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Pivotal role of Information Communication Technology in Record and Archive Management

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ABSTRACT

Record keeping is an ancient art that has survived in human activities for millennia, becoming ingrained in their everyday routines. Records that are well-maintained are an important element of an individual's or organization's memory. Many of the records are saved as event logs, transaction logs, and decision logs. The significance of preserving records, particularly when it comes to archiving them is largely concerned with managing the evidence of an organisation's actions as well as the reduction or mitigation of risk connected with it, and is part of an organisation's wider role of governance, risk management, and compliance (Tarantino, 2008).

Records and archive management is a process that is unique to each individual and corporate entity though it may not be entirely evident in its formality. It is committed to the management of information throughout its life cycle that is from creation to final disposition or archive. The procedure includes identifying, classifying, storing, protecting, retrieving, tracking, and deleting or permanently preserving records. It is clear that change, which is thought to be constant, has found its way into conventional methods of record and archive management by incorporating Information and Communication Technology (ICT) into the system, with the result being a tremendous effect for future generations to study and enjoy. Therefore, this paper set to discuss the "The Pivotal Role of Information Communication Technology (ICT) in Record and Archive Management." The topic is presented in segments for well detailed write-up and better understanding. Sub-topics or segments of the topic were discussed in the following.

KEYWORDS: Record, Archive, Record and Archive Management (RAM), Information Communication Technology (ICT).

INTRODUCTION

Change is a constant in the human race, and concrete memories keep us going. Without an account that validates previous practice, continuity and progress are impossible to achieve. Many people have lost sight of the changes that need to be made since there is nothing in place to assist them relate and connect to what has previously been done in order to know what to do now. The link between the past, present, and future is rooted in what the past can maintain as proof of practice or activity, and how the present may use that evidence to better and keep track of what they are doing for future continuation. Humans are not far from the past because we have access to the narrative of what happened; we were not there in the past, yet we are as near as ever since evidence to relate to, was saved and made accessible.

The term "Record" is central to the above puzzle's premise. The record serves as the ties that bind the past and present together in order to better the future. Individuals, organizations, and a variety of other entities are a reflection of previous practice since a record of this response was maintained. According to Mulauzi, Wamundila, and Hamooya (2013), it is impossible to achieve progress without records and archives. The authors stated unequivocally that "only by looking at the past can we comprehend the current and prepare for future growth." Efficiency, openness, accountability, and good governance are all values they promote. Records chronicle are important to government decisions and actions including basic rights and duties.

Nature of Record

A record is any document (paper or electronic) that allows organisations or workers to carry out their activities (businesses). This means it's a document written(created) intentionally or received with the aim of proving or justifying a certain occurrence or event in the present or future thus allowing for continuity. It may also be seen as a proxy for an occurrence, transaction, event, or a variety of other things, in order to link persons to what was done using date, day, year, and personality, content, and so on as a reference focus. Correspondence, forms, reports, committee minutes, memos, policy statements, and budgets are just a few examples of records. In a clear tone, a record is a document that is kept consciously as evidence of an action.

The definition of a record by the National Archives of the United Kingdom is being used to support the above statement on record. Which state that, record is a specific piece of information created or received that has sufficient content, structure, and context to serve as evidence of an

action and to assist informed decision-making. It has three features: content (what the record says); structure (how the content looks and is organised, such as styles, fonts, page and para breaks, links, graphs, and language); and context (how the record is organised i.e. background information which enhances understanding of the technical and business environments to which the records relate e.g. software, business activity, creating agency, programme).

With the advent of ICT, other forms of records which are not paper based such as sound recordings (disks, or audio tapes, cassettes) (audio-visual records); video recordings (video tapes, CDs (audio-visual records); electronic text or images (e-mail, webpages, web-based records and publications, online databases; and three-dimensional models, scientific specimens, or other objects; or a combination of these (multimedia) are now available. Individuals and organisations create records for future reference. While majority of these records are discarded swiftly; some are kept for extended periods of time – establishing personal or organisational archives. These records are valuable to the individuals or organisations that created them either in short term or long term. Notably, organisations keep records for specific reasons, the can range from organisation's progress to individual's advancement. Administrative, fiscal, legal, and historical are the four major values of records. Interestingly, a record might have more than one of these values at any given moment. Records of such value are seldom discarded since they may be referred to at any time. As a result, such permanent records are considered as archives and are frequently moved to an Archive for appropriate preservation.

Nature of Archive

The continual existence of records is defined by archives. Because those records, while not being referred to at the time, are a reflection or surrogate of the organisations or individuals that must be preserve for future use. As a result, archives are introduced to take over responsibility for records that have ended their usage at the moment but continue to sustain the life of the entity. Some experts, such as Kimberly, Coleman, and Buck, claimed that archives are records created or acquired and gathered by a person or organisation in the course of business or activities and kept because of their short or long-term value.

Some Dutch archivists, characterised archives as "officially received or created" written papers, drawings, and printed matters created, at least in part, by an administrative body or one of its officers provided as these records were meant to be kept in the custody of that organisation or

authority. Archives are variously defined on the National Archives Building in Washington as "The Records of our National Life"; "The Heritage of the Past"; and "The Chronicles of Those Who Conceived and Built the Structure of our Nation"- all of which sum up to create a distinction between a record and an archive which states "not all records are qualified to form archives but all archives are records because of its permanent values.

Historians, genealogists, educationalists, students, and others are among the direct users of archives. These direct users act as a conduit for indirect users who read newspaper stories, reports, and history books in their larger communities. Archivists must bridge the gap between archives and users more successfully than they have in the past to enable better retrieval, and provide for more effective continued usage. By tying the query to information in guides and finding aids about organisations or persons who were involved in activities that might have created relevant records; the archivist bridges the gap between users and the archives.

RECORD AND ARCHIVE MANAGEMENT (RAM)

Records and archives may be easily created by anyone or organisation, but the quality of a record is determined not only by its creation alone, but also by its accessibility and use as needed. After all, what good is a record that is not easily accessible for use when it is needed? As a result, it is not sufficient to just create or receive records or archives - a good management plan for the records created or received is also required that must allow for easy retrieval and usage in the future.

Management is an action-oriented practice or strategy that allows an individual or organization to plan, coordinate, organise, make decisions, and control their resources in order to achieve a stated objective while maintaining consistency and continuity in operations. As a result, record and archive management is crucial since it establishes the actual practice of preserving records and archiving documents. Separating management from records and archives is equivalent to stating that records and archives will not survive to see the future, which is impossible because creating records is one thing and keeping them is quite another. As a result, a record must have been properly managed in order to qualify as an archive. This demonstrates that record and archive management have a long history with man prior to the official establishment of memory institutions such as archives, museums, and libraries.

Records and archive management (RAM) is the practice of managing or tracking the life cycle of records in a systematic, structured, planned, and controlled manner. RAM is a dynamic approach to a piece of information's type and content with the goal of determining its current and future interest and value for an entity, as well as the reasons for that interest and value, which can include normative, legal, substantive, and historical considerations. RAM includes categorising and storing valuable information, in whatever form it takes, according to the criterion of worth, dividing it into "records" and "archives" portions. The phases of record creation or receipt, maintenance and usage, and disposal are all interrelated and interdependent. The following diagram shows the phases of records life cycle.
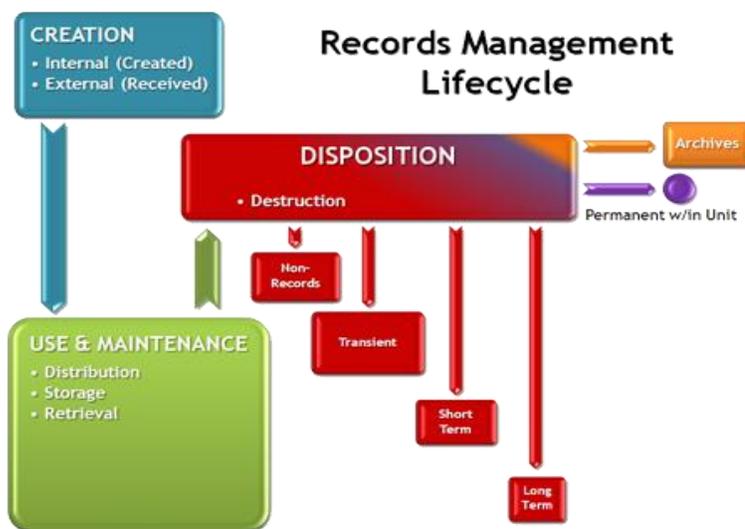
Phases of the record lifespan

IMPORTANT OF RECORD AND ARCHIVE MANAGEMENT (RAM)

According to IBM, 90 percent of the world's information was created in just two years. The administration of huge amounts of data becomes almost impossible withoutfrequent monitoring of your data.Aside from information overload, the constantly changing regulatory environment is another reason why records management is critical for businesses and individuals. Non-compliance with records management practices and retention regulations may lead to needless audits, lost productivity, and costly penalties.

A thorough RAM practice keeps individuals and organisations in compliance with information protection requirements for Information Governance (IG) by managing the

development of information across different repositories. Below is the other general importance of Record and Archive management practice:

- Reduces the number of records and the cost of storing them
- Effective record retrieval
- Enables regulatory compliance, business continuity,
- Workflow automation
- Keep Important Information Safe
- Save money and time, as well helps in keeping track of one's business growth.

LIMITATION OF RECORD AND ARCHIVE MANAGEMENT AS A PRACTICE

Records management, according to Zawiyah Mohammad (2008), is a dual function field that includes both a profession and an academic discipline. Records management as a profession is well-established, while the latter is still in its infancy. The developed countries, notably the United States and the United Kingdom, gave birth to records management as a profession and academic field. When records management is recognised to have a clear link to accountability and transparency, improve the quality of public service delivery, and assist organisations in obtaining quality certification more readily, more organisations, not just in developed nations start to implement the program. Though it has been recognised as a profession, many people are ignorant of its significance, and as an academic field, there are certain misunderstandings as this discipline advances from practice to theory.

The limitation of record and archive management practice stems from the aforementioned bi-function of RAM, which justifies the lack of policy, official initiation into organisations, approach, appropriate viewpoint, rules and enforcement, and training/education (Zawiyah Mohammad, 2008).

Information is becoming increasingly important. Individuals and organizations may be at danger of making decisions based on incomplete information. This demonstrates that information requires investment, particularly in the form of competent and trained people to manage, as well as sufficient and suitable resources to assure the safety and security of the recorded information. Furthermore, information requires effective management, appropriate equipment, and a suitable

environment to ensure long-term viability. This is especially true in an environment that is changing and responsive to advancements in ICT. It is critical that in managing records and archives in such an influenced environment, organisations and individuals practicing RAM in their various capacities must be ICT compliance.

ROLE OF ICT IN RECORD AND ARCHIVE MANAGEMENT

Information and communication technology is an inescapable force of change that has increased the efficiency of a variety of operations across the board. There are undoubtedly methods through which operations were carried out in the past, and the commencement of records and archives were no exception. Men thought there was a need to preserve knowledge, so clay tablets, papyrus, parchment, and finally paper were created as mediums to which this knowledge could be preserved, all for the purpose of capturing men's activities and practices on paper for preservation and posterity, and most of these records were archived because of the values attached to them. However, all of the processes involved in creating and managing these records were time-consuming, storage space and vulnerable to attack, as was the case with most early libraries. However, with ICT, the limitations and challenges inherent in the practice of RAM can be easily avoided, thereby promoting improvement in all areas.

In its most basic form, information and communication technology (ICT) may be defined as an electronic medium for producing, storing, modifying, receiving, and transferring information from one place to another. It facilitates communication transmission by making it more comfortable, accessible, understandable, and interpretable. Cell phones, the Internet, wireless networks, computers, radios, televisions, satellites, base stations, and other devices are used. Information is created, stored, communicated, transmitted, and managed using these resources. With the above description of ICT, it is clear that RAM practice is covered in its complete package of functions, making it a solution to improve record and archive management practices because of its ingenious approach to how information might be created, stored, changed, received, and transmitted in real time, independent of location. One may also look at ICT from the perspective of RAM practice, which is the use of technological tools like email, phone, internet, television, computers, and cloud storage, among others, in the creation (receiving), usage, maintenance, transfer, and disposal of recorded information.

ICT IN RAM: A PAIN OR GAIN?

Any human activity practice could not have been any better if it had not been for ICT, despite the fact that most of these practices precede ICT. However, it is what ICT brought into the system that bridged the gap and crowned ICT as pivotal to all forms of activities of which record and archive management are not exception.Electronic information has increasingly become a key resource in every area of human activity in recent years as a result of the effect of ICT, necessitating the strengthening of the whole record management lifecycle (Shuling, 2007). As a result, it is critical to recognise the pivotal role of information technology in records and archive management. The ease with which individuals may communicate by email, phone, internet, and text messaging facilitates better service delivery. Furthermore, relying on ICT minimises surface-level disparities between members, which lead to the creation of in-groups and favoritism within them (Malhotra and Majchrzak, 2014).

With the usage of your electronic gadget and relevant software's on the gadget, one may create evidentiary information at any time, regardless of your location. Individuals who need information now has rapid and easy access to information/records in order to make timely decisions. Employees in organisations gather, manage, assure improved records monitoring and dissemination, and report performance in order to help businesses function smoothly. This is comparable to (Reed and Bernhard, 2012), who claimed that sharing on mobile phones is the most effective way for poor nations to distribute information. According to Krubu and Osawaru (2011), ICT provides a chance for any information service focused business to deliver value-added information services and access to a broad variety of digitally based information resources to its consumers. Furthermore, these organizations are using modern ICTs to automate core functions, create efficient and effective collaboration and resource sharing networks, implement management information systems, develop institutional repositories of digital local content and digital oriented services, and launch ICT-based capacity building programmes.

ICT has a significant role in poverty alleviation by facilitating the creation and dissemination of records. It is important to emphasize that ICT independently, without being aligned with other development goals and activities, and without integrating the rural poor, would not be able to provide the desired outcomes (Kelles-Viitanen, 2005). It is also stated that ICT is a catalyst in the complicated work of poverty reduction by leveraging the impacts on generating opportunities,

educational and health services, good governance, and democracy promotion. Because information and records sharing are a part of almost every aspect of the economy, the impact of increased information exchange capacity will be highly dependent on how the rest of the economy operates. Accountability, transparency, involvement, openness, and the rule of law are all aspects of good governance (Elisha Musasizi, 2014).

The capacity to produce, disseminate, and utilise information is a key source of competitive advantage, wealth creation, and improved quality of life in today's society. Because it allows economies to acquire and exchange ideas, skills, services, and technology locally, regionally, and globally, ICT is the cornerstone of this knowledge-based world. Furthermore, ICT supports the invention and development of new ideas, goods, and services, which promotes innovation increasing usage of ICT boosts productivity (Tromp, 2010). Few organisations that have adopted electronic means of record keeping practices in their RAM systems have overcome storage and retrieval issues, since ICT allows for a rapid and simple access of all data related to their operations. In several companies, technological advancements have aided in the effective preservation and administration of documents.

ICT TOOLS FOR RAM PRACTICE

The area of records and archive management has advanced dramatically in the last two decades, owing largely to the introduction of contemporary ICT (Kasozi, 2012). Significant theoretical work in the domain of digital records and archive management has been done in recent years; however, little of this work has been converted into practical, implementable solutions that can be used as tools for electronic records management in organisations.The use of tools and technology in automating records management activities might aid individuals and organizations in their records management operations, according to the National Archives and Records Administration (NARA, 2015) in their article on "open-source tools for records management." This will not only relieve people of their records management obligations, but it will also make organisational records and information more accessible since they will be handled more consistently.

According to NARA, organisations all around the world utilise a range of technologies and software to manage records electronically. Other tools and software, however, are publicly available and designed to assist in the creation and management of records and archives. Mobile

phones, Microsoft packages (word office, excel, access database), e-mails, cloud storage, the internet, social media, CCTVs, and many more items fall under this category. NARAhowever provided over 70 distinct tools and software that are now in use by various organisations all around the world, based on their results. A handful of these tools will be reviewed in the following table. NARA stated that these tools and software may be utilised as a "toolkit" to assist organisations and institutions in automating and improving their records and archive management processes.

	TOOLS	DESCRIPTION	FUNCTIONS
.	Alfresco Community	"Alfresco Community Edition enables organisations to manage any sort of information, including scanned pictures, photographs, engineering drawings, and massive video files.	Document management CMIS-compliant repository Content platform and Process management
.	Cloud Deployment Toolkit	"The Cloud Deployment Toolkit makes it easier to install Scape software components on top of public or private (on-premises) clouds."	Cloud computing
.	CollectiveAccess	CollectiveAccess is a free and open-source collection management and presentation program for museums, archives, and special collections. Because it is very versatile and easy to use, libraries, non-profits, individual collectors, artist studios, performing arts groups, and other organisations all over the world are increasingly utilising it. At its core, CollectiveAccess is a relational database that enables comprehensive cataloging, powerful searching and browsing, and smart web-based collection discovery."	Description Visualisation
.	Exisftool	"A command-line tool for reading, writing, and editing metadata in files."	Metadata management
.	FFmpeg	"FFmpeg is a cross-platform audio and video recording, conversion, and streaming solution."	File format conversion Audiovisual formats
	FIDO	"FIDO (Format Identification for Digital	File format

.		Objects) is a Python command-line program for identifying digital object file formats. It's made to be easily integrated into automated workflows."	identification
.	ImageMagick	"ImageMagick® is a bitmap image creation, editing, composition, and conversion software package. It supports over 100 different image formats, including DPX, EXR, GIF, JPEG, JPEG-2000, PDF, PhotoCD, PNG, Postscript, SVG, and TIFF. Resize, flip, mirror, rotate, distort, shear, and transform pictures, change image colors, apply numerous special effects, or draw text, lines, polygons, ellipses, and Bézier curves with ImageMagick."	File format conversion Image processing
.	iText	"iText is a PDF library that lets you CREATE, ADAPT, INSPECT, and MAINTAIN Portable Document Format (PDF) documents."	PDF processing
.	Spider	"Spider looks for private information like social security numbers, credit card numbers, and bank account and routing numbers on your hard disk, website, or other collection of files. Spider generates a list of files that might potentially contain sensitive data once the scan is completed."	Personally Identifiable Information (PII) Search
0.	PDF Box	"The Apache PDFBoxTM library is a Java utility for interacting with PDF documents that is open source. This project enables the generation of new PDF documents, as well as the modification and extraction of material from existing ones. Apache PDFBox also comes with a number of command-line utilities."	PDF/A validation

MAJOR CHALLENGES OF ICT USE IN RECORD AND ARCHIVE MANAGEMENT

According to research, most African records officers and archivists are inexperienced with the use of ICT in real-time records and archive management. It has changed the conventional way of maintaining records and introduced some restrictions that records managers must deal with if they are to remain relevant in the digital era. The records stability is significantly more at risk in electronic records system.The fact is that preserving an electronic record is more difficult than preserving a paper record, which can be done by placing it in an acid-free folder and storing it in a safe and environmentally friendly storage facility. (Akporhonor, 2020)

Most of the problems encountered in managing records, especially digital records, according to Iwhiwhu (2011), are related to technological obsolescence, insufficiently educated staff, policy formulation and implementation, and so on. These problems, according to NARA (2015), include technology obsolescence, technological dependency, increasing danger of data loss, and records, threats to dependability and authenticity, a loss of security and privacy, higher expenses, information decentralisation, and a greater demand for information technology professionals.

Obsolescence in Technology

The ever-changing nature of software and computer technology has resulted in a phenomenon known as "technological obsolescence." Old systems become outdated as new advances in computer technology emerge, and the computer industry no longer supports them. Hardware isn't the only thing that suffers from technological obsolescence. Many once-popular software applications have become obsolete. Some of these technological shifts are the result of shifting economics and markets, while others are the result of breakthroughs and changes in software and hardware.

Dependence on Technology

Technology is required for electronic recordkeeping. Computer hardware and software produce and manage them. As a result, electronic records must be accessed through conciliation. A computer disk cannot be read by holding it up to the light like a paper document or even a frame of microfilm with the assistance of a magnifying lens. Because data is important, individuals and organisations can quickly become reliant on technology for their important information since electronic records cannot be used without the appropriate technologies.

Authenticity and Reliability Threats

Changes in information and computer systems need the migration of information to new technologies in order for it to stay accessible throughout time. This migration process, however, might compromise the authenticity and trustworthiness of information by changing the content or structure of the records. Electronic records, unlike paper records, must be maintained and conserved in order to ensure their validity as evidence. Paper documents can be transferred, filed, re-filed, copied, and otherwise used and reused without alteration.

Security and privacy can be compromised

The introduction of information technologies has had an impact on how government and private organisations store and make records in their possession available. Firms may use computers to construct enormous, sophisticated databases and make massive volumes of data available online. Personal financial records databases, for example, could be extremely sensitive.Individuals will find it beneficial. However, if adequate security safeguards are not in place, outsiders may get access to such information, jeopardising the privacy of the data's owners. In an electronic world, people's fundamental right to privacy can be infringed upon, either purposefully or accidentally.

Costs Increasing

Hardware and software expenditures might be too expensive. Costs are paid not only while purchasing technology, but also when updating equipment and systems, which is necessary to stay up with evolving technologies. This continuous expenditure is a major obstacle for organisations like the library that have limited resources to address other issues.

Insufficiently educated staff

Insufficiently educated staff has become a more pressing issue, particularly for information-oriented organisations that began their process of record and archive management through traditional (manual) means; the majority of this staff is not technologically inclined due to the complexity of beginning to be technologically compliant. As a result, this must be taken seriously since it is really slowing down the performance of many organisations in record and archive management because their personnel are unprepared for technological changes.

PROSPECT OF ICT USE IN RECORD AND ARCHIVE MANAGEMENT

ICT and RAM have a lot in common and numerous qualities that complement each other. They are both focused with information generation, storage, accessibility, and security. Both RAM and ICT ultimate goal is to support, safeguard, and empower the organization's operations in a cost-effective way today and in the future. In the context of RAM, ICT is the most significant development.ICT professionals maintain systems to manage an organization's information assets; on the other hand, record and archive management focuses on protecting, classifying, and maintaining the authenticity of records so that they remain accessible and serve as evidence of business transactions for as long as they are considered necessary to be retained.

Without a doubt, ICT has cemented its place at the heart of Record and Archive Management practice, ensuring a bright future for the two disciplines. This is because one of the most profound benefits of ICT on RAM is how it has simplified the complexity of traditional record keeping, and this impact cannot be undone or matched by any other intervention. Because organisational and individual development and growth reflect national development, organizations and individuals in a country where development and growth are essential are hastening their personal growth and development levels, which are primarily ICT literate and conformity. When it comes to making decisions, records and archives are the best option, but when they aren't available, illogical decisions are made, delaying or halting national development. As a result, it's critical to completely integrate ICT into archive and record management across a variety of information-based industries to provide rapid access. Individual, institutional, and national growth will all be enhanced as a result of this. Furthermore, manual energy and time will be saved; mutual trust between and among organisations and individuals will be strengthened; and sound judgment based on facts and statistics will prevail. The use of ICT has the potential to fill the void left by traditional record-keeping.

CONCLUSION AND RECOMMENDATIONS

Under the impact of ICT, the practice of records and archive administration has evolved from a manual to a digital orientation throughout time. In current digital age, a variety of technologies has been offered to records and archive administration, regardless of the organisational history. However, despite the changes in records and archive management brought about by ICTs and associated tools, they are yet to be fully felt in conventional African memory institution settings such as museums, archives, libraries, and other information centers. Thus, it is critical for management of organisations, record officers, archivists, and other personnel in the information-oriented field to recognise the underlying impact of technology in the management of records and archives in the digital age, thereby saddling respective individuals and organisations with the responsibility of building all capacities (financial capacity, employment of ICT) to realise the full potential of information and communication technologies.

Also, greater emphasis should be made on staying current with new developments in records and archive management, since this area is rapidly evolving, and organisations all over the world are realising the need to incorporate them into their processes and activities for maximum performance.

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