

INFORMATION AND COMMUNICATION TECHNOLOGY ADOPTION IN RECORDS AND ARCHIVES MANAGEMENT IN THE INFORMATION AGE

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Abstract

The paper examined information and communication technology (ICT) adoption and application in records and archives management particularly in the information age. The methodology adopted for this paper is the interpretive content analysis of document where secondary sources related to ICTs and records management practices are explored. Relevant documents on electronic records management and electronic record keeping system are also considered. The findings from the literature reviewed showed that there are two major causes associated with the challenges of handling records keeping system which are natural and manmade; the functionality requirement for records management processes and control were also identified; the importance of electronic record keeping and management in the information age include greater efficiency, lower records storage cost, reduced potential for litigation and penalties, improved customer service, greater transparency among others; also identified are the challenges of ERM and ERK in managing orgaanizations' records such as fragility of the media, ease of manipulation and absence of self-evident and ready contextual information. The paper recommended that hardware and software of ERKs be installed at proper locations that digital media should be accommodated in a safe environment and migration of records should be conducted through successive hardware/software upgrade to retain the content and context, among others.

Keywords: ICTs, Records, Archive management, Information Age

Introduction

Records and archival resources keeping institutions exist for the provision and satisfaction of the numerous information needs of various users. Within governments, business or organizations, the archival institution is the vital administrative agency responsible for the permanent preservation of records of enduring value.

Archival institution is a place where information materials/documents of historical values are collected, organized and managed for consultation and research purposes.



Records of enduring value are kept from the creation or receipt of a record through its useful life to its final disposal.

Cook (1999) defines managing archive as a procedure manual for managing records after they have been transferred from the records Centre to the archival institution for permanent preservation. As observed by Ira (2004) it is believed that without management of records, many institutions will lose their memories because records act as a document that memorizes and provides objective evidence of activities performed, events that occurred, results achieved, or statements made. Hence, the sum of these activities will enhance organization development. In the light of this, without adoption of information and communication technology, effective records management will be cumbersome for any organization to develop effectively. The National Archives of Australia cited in Ngoepe and Ngulube (2016) discusses four models of records management practices in relation to geographical location and controls includes tools. These the centralized. decentralized. devolved and combination Thus. models. where proper record management are in place, records can assist organizations with provision of reliable information and thereby support the line function.

Effective records management in an organization ensures the availability of records for future assessment in order to determine whether the recommended risk mitigation has been followed by relevant business process. Also, the strength and effectiveness of a record keeping system mainly depend on the effectiveness of risk management that prioritizes and identifies risks across an organization (Ngoepe, 2014). Hence, the paper reviews information and communication technologies adoption on records and archives management in information age.

Overview of Records Management

An organization receives and processes tremendous amount of information day in day out but not all of them are records. A record is invariably linked to an organization's official business and maintained as evidence. Accordingly, 'records' can be described as any recorded information or data in any physical format or media created or received by an organization during its course of official business and kept as evidence of policies, decision, procedures, functions, activities and transactions. For instance, a driving license application will be kept as a record by the Transport Department of the Government as evidence of its business. Thus, in order to serve as evidence, a record should be complete and must possess the following three elements:

- i. Content –this refers to the information or ideas the record contains.
- ii. Context –this refers to the information about the circumstances in which the record is created, transmitted, maintained and used (e.g. who created it, when, to whom it was sent, why).
- iii. Structure –this means the physical and logical format of the record, and the way parts of the record relate to each other (e.g. the structure of an e-mail record covers its header, body, attachments and corresponding reply) (Odutola, 2019).

National Archive of Australia (2017) stipulates that records management is the act of making and maintaining complete, accurate and reliable evidence of business transactions form of recorded information. in the Traditionally, record management has been in existence before the advent of computer and Internet. International Records Management (2015) confirms that records management was done manually in terms of acquirement, handing out, storage and dissemination of information from creation up to the stage of archiving. Also, Mulauzi et al. as cited in Mulauzi (2019) observed that traditional



records management practices are based on the concept of the records life cycle. The record life cycle concept has three (3) biological ages which are considered as the equivalent of the 3 phases of the life of records which are: active phase (creation, distribution and use), semi-active phase (maintenance and storage), and non-active phase (disposition). The life of a record begins at active phase when they are conceived. At this stage they are current files and are kept in the offices which created them. Two major actors are involved at conception and creation of a record: the person (s) who composed and drafted the record (letter, report memorandum, etc.) and the person (s) who produced the typist, etc.). The production of multiple copies required extra effort and time on the carbon copying, stenciling, etc.). All these processes was produced in only one format.

Mulauzi (2019) further stresses that a record is created for a purpose in an organization to

support an activity taking place in the organization. Thus, after conception and creation, a record is used to support the activities of the organization. On the other hand, semi-active storage involves the transfer, maintenance and storage of records that is frequently used. After the record has ceased to be actively used, it is semi-active record. Such records are transferred to low centres to save expensive office space and equipment, and to prevent the pre-mature destruction of records before their disposal date.

In essence, records go through the stages of life that human beings also go through. They are born (created or received), retired (transferred) and died (disposed). Below is the diagram of life cycle of a record:



Source: Afolabi, 1991; University Press P. 1-4, Zaria.

The records management processes in different stages of records life cycle include:

- (i) Record capture
- (ii) Registration
- (iii) Records classification
- (iv) Records storage
- (v) Access
- (vi) Tracking
- (vii) Records disposal.

There are two major causes of challenges in handling record keeping systems which include: natural and manmade causes

Under the Natural Causes:

Environment/Weather: that is climatic change during raining season may cause moisture, humid or humidity, earthquake, etc. for the document, in the same vein, moisture may be manmade if the roof is leaking. The storage facility and environment is very critical to the longevity of archival document (Odutola, 2019).

Under the Manmade Causes, we have the followings:

-Heat –this is great enemy of archival materials when the heat is too much the materials become brittle where there is not enough ventilation or air.

-Termite –this is another enemy, insects, cockroaches, rodents, and etcetera.

-Flood –this is a serious problem. For instance, siting archival building in a flooded area. Flooding is man's inability to build well or building on water ways.

-Fire Outbreak-that is not intended such as electric appliances. Plumbing error, setting building ablaze by miscreants or bandits, etc.

Another serious challenge is the loss of document. According to International Records Management Trust (IRMT) (2015) one of the challenges faced in the manual systems is loss of records and a lot of misplacement of information material. The study conducted by Garland (2019) outlined five (5) major problems experienced in records management with paper records which include the following: too much paper; inability to find the information needed when you need them; lack of storage and working space; loss of track of files; and poor condition of records. For instance, documents got missing regularly and in some cases misfiled or even lost forever. A good example was given in a study carried out by Hamel and Gomez (2011) that records can get out of order in traditional filing systems if someone accidentally puts a file in the wrong place, or takes a file out of a cabinet and forgets to put it back, that this can lead to loss of files or the creation of additional copies of files. In the pension industry for instance, misplacement or loss of records including the slow speed at which needed records are retrieved from their storage results in beneficiaries not being given feedback on time about their benefits. Some Pensioners end up being depressed while others pass without getting their benefits and survivors at times do not know how to go about claiming their benefits. Thus, benefits ended up in wrong hands because people often capitalized on the system (Mulauzi, Hamooya and Munsaiye-Mwale, 2015).

Use of Electronics in Records Management as a Solution to Drive ERM

Electronic Records Management (ERM) is a computer program or set of programmes designed to track and store records. The software can be used to manage the creation and maintenance of records within classification schemes, apply retention and disposal schedules, and control access and use. ERM ensures the organization has the records it needs when they are needed. ERMs are used in archival institutions and other information department in any institution ((Cook, 1993).

Electronic Records Management (ERM) has been widely adopted and promoted in the public sectors of regions/countries such as Australia, Canada, New Zealand, the European Union and the United States of America. Based on the ERM implementation



experience of countries/regions mentioned above, Electronic Records keeping system (ERKs) which is designed and developed in accordance with well-established records management principles and practices and is able to support efficient business operations of an organization, is commonly adopted as a solution to drive ERM in office setting (Upward, 2002).

definition, **ERKs** By is an information/computer system with the necessary records management capabilities designed to electronically collect, organize, classify and control the creation, storage, retrieval. distribution, maintenance. preservation, use and disposal of records throughout the life cycle of records. It aims to manage records with the desired levels of confidence and integrity by combining both advantages of electronic ways of working with well-established records management principles (BS DISC PD 0024: 2001).

According to Help Net Security (2019) organization round the world are making significant investments in information technologies and services that enable the digital transformation of their records management systems and services. In the light of this, organization and governments have turned to information technologies as a "Solution" to their potential to address key records management problems such as communication barriers, storage constraints and time constraints to retrieve the records. In view of this, Flavia-Blanco (2011) cited in Mulauzi (2019) assert that multitasking is one of the major advantages of information technologies as they can solve many record management problems within few seconds. For example, a record initiator can create, use, distribute, store, and retrieve a record on a single computer work-station, thereby eliminating the huge number of secretarial and record keeping staff and the associated requisite records management space, equipment and stationery. Technologies also offer opportunities for compact storage through electronic and digital storage devices and information can be stored on a number of sources such as flash drives and Google drive. Space issue and equipment is not a problem.

The functional requirements of ERKs tips according to Cook (1999), will give the system the functionality to carry out and support the following records management processes and control, they are:

- i. Record capture (to determine whether a record should be made and kept and to establish a relationship between the record creator and the business context that originated it).
- ii. Registration (to provide evidence that records have been created or captured in a record keeping system).
- iii. Classification (to link records with the business context under which they were created/received).
- iv. Access and security classification (to assign rights or restrictions to access records).
- Setting of v. retention and disposal arrangements (to assign records retention and disposal schedules to ensure that records are kept for as long as they are required for organization's business needs and they duly disposed of to meet legislative requirements such as those of the Personal Data (Privacy Ordinance) and to reduce storage and management costs).
- vi. Storage (to determine the efficient and effective means of maintaining, handling and storing records).
- vii. Use and tracking (to manage the use and track movement of records to prevent loss, detect unauthorized use and ensure ready use when required.
- viii. Implementation of disposal (to execute disposal of records, including



destruction, transfer of custody or ownership of records).

Implementation Issues of ERMs and ERKs

With regards to the experience of overseas jurisdictions in implementing Electronic records keeping systems, ERM is not just to have a proper ERKs in place though it is an essential component. The successful implementation of ERM and ERKs in an organization also depends on the following critical success factor according to Michael, Cook (1993), they include:

- a. Formulate ERM policy and strategies and integrate them as part of corporate records management programme and define clearly roles and responsibilities of staff on managing records;
- b. Foster a corporate culture of taking responsibilities on records management among all staff members and adopt electronic means to manage records.
- c. Analyze business processes before incorporating ERM processes into business operations;
- d. Provide training and support to ensure compliance with the corporate records management policy and requirements;
- e. Develop practices and guidelines in managing electronic records to guide staff members.

Importance of ERM and ERKs in Information Age

The importance of electronic records management cannot be overemphasized because of its various benefits to the organizations and the society at large. Municipal Research and Services Centre MRSC (2019) highlighted the following opportunities that can be achieved in this information age. These include:

Greater efficiency: Electronic records management systems can dramatically improve efficiency by enabling speed and reliability that is impossible with manual processes. Lower Staff Costs: Increased efficiency in records searching, retrieval, redaction, and disposition tasks translate into reduced staff time requirements and lower staff related costs.

Lower Records Storage Costs: replacing paper records with digital records reduces the need for on and off-site records storage space and associated costs.

Reduced Potential for Litigation and penalties: Speedier, more comprehensive and accurate responses to public records requests can help to reduce exposure to potentiality expensive litigation costs and penalties.

Improved Customer Service: Efficiency improvements make it easier and faster to retrieve information and records, which reduces wait times and improves customer service.

Greater Transparency: Public facing web portals where available, makes it easier for citizens to access transparency and trust.

Improved regulatory compliance: Compliance with retention schedules can be automated so that incoming documents can be easily classified, stored, and scheduled for eventual disposition in accordance with relevant state or organizational records regulations.

Benefits of Cloud-Based Solutions: Many records management vendors offer their solutions via the cloud, accessible through an Internet browser. There are several benefits of cloud deployment, including faster implementation, more secured documents backup and recovery, reduced costs, less impact on IT staff, and easier software updates and security patches.

Enhanced records security: records with sensitive information can be protected and restricted to those who are authorized to have access.

Better backup and disaster recovery: Conversion of paper records to digital formats



reduces the risk of loss due to physical deterioration or damage due to environmental factors and accidents.

Cloud-based storage provides more secured document backup and recovery

Many countries now require a data retention strategy as part of a large compliance effort. This is to prevent the selective destruction of important records, e-mails or other data that may need to be reviewed in an investigation or patient data in a medical setting. Using the right ERM solution makes it easy to comply with local and federal laws while providing easy accesses to this data.

Good for business, good for the planet

Electronic records management does not make things easier on record keepers. Wacker of America Records Management Authority (n.d) asserts that a shift to ERM can also reduce paper, fuel and energy costs for a business and to the planet. This is a double win that saves business costs along with environmental waste.

Ensure an audit trail

ERM best practices demand unique identifiers for all records entered into your system. This allows all records to be fully traceable during data pulls, audits and investigations.

Reduced time

By ensuring records are available when needed, because it can save valuable labour and processing time formerly spent digging through old files or searching disks. This is a fantastic cost-saving action for any business.

Version control:

Everyone in your organization accesses the most recent version of a file with the ability to see previous versions.

More Security

Your organization's ability to store, secure or confidential records, increases with ERM by allowing folder and file level permissions along with tracking data about who accesses what, and when.

Records are more shareable

Everyone in your organization can access the same sets of records with the same unique identifiers. This prevents redundancies and saves time during cross-departmental work.

Records management programs are much more operational in scope, and are often a mechanism for achieving some of the goal defined during the planning (Russell, n.d.).

Managing your e-records is just the beginning. Collecting and ensuring accuracy of your data is a huge step, but now it's time for advanced search, archiving, risk assessment, and more.

Challenges of ERM and ERKs

Development of ICTs and the widespread use of networked computers to conduct business have resulted in exponential growth of records being created digitally. More and more records relating to decision-making and programme delivery are created and kept in electronic forms e.g. e-mails, spreadsheets and video recording.

However, electronic records have a vulnerable nature and present unique challenges in managing an organization's records because of the following:

- i. The fragility of the media (e.g. magnetic tapes, optical disc and USB drives) upon which they are recorded,
- ii. The dependency on technology to allow access and use of electronic records which cannot be read directly without the aid of computer software and hardware;
- iii. The ease of manipulation (i.e. updated, deleted, altered intentionally or inadvertently) without being discovered,
- iv. The absence of self-evident and ready contextual information (e.g. who created it, when, to whom was it sent, why) to enable that the records are understandable and useable over time.



Conclusion and Recommendations

From the foregoing, it is important to note that strong record management regime should be every organization's primary focus. Thus. Record management should be integrated with record keeping and must be seen and approached as a risk management function by every organization. Therefore, the paper has attempted to explain how ICT adoption or application to records and archives management system may be a long lasting solution to some of the challenges often encountered in organizations. In line with the International Records Management best practice, the study recommended the following measures regarding storage of electronic records in an electronic records keeping systems:

- 1. The hardware and software of ERKs should be installed at a proper location. E.g. server room meeting industry standards and other related requirements.
- 2. Digital media e.g. optical disk and tape storing electronic records should be accommodated in a safe environment with suitable climate control under regular monitoring;

- 3. A programme should be set up to monitor and refresh the digital media regularly e.g. transferring the records to a new optical disc, having regard to the life span of the media to ensure the accessibility and usability of records over time.
- 4. A programme should be set up to backup records and the associated metadata and audit trails regularly to prevent their loss or damage;
- 5. Migration of records, the associated metadata and audit trails should be conducted through successive hardware/software upgrades to retain the content, context and structure of records for their preservation and access over time.
- 6. Proper documentation should be maintained on the storage arrangements.



References

- Afolabi, M. (1991). Introduction to Archives and Records Management. Zaria: University Press.
- BS DISC PD 0024:(2001) Archival documents. Guide to the interpretation of BS 5454: 2000, storage and exhibition of archival documents, British Standards Institute, 2001.
- Cook, M. (1993). *Information management and archival data*. London: Library Association Publishing.
- Cook, M. & International Records Management Trust (1999) Managing Archives: A Procedures Manual.
- Hamel, W.W. & Gomez, M. (2011). Records and information management and retention. Available at <u>https://www.venable.com/-</u> /media/files/events/2011/06/managingelecronic-records-and-information-bestp/files/records-and-informationmanagemrnt-and-retention. (Accessed on 2nd March, 2023).
- Help Net Security (2019). What the education industry must do to protect itself from cyber attacks. Available at <u>https://managedmethods.com</u>. (Accessed on 7th March, 2023)

http://www.archives.gov/recordsmgmt/faqs/scheduling.html.

https://preserve.harvard.edu/guidelines/reform attingprinciples.html.

- Ira, A.P. (2004). *Records Management Handbook Field*. Olsbury, United Kingdom: Gower Publishing Company.
- Katuu, S. (20i5). The Development of Archives and Records Management Education and Training in Africa – Challenges and Opportunities. Archives and Manuscripts, 43(2), 1-24

- Mulauzi,F.; Hamooya, C. &Munsanye Mwale, V. (2015). Records Management Practices in the Zambian Pension Industry. *ASARBICA Journal*. 34:35-44.
- Mulauzi, F. (2019). Application of Information and Communication Technologies (ICTs) in Records Management. *Library and Information Association of Zambia Journal* (LIAZJ). 5 (1&2), 41-54.
- Municipal, Research and Services Centre (MRSC) (2019). PRA and Records Management: Technology Guide. Available at: <u>http://mrsc.org/getmedia/52d4dabe-</u> <u>1632-4314-8467-dbaab50cc54/PRA-</u> <u>Tech-Guide-pdf.aspx7ext=pdf</u> (Accessed on 26th November, 2022).
- National Archive of Australia (2017). Record keeping Glossary <u>http://www.nna.gov.au/recordkeeping/rk</u> <u>pubs/recordskeep-glossary.html on</u> <u>17/11/2022</u>.
- Ngoepe, M. (2014). The role of record management as a tool to identify risk in the public sector in South Africa. SA Journal of Information Management. Available at <u>https://www.researchgate.net/publication</u> /271302831 (Accessed on 3rd March, 2023).
- Ngoepe, M. & Ngulube, P. (2016). A framework to embed records management into the auditing process in the public sector in South Africa.. *Information Document*, 32(4), 135-150.
- Odutola, G.O. (2019). Introduction to Records and Archives Management for Library and Information Science Students. Edcom Publishers, Lokoja.