabwe underwent colonization by the British, and 'the history of Zimbabwe was told many times from the white settler's perspective' (Chaterera and Mutsagondo, 2015, p. 2). Limited research exists on the colonial and long-term impact of British colonial administrations' registry systems before and after independence on April 18, 1980 (Lovering, 2010, p. 1). Contributing to the lack of understanding and research on current systems is the lack of consideration of past content and recordkeeping systems, and pervasive colonial impacts. Zimbabwe faces a high disparity between recordkeeping principles and practice, compounded by 'little motivation to question the integrity of the policy-making process' of the past systems and

the necessary changes crucial to merging and integrating with local and emerging systems (Lovering 2010, p. 21).

Zimbabwe's archival legislative and historical contexts are equally complex. As a result of its colonial legacy, Zimbabwe founded its National Archives through the Archives Act of 1935. After independence in 1980, the National Archives of Zimbabwe (NAZ) Act of 1986 was established in order to enforce more control of NAZ's operations over the records of local authorities, with a stronger emphasis on records management (Kamba 1994). While groundbreaking at the time of its creation, the NAZ Act of 1986 has yet to be amended and may pose a threat to the progress and development of information and records management today (Dube, 2011, p. 282). Dube (2011), Murambiwa et al. (2012), and Mutsagondo and Chaterera (2014) argue that the NAZ Act fails to address any nonconventional or digital information and should be 'updated taking into account the electronic environment, convergent technologies, the web environment, web portals and gateways, government online initiatives, transactions, e-business, knowledge management and information management' (Dube, 2011, p. 284). Until the Act is amended, NAZ cannot live up to its full potential in aiding the centralization and integration of practices for the management of digital information and records.

Until 2000, Zimbabwe made proactive strides in improving records management and archival endeavours. Strong social and economic growth characterized the period between 1980 and 1995 (Ruhode, 2013, p. 9). However, 'unresolved issues of land and other economic inequalities stemming from the colonial era increasingly resurfaced and heightened with the elections in 2000. These issues soon developed into a major crisis and put the country into a political and economic crisis which continued for the next decade. (Matangira, 2014, p. 12) described the impact as 'catastrophic' to archival services and government support in records management. Consequently, NAZ's ability to provide guidance diminished as government departments and regional records centres grew decentralized and largely dependent on themselves and circumstance to survive. The economy has presented extreme barriers in all areas of ECM and records-management development, including infrastructure, human resources, public health, research, educational systems, and technological development.

Like many other governments throughout the world undergoing pressure to improve public-service delivery, Zimbabwe had implemented e-government initiatives using ICTs

as early as 1999. Zimbabwe even maintains a ministry dedicated to ICT management (MICT) (Ruhode, 2013, p. 133). In 2006, the National ICT Policy Framework was developed to support a countrywide strategy for improving socioeconomic growth in Zimbabwe. In 2005, in conjunction with the National Economic Consultative Forum (NECF) and the United Nations Development Programme (UNDP), Zimbabwe commissioned a National e-Readiness Survey Report that found Zimbabwe held great potential for e-government through 'its wide area network and application systems such as SAP software, civil service payroll, national registration system, and pensions processing', but ultimately remained limited to an isolated and disjointed approach to government policy frameworks and uneven infrastructure across the country (Ruhode, 2013, p. 118).

1.3 Working Parameters—General Regional Comparative Context

Countries in the ESARBICA region face similar working parameters and regulatory context. The ESARBICA region consists of 12 countries: South Africa, Lesotho, Botswana, Namibia, Kenya, Malawi, Mozambique, Swaziland, Tanzania, Zambia, Zimbabwe, and Zanzibar. ESARBICA is a regional branch of the International Council of Archives (ICA) that aims to advance collaboration and cooperation within the Eastern and Southern Africa region. All countries have varying degrees of e-readiness, governmental and archival legislation, ICT policies, and historical contexts. African countries in the ESARBICA region use electronic records, but not without challenges. Some of the challenges include the 'non-availability of stable electronic media, which would be considered archival, capturing the content, context and structure of electronic records, acceptance of electronic as evidence, technological obsolescence and impermanence and acquisition of information technology skills' (Kemoni, 2009, p. 192).

Wato (2006) conducted a survey with responses received from Botswana, Mozambique, South Africa, Swaziland, Tanzania, Zambia, Zanzibar, and Zimbabwe. The survey was to determine the overall e-readiness of the region, but it highlighted some similar challenges and context across the board. In only four of the nine responding countries does archival legislation address electronic records. Eight respondents highlighted financial constraints as a major barrier, leading to other challenges such as human resources, training, public programming, outreach services, and infrastructure. While all countries' governments use ICT, seven out of the nine did not have a developed ICT policy (Wato 2006, p. 72).

2.   Definitions and Theory

2.1   Enterprise Content Management (ECM)

As stated earlier in this literature review, enterprise content management (ECM) and enterprise-wide systems can relate to the comprehensive overall strategies, tools, implementation, procedures, and abilities for management of all information assets in the form of structured and unstructured data or content. Unstructured data can take the form of conventional documents, web content, or audio, visual, born-digital, and digitized information held on shared drives, in email inboxes, and on individual computers. Structured data can take the form of information held in databases, and refers to taxonomized or classified data. But as Katuu (2012) notes, it is important to distinguish ECMs from other records-management initiatives.

ECMs differ from Electronic Records Management Systems (ERMS) and Electronic Document Management Systems (EDMS) in that ECMs are the overarching framework with which many components interact, thereby potentially encompassing an ERMS and EDMS (Katuu 2018). ECMs provide an overall framework by integrating multiple systems and procedures to encourage managing information during its entire life cycle and continuum, and therefore they depend on numerous factors and considerations. ECMs comprise ten fundamental components; however, not all the components are necessarily evident simultaneously. The components or modules include: Document Management, Records Management, Workflow or Business Process Management, Collaboration, Portal, Knowledge Management, Imaging, Digital Asset Management, Digital Rights Management, and Content Management (Katuu, 2012, p. 40). Thus, there is arguably a linear or evolutionary relationship between records management and ECM, with a tendency toward 'integrated systems oriented toward content management in the digital environment' (Katuu, 2016, p. 220). This means that the ECM framework goes further than records management and seeks to manage information content in all forms with an integrated approach.

2.2   ECM in the Records Life-Cycle and Continuum Model

The records life-cycle model 'characterizes the life span of a record as comprising eight sequential stages: creation or receipt; classification; maintenance and use; disposition through destruction or transfer to an archival institution or agency; description in archival finding aids; preservation; reference; and use'(InterPARES 2 Project, 2007b). The

records continuum model 'emphasizes overlapping characteristics of recordkeeping, evidence, transaction, and the identity of the creator' (InterPARES 2 Project, 2007a). ECM management precedes the creation of records and considers the management of information in the form of content that may be utilized to declare records and determine recordkeeping practices. ECM management contributes to all stages of the records life cycle and therefore influences the entire records continuum and, importantly, information infrastructure.

2.3   E-Government and E-Governance

E-government is 'the use by government agencies of information technologies (such as Wide Area Networks, the Internet, and mobile computing) that have the ability to transform relations with citizens, businesses, and other arms of government' (Donner and Kruk, 2009, p. 82). Mnjama and Wamukoya (2007, pp. 276–277) report that governments are increasingly using information and communication technologies (ICTs) to implement governmental activities and operations in the form of services, commerce, and management to increase citizen participation and democracy. While e-government relates to specific methods of communication in which government uses electronic technology, e-governance is the processes and procedures of decision-making about electronic records that account for other people with 'consensus, participatory engagement, following the "rule of law" . . . and accountability and transparency' (Masuku and Makwanise 2012, p. 187).

2.4   E-Readiness

E-readiness is the quantitative measurement of the ability of countries and institutions to adopt electronic 'recorded information, documents or data that provide evidence of policies, transactions and activities carried out in e-government and e-commerce environments' (Wato, 2006, p. 69). Wato (2006) conducted a survey to determine the levels of e-readiness in ESARBICA member countries, using the criteria 'policy and legislation, standardization, authenticity, preservation, training and physical infrastructure' (Wato 2006, 70).

2.5   Information Communication Technology (ICT)

Information and Communication Technologies (ICTs) are tools that many public-sector institutions and agencies utilize to further the external reach toward citizens and promote information sharing within internal administrations. ICTs are the use of any technology,

service, device, application, or software that enables the processes of communication or information sharing. Mhlanga (2006, p. 2) divides ICTs into three categories: Information Technology (the use of computers); Telecommunications Technology (the use of telephones, faxes, radio, television, and satellites); Networking Technologies (the Internet being the most prominent, mobile phone technology, and Voice Over Internet Protocol Telephony [VOIP]). ICTs may pose particularly complex challenges for ECMs and digital recordkeeping because ICTs generate information and records that have not necessarily been systematically captured, maintained, or used in the same way as conventional content (Ruhode, 2013).

ICTs are linked to e-governance because they are the tools used to improve the reach and efficiencies of government services and communication. ICTs are also linked with ECMs because they are defined as 'any product that will store, retrieve, manipulate, transmit of receive information electronically in a digital form (Ruhode, 2013, p. 19). ECMs are tools created to capture the information created through ICT usage.

2.6   Reliability and Authenticity

A record is information, in any form, made or received in the course of an activity. 'As it takes part in some action, it is seen as evidence of it . The value of such evidence, in terms of validity and weight, depends on the reliability of the record' (Duranti, 1995, p. 6). Reliability is then contingent on the *conditions* of the record's creation and procedures surrounding its creation, when it can be trusted to have been created under the circumstances under which it purports to have been created. While related, authenticity describes a different concept. 'A record is authentic when it is the document that it claims to be . . . it only warrants that the record does not result from any manipulation, substitution, or falsification occurring after the completion of its procedure of creation, and that it is therefore what it purports to be" (Duranti, 1995, pp. 7-8). Bhebhe (2015, p. 118) argues that while paper-based environments in Zimbabwe's public sector are maintained by the 'unbroken provenance of records', digital-based environments are still compromised and need to take into account the concepts of reliability and authenticity.

3.   Challenges

While conventional records management has been relatively well documented in Zimbabwe's public sector, study of digital records remains limited. The study of ECMs and ICTs continues to be even more incomplete, despite its implementation since as

early as 1999. In particular, *ECM* is a relatively new term, and many studies do not necessarily declare the term distinctly.

As explained in this review, Zimbabwe's public sector, which influences the current climate for the presence and development of ECMs, still faces many challenges. Ruhode (2013) notes that Zimbabwe continues to deal with economic instability that perpetuates infrastructure and regulatory deficiencies. Economic instability and large external debt burdens have had devastating effects on the development of legislation and policy, human resources, physical infrastructure, healthcare, and education and training, making further development and planning difficult. Existing and emerging political administrative systems, demographic and social factors, physical infrastructure, and economic development all factor into Zimbabwe's ECM implementations.

ECMs themselves are also a relatively new field of study, despite their presence for the last 15 years. This has contributed to difficulties in identifying exactly how and where ECMs are utilized in Zimbabwe. Katuu (2016, p. 220) notes that 'organizations are not optimally benefiting from ECM implementation partly because there is not enough guidance to practitioners regarding ECM implementation'. Furthermore, assessment of declared ECMs is problematic because 'ECM benefits are intangible and difficult to measure' (Katuu, 2016, p. 221). Those implementing ECMs do not necessarily have set guidelines or procedures to follow up on desired results or returns on costly investments.

E-government initiatives are also based on principles that assume government agencies are 'willing to cooperate and share information and data through a network infrastructure' (Ruhode, 2013, p. 41). Ruhode (2013) reports that there is a lack of research on information-sharing practices of government agencies in developing countries. In many respects, information sharing will raise complicated and practical issues, but the benefits of sharing information between ministries can aid in risk management, policy making, and statistical analysis. ECM implementation without guidance from the recordkeeping profession also poses issues, with administrators increasingly becoming their own recordkeepers and declarers.

Chaterera's thesis from 2013 notes that many public registries use electronic records, but are still burdened by technological obsolescence, inadequately trained personnel in electronic records management, absence of electronic records-management policies,

policies that exist without having been implemented, inappropriate equipment, and inadequate financial support (Chaterera, 2013, p. 88).

4. Findings

4.1 Trends in the public sector

Zimbabwe has a long and complicated history with many contributing factors playing into the current environment for digital content and records management. Ruhode (2013) reports that the Government of Zimbabwe has demonstrated awareness of computer technology for forty years (p. 12). In 1972, the Central Computing Services (CCS) and Computer Society of Rhodesia were established. Acting under the Ministry of Finance, the CCS mandate was to provide a central computer facility to all government departments and ministries. Ruhode's study is unclear about the extent or success of the initiative. Other public-sector organizations closely linked with the Ministry of Information and Computer Technology (MICT) are the Ministry of Transport, Communication and Infrastructural Development; the Postal and Telecommunications Regulatory Authority of Zimbabwe (PORTRAZ); the Ministry of Science and Technology Development (MSTD); the Ministry of Finance, Government Internet Service Provider (GISP); Government Telecommunications Agency (GTA); Zimbabwe Academic and Research Network (ZARNET); and Transmedia, amongst others (Ruhode, 2013, p. 12). However, it is also unclear from the literature whether these institutions utilize ECMs or would declare their content-management systems as such. A worthwhile endeavour would be to look more closely at these specific public-sector institutions to determine exactly what strategies, tools, and procedures are in use—in particular, at the Ministry of Tourism and Hospitality Industry, established in 2009 to focus on tourism development. In 1996, international tourism comprised 57.2% of commercial exports for Zimbabwe, one of the country's largest economic opportunities (Ruhode, 2013, p. 17).

In 2004, an e-readiness survey was conducted to determine Zimbabwe's ability to embrace ICTs. Mhlanga (2006) reported that the survey would provide research for implementing a national ICT policy and e-strategy. Mhlanga's critical study determined that there is a 'widening digital gap cause by a lack of ICT infrastructure, especially in the rural areas' (p. 2). The difficulty in identifying ICTs and ECMs in Zimbabwe arises from the fact that public-sector institutions and administrations do not have coordinated efforts and approaches to e-government, e-tourism, and e-commerce. While researching

the private sector, similar difficulties arise with the lack of applications explicitly deemed to be ECMs. However, during the 1990s, with expanded use of the Internet, Zimbabwe experienced massive growth in e-commerce in the private sector. Citizens are also increasingly using smartphones to engage in online activities instead of relying on land-based infrastructure.

Barata, Piers, and Serumaga (2001) surveyed the financial-management systems in Zimbabwe's public sector. Their findings show that although all transactions occur through the Central Payments Office, all other activities remain largely decentralized and based on pre-existing manual systems. A new centralized system called the Public Financial Management System (PFMS) was launched in 2001. The first phase of the project involved the introduction of the SAP 4.0B integrated financial-management system in Treasury Central Computing Services and the Ministry of Education, Sports, and Culture (Barata, Piers and Serumaga, 2001, p. 28). The PFMS is an electronic system used within government to process financial transactions (Nkala, Ngulube and Mangena 2012, p. 111). Alongside PFMS, the Zimbabwe Integrated Performance Management Solution (ZIPMAS) system was also implemented as an electronic system for the Zimbabwe government to share reporting, evaluations, processing of financial transactions, and staff appraisals (Nkala, Ngulube, and Mangena 2012).

Malemelo *et al.* (2013) identified unspecified document-management and electronic records-management software used by Marondera Municipality for financial records. The study however, found that the financial records were not properly managed due to a weak overall strategy and implementation. Malemo *et al.* (2013) recommended a stronger administrative link between the National Archives and the staff who manage financial records in public institutions (p. 21).

Nkala, Ngulube, and Mangena (2012) reveal that many public-sector institutions, such as the Central Vehicle Registry (CVR), Zimbabwe Revenue Authority (ZIMRA), and Zimbabwe Tourism Authority, are producing electronic records, but in an ad hoc manner. Nkala, Ngulube, and Mangena (2012) recommended that NAZ take a more active role in managing electronic records by advocating an ICT policy to stipulate the way in which records should be created and maintained before transfer to the archives.

4.2 Trends in the private sector

David, Ngulube, and Dube (2013) studied a commercial financial institution in Zimbabwe and identified one ECM module—document management. It was found that the institution has two departments, the Software Library Department and the Securities, Safe Custody and Archives Department. The departments both manage electronic and conventional documents and records. The financial institution utilized an unspecified database management system (DMS) for the bank's customer applications, reports, client transactional receipts, and ledger registers, in a variety of formats. Some of the difficulties the study identified were that their information was not legally admissible as evidence; preservation standards were unclear; it was difficult to determine authenticity; electronic mediums proved unstable and able to be manipulated; technical skill for support was expensive to employ, contract or hire; and technology dependence triggered obsolescence (David, Ngulube and Dube, 2013, p. 6).

Dube, Mukono, and David (2013) investigated the private commercial records centre (CRC) in Zimbabwe, specifically Archive-It Services® (AIS). AIS was incorporated in 2002, during Zimbabwe's economic crisis, but managed to thrive economically by providing record storage and management facilities to corporations. Their services include offsite storage, authorized and secure destruction of information, vital-records protection, online backups, security encryption, access, and an ECM system. AIS offers 'online content management systems that can manage (the) entire enterprise's records or create a digital archives for just a particular group of records' (Dube, Mukono, and David 2013, 109).

4.3 Emerging Regional Trends

According to the UN's worldwide e-government Readiness Reports of 2005 and 2008, African countries increasingly implement E-government initiatives using ICT-based systems in order to improve public-service delivery (Ruhode, 2013, p. 34). South Africa launched the South African Revenue Service (SARS) in 2006. Lesotho's Ministry of Finance launched a website allowing citizens to create accounts, download financial statistics, and retrieve information.

However, Wato (2006) reported that electronic records in the ESARBICA region had many shortfalls with regard to legislation, policy, standardization, training, and physical infrastructure. Increasingly, information professionals in ESARBICA countries are

advocating for amendments to archival legislation, allowing National Archives across the region to gain more control over acting as guiders and policy-makers (Kemoni, 2009, p. 193). Records managers and archivists fear that the quick embrace of ICTs without attention to readability and long-term goals will 'plunge Africa into the "digital dark ages"' (Ngulube, 2004). Lemieux (2015) argues that the quick adoption of ICT may even have detrimental results for government transparency and accountability, due to the lack of guidance by record and archival professionals. Keakopa (2002) called for increased standardization and tools to enable ESARBICA countries to collaborate on the formalization of content and recordkeeping practices—none of which can occur without a formal amendment to archival legislation to include electronic records.

The first regional study on ECM implementation was in South Africa in 2001. Salamntu and Seymour (2015, p. 32) reported that 'staff surveyed were not highly qualified or skilled even though ECM was operational and easily accessible. In South Africa, 80% of respondents to the survey had implemented three ECM modules: records management, web management and content management' (Katuu, 2012, p. 51).

5. Conclusion

The findings show that some ECM modules may exist in Zimbabwe's public-sector institutions—in particular, the ECM components for document management and records management. However, they may appear under different headings and still largely remain limited in the literature. Numerous institutions (especially public-sector institutions) such as museums and medical institutions still rely on manual systems, and many choose to ignore electronic mediums altogether due to financial constraints.

There were many difficulties identifying ECMs due to multiple definitions, as it is a relatively new field of study. Even if ECMs were prevalent in the public sector in Zimbabwe, they would not necessarily be declared or named outright. Nonetheless, the review has pinpointed public-sector institutions that potentially could implement ECM modules: the Ministry of Transport, Communication and Infrastructural Development, the Postal and Telecommunications Regulatory Authority of Zimbabwe (PORTRAZ), the Ministry of Science and Technology Development (MSTD), the Ministry of Finance, Government Internet Service Provider (GISP), Government Telecommunications Agency (GTA), Zimbabwe Academic and Research Network (ZARNET), and Transmedia, as well as the Ministry of Finance's PFMS and ZIPMAS programmes.

Lack of ICT policy and archival-legislation amendments limited human resources, sporadic education and training, economic instability, and a lack of guidance from the archival community greatly hamper these initiatives.

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