**MANAGING OF RECORDS AND ARCHIVES IN AN EVOLVING INFORMATION ENVIRONMENT**

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**ABSTRACT**

**Managing of Records and Archives in an Evolving Information Environment.**

The management of Archives in an evolving information environment cannot be discussed separately from the management of records. The management of records therefore has a direct impact on the management of Archives. Hence this paper will discuss how the records are created, stored and retrieved in an evolving information environment which will later determine how these records will be managed in the archives.

Schellenberg defines a record as all books, papers, maps, photographs or other documentary materials regardless of physical form made by or received by public or private institutions in pursuance of its legal obligations or in connection with the transaction of its business and preserved or appropriate for preservation as evidence of its functions, policies, decisions, procedures, operations or other activities because of the informational value there in. In other words a record is proof or evidence of a transaction in an organization and therefore becomes primary data in the operations of the organization.

The life cycle of a record includes its creation, an active period (as primary data) for decision making, a semi-active (still has value, but not needed for day-today decision making) and finally becomes inactive where it is reserved for its archival value. Therefore the task of the archivist according to Jenkinson is to preserve the records as nearly as possible in the state in which he received them, without adding or taking away, physical or morally, anything. To preserve unviolated, without the possibility of a suspicion, in every element in them, every quality they possessed when they came to him. The paper will thus elaborate how this can be possible and also its challenges in an evolving information environment.

As the theme states “50 years of Re-engineering Library, Record Centres and Archival Services in an Evolving Information Environment”, the paper will focus on the evolution of information creation, storage and retrieval in the past 50 years. At independence in 1964, there were few documents created by the colonial government and these were mainly in paper form. From 1964 to date, there has been a lot of transformation in the creation, storage and retrieval of records in the various organizations and government institutions. The format of the records thus created has changed according to the prevailing innovations in the Information and Communication Technologies (ICTs).

The paper will also look at a two-phase life cycle approach to the management of records i.e. the creating body being interested in the primary responsibility for their reliability and authenticity while they are needed for business purposes, and the archivist for the responsibility of preserving their authenticity over the long term.

Further the paper will look at the future prospects of Archival services in an evolving information environment such as challenges of custody of electronic records and appraisal of electronic records (why, when and what to appraise?)

**Definition of terms**

 **What is a record?**

The definition of a record in the Australian Standard AS 4390-1996 reads:

“recorded information, in any form, including data in computer systems, created or received and maintained by an organization or person in the transaction of business or the conduct of affairs and kept as evidence of such activity”

Records are created to support business activity and they are kept as **evidence of that activity**. The record should therefore be compliant, adequate, complete, meaningful, comprehensive, accurate, authentic and inviolate. If a record lacks accuracy, authenticity and has been violated for example, it can not be accepted as evidence of the activity or transaction that has taken place and therefore it will not be kept as an archival document.

**What is an electronic record?**

Landis, Larry (2000:25) defines electronic records as “informational files or data files that are created and stored in digitized form through the use of computers and applications software. Electronic records are always machine dependent formats; thus electronic records are accessible and readable only with the assistance of digital processors.” Computers and other electronic devices create many of the new records we use today.  These records, although electronic in format, are the same as records in other formats.  Electronic records show how you conduct business, make decisions, and carry out your work. They are evidence of decisions and actions.  Fundamental records management principles apply to electronic records and all other record formats.

Due to the increase in the production electronic records, there is a paradigm shift in the management of records as compared to the traditional way of records management and this has come up with its own challenges.

**What is a Records cycle?**

Records life-cycle in [records management](http://en.wikipedia.org/wiki/Records_management) refers to the following stages of a records "life span": from its creation to its preservation (in an archive) or disposal. Landis (2000) states that

 “records, like living organisms, have life cycles”. They are created or received (born or adopted). At this stage their physical form (paper, electronic, magnetic, photographic) and informational content are established. Records are then used and maintained (they mature). They are referred to, revised, refiled, and occasionally reorganized. It is generally true that the need to refer to files declines sharply as their age increases. As records reach the end of their active lives, they are disposed of in some manner; they are destroyed, reformatted, transferred to inactive storage, or transferred to the Archives. While various models of the records life-cycle exist, they all feature creation or receipt, use, and disposition. In other words it includes identifying, classifying, prioritizing, storing, securing, archiving, preserving, tracking and destroying of records. Records life cycle model is therefore a method used to manage records especially when dealing with paper or physical records. However, the life cycle becomes blurred when it involves electronic records.

**What is records management?**

The Australian Standards AS 4390- 1996 defines records management as “the discipline and organizational function of managing records to meet operational business needs, accountability requirements and community expectations”. Records management therefore is concerned with ensuring that business activity is appropriately documented in organizations, and with designing and implementing all the associated systems, procedures and services. Records management style can therefore be affected by the type of records that one is using. For example when one has paper or hard copy records, they way these will be managed will differ from the way the electronic or soft copies will be managed.

**Why is records management important?**

Kennedy, Jay (1998) alludes that “organizations rely on efficient access to the right information”. Organizations need the information in order to support decision making, for general operational purposes, as evidence of their policies and activities and also for litigation support.

Since organizations have legal, professional and ethical responsibilities to create certain records, they are also required to retain certain categories of records for specific periods. To archive this goal, records have to be managed in a professional way through records management.

Organizations need to control the amount of records that are generated and stored. This is for economic reasons mainly for paper records that are expensive to store and maintain. Records management is important for operational efficiency; it is hard to find relevant information if it is buried in a lot of obsolete information.

Records management is also important in that the records have to be kept in a conducive environment to avoid damage from environmental conditions. Therefore they have to be stored in a secure place at the right temperature and the right humidity.

Records management therefore is important because it plays a role in developing controls for disposal of records and for the separation of active from inactive records. There is a process which should be well documented, starting with a records retention schedule and policies that have been approved at the highest level. In addition an inventory of the records disposed off should be maintained, including certification that they have been destroyed.

**What is an archive?**

Wikipedia (2014) defines archives as “records that have been naturally and necessarily generated as a product of regular legal, commercial, administrative or social activities”. They have been metaphorically defined as "the secretions of an organism",and are distinguished from documents that have been consciously written or created to communicate a particular message to posterity.

An archive therefore is a collection of records that have been selected for permanent or long-term preservation on grounds of their enduring cultural, historical, or evidentiary value. Archival records are normally unpublished and almost always unique, unlike books or magazines for which many identical copies exist.

An organization produces a lot of documents during the course of doing business, and it is not all the documents that have archival value. It is estimated that only 3 to 5% of all the materials produced will end up as archival materials while 95 to 97% of the materials will be disposed off.

**Managing of Records and Archives in an Evolving Information Environment**

A record is something that represents proof of existence and that can be used to recreate or prove state of existence, regardless of medium or characteristics. A record is either created or received by an organization in pursuance of or compliance with legal obligations, or in the transaction of business. Traditionally, records were tangible objects such as paper documents. Records identification is the means by which consensus is achieved within an organization that leads to how a record is uniquely distinguished from non-record material. Once a record is created, it has to be accessed and distributed. Documents may be separated from a personal file and kept in a locked cabinet with a control log to control and track access. Since records of an organization come in a variety of formats, the storage of records can vary throughout the organization. Records are usually managed in a centralized location, such as a records center or repository, or the control of records may be decentralized across various departments in the organization.

The records created as a part of the structured business process are documentary sources that meet the need for enterprise communication and that are widely used for communication and authentication purposes. (Casco and Strong, 1999:172). Unlike other documentary sources, records contain authentic information on the business process of which they form a part and they have evidential value. Forming a significant part of the organization information content, records enable and facilitate organization activities in terms of:

* Executing the work, of which they form a part, regularly, effectively and legally.
* Enabling the continuity and consistency of the services.
* Supplying the policies, regulations and outputs to the stakeholders and administrative units.
* Preventing any legal dispute.
* Harmonizing with administrative and legal requirements, including supervision.
* Fulfilling financial and ethical responsibilities.
* Protecting the rights of employees, customers, and other stakeholders, along with the interests of the enterprise
* Ensuring continuity of work in case of emergency
* Rendering the collective and corporate memory continuous (Sprehe, 2005:298)

Along with the ever-increasing use of its applications, the scope of records management is expanding to include the management of electronic copies of printed records and the records that are born digital. Management of records in an evolving information environment has been influence by the use of electronic records. Electronic records management systems may include creation of electronic records and files, e-mail management, scanning and access, integration of work flow, user interface have become part of the applications made in this regard.

The impact of information technology development on evolving frameworks for managing the creation, capture, maintenance and use of evidential records in electronic format is a great cause of concern among records professionals with regard to maintaining control over records created and stored in these systems. In this electronic age, many archivists and records managers are anticipating that physical archives will be diminished in importance. However, before this should be allowed to occur, mechanisms need to be established to capture and maintain information necessary to ensure that records retain their structure and context throughout their life-cycle in a distributed environment. While archivists are by no means not alone in their concern for transportation of data across systems, they are in a position to argue for the need to capture and preserve the structural and contextual information needed to ensure a record’s significance as evidence of a transaction.

The life cycle of a record will be affected by the format in which information is being created which will determine its storage. The management and preservation of information and records in digital systems have an influence on traditional approaches to various extents. For example, the concept of “records life cycle”, forming the basis for records management approaches is now being affected and has started to be addressed together with records continuum approach. The traditional records life cycle approach defines the record procedures linearly within the process of creation, editing and disposition, and accordingly digital records might be identified simultaneously in different environments and under different conditions (Mckemmish, 2001).

**Records life cycle model.**

A common way of understanding records management is to use a life cycle model. Kennedy, Jay(1998:9) argues that “ with this model, a record is said to have a life cycle, and that life cycle can be divided into five major phases-creation, distribution, use, maintenance and disposal”. Within these phases there are activities that are undertaken. When one examines the creation phases for example, the traditional records were created in paper format and a physical document was produced as evidence of a certain activity that took place. These documents have to be arranged in a certain way such that they can be used when required. There are elements that have to be taken into consideration when handling hard copies such as storage space and having conducive environment where the records are kept. Records must be stored in such a way that they are accessible and safeguarded against environmental damage. Paper documents can be filed in a cabinet in a room that have specialized environmental controls including the right temperature and humidity. Vital records may be stored in a disaster-resistance safe or vault to protect against fire, flood, earthquakes and conflict. In addition to on-site storage of records, many organizations operate their own off-site records centres or contract commercial records centres. Apart from being able to store records, organizations must also establish the proper capabilities for retrieval of records, in an event that they are needed for such purpose as an audit or litigation or for the case of destruction. However record retrieval capabilities become complex when dealing with electronic records, especially when they have not being adequately tagged or classified. Many modern records centres use a computerised system involving bar code scanners, or radio-frequency identification technology to track movement of the record.

 **Below is a diagram showing the records life cycle.**

**Records life cycle**



**Source: http//en.wikipedia.org/wiki/file Accessed on 19th September, 2014**

After the active stage of the records, they can be disposed off by either transfer to a historical archive or museum. Most records are not archival materials and they are destroyed at the end of their inactive stage and about 95-97% of the documents created are destroyed. Only about 3 to 5% of the documents created in an organization are kept for their archival value. Disposal of records does not always mean destruction. When destruction occurs, records ought to be authorized by law, statute, regulation, or operating procedure and the record should be disposed of with care to avoid inadvertent disclosure of information. The process needs to be well-documented, starting with a records retention schedule and policies and procedures that have been approved at the highest level. Records contain classified information which is not meant for the general public and they should not simply be discarded as refuse. Most efficient way to destroy records is through pulverising, paper shredding or incineration.

**Electronic records**

However managing of records in an evolving information environment has its own challenges. As most organizations are now using computers to generate their records, electronic records raise specific issues. The general principle of records management applies to records in any format, but for electronic records, it is more difficult to ensure that the content, context and structure of records is preserved and protected when the records do not have a physical existence. This has important implications for the authenticity, reliability, and trustworthiness of records. Authenticity may not be guaranteed for business or individuals wishing to convert their paper records into scanned copies. Hedstron, Margaret(1995:179) observed in *networking and the future of libraries2* “typically archives are concerned with records as they have been retained and organized by formal institutions to provide evidence of their policies, procedure, and transactions”. In order to preserve authenticity and trustworthiness, electronic records should not be tempered with in any way that may bring suspicion. Once electronic records are tempered with, they will no longer be held as evidence of the activity or transaction that took place in the enterprise hence they cannot be kept as archival materials since they do not represent an activity that took place accurately.

In the past, archival repositories usually acquired coherent, organized collections of personal papers or organizational records as a single body of documentation. Records were turned over to the custody of a repository when they were no longer needed by the organization that created or accumulated them. These practices are not feasible for preserving records created using today’s methods and technologies. Hedstron, Margaret(1995:180) further states that “from a purely practical perspective, acquisition of a body of electronic documentation years after it was created will not be technically feasible in the digital environment”. Archivists are rethinking how to extend basic norms and concepts that have formed the foundation of archival practice into the digital environment. Concepts as basic as what makes a record, document or source authentic are challenged when anyone can alter a document easily, leaving no trace of the changes. There is no difference between an ‘original’ and a ‘copy’ because all copies of a digital document may look identical, while physically identical digital objects may appear differently to users with different output devices. When the original source cannot be identified definitely from any inherent characteristics, establishing and maintaining the authenticity of digital information becomes a critical concern to archivists. The complex problem of digital archiving, research and development is in the areas of storage media, hardware and software dependence, migrating, legal impediments, access strategy, and selection of materials present a range of options for current and future preservation planning.

The challenge now is how to manage archives in an evolving information environment where most of the documents are in electronic format. When archives were receiving records in physical or paper format, it was easy to preserve the documents in their original state but the increase in number of the electronically produced documents, has brought about a problem of preservation. Bearman, (1994) highlighted this problem by stating that preserving electronic records requires not only the content of records, but also the ability to recreate and reproduce their structure and to provide linkage between an archival document and related records, its creator and recipient, the function or activity it derived from, and its place in a larger body of documentary evidence. Technology is changing at faster rate where new storage devices are replacing old ones thereby causing concerns as to how the information can be kept for a long time in one format. For example in the past, information or records were stored in floppy diskettes and the computers had a provision for using these external storage devices. Technology later improved the external storage to flash disks which could store relatively larger amounts of data as compared to floppy diskettes. Most of the modern computers now no longer have a provision for using floppy diskettes especially laptops and other modern gargets, there by rendering the floppy diskettes un usable. The rapid change in technology has an impact on the management of electronic records in that it requires the organization has to change the equipment all the time there is a new development so that the electronic records kept for archival can be accessed on the new equipment otherwise they will become un usable and important information would be lost.

The failure to preserve contextual information, such as names and titles of authorized senders and recipients, time and date stamps, and similar data in network systems would make future assessments of the authenticity of electronic documents suspect at best.

As the world becomes more digital in nature, an ever growing issue for the records management community is the conversion of existing or incoming paper records to electronic form. Such conversions are most often performed with the intent to save storage costs, storage space, and in hopes of reducing records retrieval time (Wikipedia, 2014). During conversion, care should be taken in order to maintain the authenticity of the records.

**Continuum model**

In order to help solve some of the problems that are related to electronic records, there are theories that were developed such as the continuum theory. As defined in Australia Standard 4390, records continuum is ‘..consistent and coherent regime of management processes from the time of the creation of records [and before creation, in the design of recordkeeping systems] through to the preservation and use of records as archives.’ The International Council on Archives (2011) defines the continuum concept as ‘a consistent and coherent process of records management throughout the life of records, from the development of recordkeeping systems through the creation and preservation of records, to their retention and use as archives.’ The above definitions suggest an ideal integration for documents, records and archives management. The records continuum model focuses on the management of records as a continuous process which include creation of records. It looks at managing records in the light of such questions as what records needs to be captured to provide evidence of an activity, what systems and rules are needed to ensure those records are captured and maintained, how long the records should be kept to meet business and other requirement, how they should be stored, and who should have access to them. Though the records of an organization are subject to certain processes during their lifespan which involve them being transferred from one site to another, these processes are based on particular arrangements developed for those records rather than on any natural sequential stages which must occur in recordkeeping. The records continuum model is a conceptual guide for the development of recordkeeping policies and programs. The process could be explained as follows:

* Records of business activities are created as part of business communication process within the organization.
* Records which have been created or received in an organization are tagged with information (metadata) about them, including how they are linked to other records.
* Records become part of a formal system of storage and retrieval which constitutes the records the corporate memory of the organization.
* Certain records which are required for purposes of societal accountability or other forms of collective memory become part of wider archival systems which comprise records from a range of organizations.

The life cycle model as a means of managing records has been criticized as not been workable because of the emergence of electronic records. Due to the evolving information environment, in the 1990s, the continuum model was formally constructed which viewed records management as a continuous process from the moment of creation, in which archivists and records managers are actively involved at all points in the continuum. The primary motivation in formulating and supporting this model was a concern that archivists have to be involved early in the creating process of electronic records. Management of records and archives in an evolving information environment has resulted in distinguishing the continuum model and the life cycle model. The difference between continuum model and life cycle approach is that while the life cycle model proposes a strict separation of records management responsibilities, the continuum model is based upon an integration of the responsibilities and accountabilities associated with the management of records. In other words, the continuum model advocates for dealing with the whole extent of the record’s existence.

The continuum approach means the end of the traditional demarcation between the functions of the records manager and the archivist. The division of activities into records management and archival phases, with the consequent division of responsibility between the records manager and the archivists is seen by some as artificial and restrictive.

Sarah Flynn explains that the records continuum model is significant because it broadens the interpretation of records and recordkeeping systems offered by the lifecycle. Such broadening is helpful, given the variety of context in which archivists and records managers operate and in which archives and records are used. One of the consequences of this viewpoint is to propel archivists and archival functions forward in the records management process. In other words, according to the continuum model, strategies and methodologies for appraising, describing, and preserving records are implemented early in the records management process, preferably at the design stage, and not at the end of the life cycle.

Many of these new types of media suffer from a shorter life expectancy than paper. With the quick advancement of our technological society, old media is becoming obsolete. Therefore, migration from old formats to new formats is necessary for the preservation of these digital medias so they can remain accurate and accessible. This is an expensive venture for the organization because the old technology has to be replaced with new ones in order to be compatible with the latest storage facility.

Metadata is an important part of digital preservation as it preserves the context, usage, and migration of a digital record. Similarly to traditional preservation, metadata is required to preserve the context, authenticity, and accessibility of a record.

**Role of Authenticity**

The continuum model of records management had advantages and disadvantages. Supporters of the model like Luciana Duranti (1995) argue that the authenticity over time of inactive records be ensured only when their custody is entrusted to professional archivists. Others have divided the life cycle managerial activity into two phases, one aimed at the control of the creation of reliable records and to the maintenance of authentic active and semi-active records, and the other aimed at the preservation of authentic records. In other words the supporters of the continuum model maintain that a qualified archivist should be engaged at an early stage so that the electronic records are not violated in the process before they are declared to be archival materials. Authenticity has long been understood as a significant term in archives and records for a long time because newly created records are assumed to be all authentic and only authentic records are managed and preserved in archives. The assumption becomes fragile and weak due to the vulnerable nature of digital documents. In recent years as digital records and information are prevalent in organizations, records managers need to emphasize the authenticity in the management of digital documents and assess the concept to use of digital records in the life cycle model. Authenticity warrants that the record is not changed or manipulated after it has been received or sent since it was created and transmitted to many parties over the time. Luciana Duranti (1995) argues that ‘authenticity’ in the archival sense refers to the maintenance of record’s reliability through its use, transmission, and preservation over time.

**Implications on archives management in an involving environment**

Archive management has evolved from the records life cycle using hard copies to the electronic life cycle using soft copies. The emergence of electronic records has brought challenges in the management of records in that the traditional way of managing paper records has changed due to the change in the format of records to be kept as archival materials. The records cycle which was easily followed in the past has been affected in that there has been debate as to whether the electronic records should also follow the same cycle or adopt a different one. Current issues in records management have highlighted the following: government compliance and legal issues, security of records, adaptation and implementation of different models of records management, conversion of paper records to electronic form and finally the records life cycle management.

With the evolution of information technology, it has become prudent to find a more applicable method of record keeping and managing them. The life cycle model for managing records, as articulated by Theodore Shellenberg and others has been the prominent model for North American archivists and records managers since the 1960’s. It was easier to follow the life cycle model at that time because the records were all in paper formats or physical. It was very applicable to physical records as it was easy to physically move records from an active site to a semi active area and finally to the archive or for disposal. At this time the issue of authenticity was not very much pronounced since it was the same physical document moving from one stage to another in the life cycle. The model has clearly demarcated the responsibilities between the archivist and records management professionals. Archivists have viewed the life cycle of a record in terms of pre-archival which includes active and semi-inactive stage and to regard the stage when the archivist intervenes in the cycle as occurring sometime towards the end of the life cycle when the record becomes inactive and archival.

However with the evolving information environment, does the model provide a viable strategy for managing electronic records? In Jenkinson’s theoretical framework, archival records are characterized by two common features of extraordinary value and importance; impartiality- the principle that records are inherently truthful and ‘free’ from the suspicion of prejudice and authenticity- the principle that archives were preserved in official custody and free from suspicion of having been tampered with. The primary duty of the archivist is to retain the impartial and authentic qualities of records entrusted to his/her care.

With the emergence of electronic records, critique of the life cycle model also emerged demanding an alternative model or framework regarding the management of electronic records. In the 1990’s they came up with the ‘Records Continuum Model’ which views records management as a continuous process from the moment of creation, in which archivists and records managers are actively involved at all points in the continuum. The basic difference between the life cycle approaches is that while the life cycle model proposes a strict separation of records management responsibilities, the continuum model is based upon an integration of the responsibilities and accountabilities associated with the management of records. The continuum model of management relates to the recordkeeping regime which is continuous, dynamic and ongoing without any distinct breaks or phases.

**Who keeps electronic records?**

The life cycle model clearly shows the custody of records as they move during their life cycle from creation until they end up in the archives. The problem emerges when it comes to electronic records which are not in a physical form to be moved from one site to the next. The continuum model however, advocates for the involvement of the archivists from the early stages of the life cycle of the electronic records as an essential requirement for ensuring their authenticity over time. The continuum model seems to depict that the archives will become less pronounced since the electronic records can remain indefinitely in the custody of the originating office. The basic premise supporting this position is that the electronic environment, archival institutions can fulfil their responsibilities without assuming physical custody of the records.

**Conclusion**

It is evident that the format of the records can have a effect on the management style employed at each given time. In the early 1960’s when paper (physical ) records were the only means of communicating information about the business transactions in the organization, the life cycle model was used and it worked well at that time. Although it had its own advantages in terms of authenticity since the original copy was kept and the easy way of moving the records from one site to the next according to the stage in the life cycle, it was however not sustainable as the records format changed. Through re-engineering archival services in an evolving information environment, new approaches become more applicable in the management of electronic records that have now become more useful in the organizations in terms of transacting business. Electronic records can therefore be managed more professionally adopting the Continuum model of managing records.

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