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ABSTRACT

The aim of the study was to investigate the role of digitization in the preservation of corporate archives at Kenya Power Limited. The results of the study indicated that access to the digital records was majorly provided via internet. It was followed by the use of CD or DVD in the search room, online searches in the search room from server storage/tape library as well as the use of E-mails). KPL provided three kind of access to digital archive services which included full access, partial access as well as no access was allowed on some of digital records. The access to digital records held by KPL archival services was determined by sensitivity, confidentiality and the reason for access of the archived information. Majority of the respondents stated that KPL had policies that regulated the preservation of digital archives while only a few of the respondents stated otherwise. Among the policies set up by KPL to regulate the preservation of digital archives included; authorization, staff development, application of latest technology in preservation of information and regulatory compliance policy. More than half of the respondents were aware of the digital preservation policies. KPL digital archive did not have security threats attributed to the security measures that the organization had put in place which included; data and database security, procedural security, system security and data back-up. The challenges surrounding digital preservation of archives included inadequate funding, obsolete hardware and software, insufficient ICT facilities, fragile storage media, inadequate expertise and shortage of DRM Skills. The study recommended that KPL should improve its communication channels pertaining its set organizational policies on preservation of archived information and it should have effective implementation of security measures to secure its information system as well as digitally preserved archives. It was hoped that the study would serve as a catalyst in the modification and formulation of digital preservation strategies in the both private and public organizations in Kenya.

Key terms: *Accessibility of Digital Archives, Policy Framework of digital Preservation, Preservation of Archives*

INTRODUCTION

Digital preservation helps KPL to track the performance of the organization, ability to display, retrieve and use of digital collections and provide substantial evidence of what was done or not done and justify for the same. The KPL is a national electric utility company dealing with, managing electric metering, issuing license, invoicing, emergency electricity services and customer relations. Therefore digitization and preservation of corporate archives at Kenya Power Limited is likely to enhance service delivery. Organizations are preserving an ever-increasing number of digital archives. Unlike traditional archives that utilized paper and film, digital archives are vulnerable to loss and corruption. Because of the speed of technological change, organizations have to consider issues of preservation of their digital archives even while they are still in active use and needed for posterity. In order to ensure archives authenticity, reliability and accessibility over time, organizations need to take into consideration issues of preservation at the time of creation. This means addressing the issue of preservation at the planning stage of program or system design even before the records are created (Tafor, 2003). With the advancement of digital technologies, computer-based apparatus have become dominant forces to shape and reshape record systems and services. The applications of information technologies in record management and services have become a key to satisfying ever-changing complex information demands and expectations of users. Accelerating growth of information technology has forced information professionals to rethink how to receive, process, store and retrieve information in a more user friendly way. One of the most advantageous ways of information management tool is digital preservation. Digital preservation is one of the new trends of present digital record management thus any organization has to cope with the rapid acceptance of digital preservation research and development for its survival. Digitization is rapidly becoming one of the standard forms of preservation for libraries, archives and information centers' analog materials. The newer process of digitization allows preservationists to ensure information contained within fragile, organic materials will still be viewable to future generations. However, as technology changes there are concerns that the methodology used for preservation of these digital records are not going to be adequate and usable in the future. Software and formats changes faster and could be obsolete in a short period of time. This applies both to hard copy materials that are converted into digital copies, as well as born-digital items, or those which were created as digital copies initially. For this reason, digitization is not strictly a preservation activity, as the new files will require preservation as well (Conway, 2010).The digitization plays a beneficial role because there are no physical limits for storage; can be accessed via the Internet; integrated online resource sharing; linking and networking possibilities; any number of times digital files can be duplicated with exactness and many can access a digital file at the same time. Getz & McKinley (1997) cited the benefits of digitization as follows: redundancy of collections is reduced since information sharing is enhanced; digital materials can be sorted, transmitted and retrieved easily and quickly; access to electronic information is cheaper than its print counterpart when all the files are stored in an electronic warehouse with compatible facilities and equipment. Digital preservation is a terminology used to describe both the maintenance and the safe guarding of a digital resource into the foreseeable and the distant future. Digital preservation is the action required to maintain access to digital materials beyond the limits of media failure or technological change (Ronald & Michael, 2005). Hedstrom (2006) defined preservation as the process of planning, resource allocation and application of preservation methods and technologies necessary to ensure that digital information with continuing value remains

accessible and usable. On the same note, Ronald & Michael (2005) are of the view that digital preservation is emerging as a trustworthy process, yet there is much on-going debate concerning the viability and even the meaning of this process. Given the nature of electronic storage technologies and the short-lived nature of web pages, many are doubtful that digital preservation will ever become a reality.

Corporate archives are archival departments within an organization or corporation that manage and preserve the records of that business. These repositories exist to serve the interest of company staff members and to advance business goals. Corporate archives allow varying degrees of openness to their materials depending on the organization's policies and record management staff availability (Bakken, 1982). Lor (2005) defines an archive as a place where people go to find information. Rather than collecting information from books as you would in a conventional library, people who do research in archives often gather firsthand facts, data, and evidence from letters, reports, notes, memos, photographs, audio and video recordings, and other primary sources (Potter, 2003). Kasetsart University Archives (2010) defined archives as all original documents considered valuable to preserve in public and private sector offices that are usually referred to as archival materials and used for accountability, compliance, transparency and verification of the past administrative processes. Kenya Power Limited (2014) has a history dated back to 1875 when Seyyied Barghash the Sultan of Zanzibar procured a generator to illuminate his palace and nearby streets. This generator was acquired in 1908 by Harrali Esmailjee Jeevanjee, a Mombasa based merchant leading to the formation of the Mombasa Electric Power and Lighting Company whose mandate was to provide electricity to the island. In 1908, Engineer Clement Hertzel was given the right to supply electricity in Nairobi city thus leading to the formation of the Nairobi Power and Lighting Syndicate.

RELATED LITERATURE

Theoretical Framework

Open Archival Information System Model

The central concept in the OAIS reference model is that of an open archival information system (OAIS). The term open refers to the fact that the reference model was developed and released in open public forums in which any interested party was encouraged to participate. It does not refer to or make any inference about the level of accessibility associated with an archive. An archival information system is an organization which may be part of a larger organization of people and systems that have accepted the responsibility to preserve information and make it available for a designated community' (OAIS, 2012). OAIS-type archive has two major functions for an OAIS-type archival repository: first, to preserve information i.e., to secure its long-term persistence and second, to provide access to the archived information in a manner consistent with the needs of the archive's primary users or designated community. OAIS-type archive is supplemented with a list of mandatory responsibilities that is expected to meet. The first responsibility is to establish explicit selection criteria for determining which materials are appropriate for inclusion in the archival store. These criteria is based on factors such as subject, origin or format. Once the scope of the archival collection is defined, appropriate steps must be taken to motivate the producers/owners of the targeted items to transfer them along with accompanying metadata into the custody of the OAIS for preservation. The second responsibility emphasizes that OAIS needs to obtain intellectual property rights to authorize the procedures necessary to meet preservation targets. For example, if the OAIS must create a new version of the archived item so that it can be rendered by current technologies, it must have the explicit right to do so. The reference model established three areas

where challenges may occur in obtaining need levels of control over archived materials as follows: copyright and other legal restrictions; authority to modify archived information and agreements with other organizations to share or leverage their preservation activities. The third responsibility of an OAIS-type archive is to determine the scope of its primary user community. Important point to note is that accurate characterization accurate characterization of the primary users of the archived information is a pre-condition for meeting another of the OAIS's responsibilities: ensuring that the information is preserved in a form that is independently understandable to these users. The forth reference model is responsible for preservation process and the means for making the archived information available to the user community. An OAIS should establish and document clear policies and procedures for carrying out the preservation of the information in its custody; these should be accessible to and understandable by user community in the OAIS alongside conforming to the defined preservation objectives. Finally, an OAIS should be committed to making the contents of its archival store available to its intended user community through the implementation of access mechanisms and services which support to the fullest extent possible users' needs and requirements such as medium (e.g., print-on-demand, file formats) and access channels (e.g., Web access, transfer of physical media). Access restrictions attached to some or all of the archive's contents should be clearly documented (McDonough, 2006).

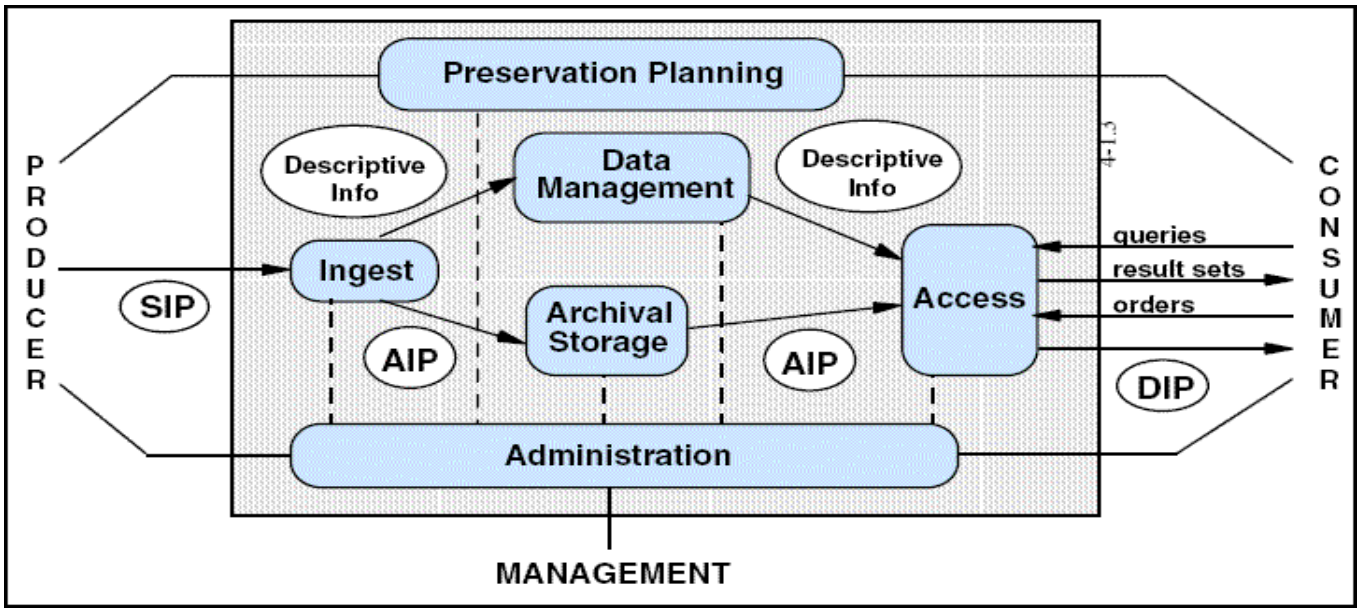


Figure 1: OAIS Functional Model. Adopted from Sawyer, D. & Reich, L. (2002)

Ingest Entity is the set of processes responsible for accepting information submitted by producers and preparing it for inclusion in the archival store. This entity provides the services and functions to accept Submission Information Packages (SIPs) from Producers (or from internal elements under Administration control) and prepare the contents for storage and management within the archive. The functions of the ingest include receiving SIPs, performing quality assurance on SIPs, generating an Archival Information Package (AIP) which complies with the archive's data formatting and documentation standards, extracting Descriptive Information from the AIPs for inclusion in the archive database and coordinating updates to Archival Storage and Data Management (CCSDS, 2002).

Archival Storage is the part of the archival system that manages the long-term storage and maintenance of digital materials entrusted to the OAIS e.g., online, near-line, offline. On Data Management the primary functions of data management include maintaining the databases for which it is responsible; performing queries on these databases and generating reports in response to requests from other functional entities within the OAIS. On Preservation Planning the main tasked attached to this portion is that it is responsible for mapping out the OAIS's preservation strategy and making appropriate revisions recommendation to this strategy in response to evolving conditions in the OAIS environment. On Access majorly it is responsible for the management of the processes and services by which consumers and the designated community locate, request, and receive delivery of items residing in the OAIS's archival store. The main functions of access include communicating with consumers to receive requests, coordinating the execution of requests to successful completion, generating responses (Dissemination Information Packages (DIP), result sets, reports) and delivering the responses to Consumers. Finally, Access is responsible for implementing any security or access control mechanisms associated with the archived content. (Beedham et al, 2004). On Administration it is responsible for overseeing the operation of the archiving and access systems, monitoring system performance, and coordinating updates to the system as appropriate. Lavoie (2013) states that the use of the term OAIS implies an archival system dedicated to preserving digital information and making it available over the long term, as well as meeting, in some form, the six mandatory responsibilities and makes it available to its designated community. In light of the above, OAIS model will be adopted as the theoretical framework of the study due to its universal acceptance as a standard and a framework designed specifically for digital preservation of archives. The model further suit the study since it focuses on the key aspects of access through which designated community locate the archival storage, preservation planning which encompasses the policy strategy formulation and finally the archival storage which has the key aspect of security both for physical and electronic archives. In summary, OAIS model seek to answer the research objectives and questions under study.

Empirical Literature Review

Investigation into the state of Digital Records Management in the Provincial Government of Eastern Cape: a case study of the Office of the Premier.

A study undertaken by Munetsi (2005), established that that there is a records management programme which caters for digital records management in the Office of the Premier (OTP). The majority of the respondents (90%) knew that the department had a records management programme which also supported digital records management. The study revealed that records such as the leave forms, employee wellness and records of benefits of employees and recruitment forms were being generated and accessed online using the new system. Although most of the respondents (76.7%) indicated that they received training on how to use the filing system, the records manager was of the opinion that less focus on digital records management training posed a challenge to the new system. Personal observation revealed that there is lack of skills in this area despite efforts to train staff.

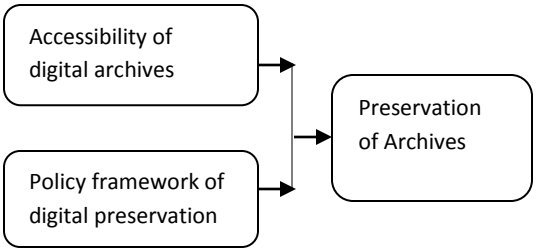
A review of literature by IRMT (1999) indicated that lack of training in governments affects the operations for effective digital records management. The study adopted a case study approach. Further the study adopted a mixed method approach by using quantitative and qualitative methods to examine how digital records are managed in the Office of the Premier (OTP). Triangulation was achieved in this study by using interviews, questionnaires and nonparticipant observation as data collection

techniques. Data analysis was by thematic categorization based on objectives.

The study recommends that there is a need for a dedicated section/unit with the responsibility for the management of digital records. The unit should also be responsible for the formulation of standards, coordination, monitoring and evaluation of all Digital Record Management (DRM) initiatives in the OTP. Also, the study further recommends tightening the current security and preservation practices of digital records in the OTP. There should be distinction between the physical and content security and preservation of digital records.

Finally, the study recommends that the office of the Chief Information Officer should spearhead the formulation and implementation of a policy as well as rules and regulations to govern the security and preservation of digital records. Therefore, the above recommendation of physical & content security and policy formulation forms part of the objectives that this study seeks to unearth the underlying reasons and thus this study examine the status of digital preservation of corporate archives at Kenya Power Limited.

Conceptual Framework



Independent variables **Dependent variables**

Figure 2: Conceptual Framework

Accessibility

The essence of digital preservation is largely to enable decision-making in the future. Should an archive or library choose a particular strategy to enact the content and associated metadata must persist to allow for actions to be taken or not taken at the discretion of the controlling party. Archives strive either analog or digital to maintain records as trustworthy representations of what was originally received. Smith (2012) defined authenticity as the trustworthiness of a record as a record; i.e., the quality of a record that is what it purports to be and that is free from tampering or corruption. Authenticity of records should not be confused with accuracy; an inaccurate record may be acquired by an archives and have its authenticity preserved. The content and meaning of that inaccurate record will remain unchanged. A combined effort of organizational of policies, security procedures, and documentation can be used to ensure and provide evidence that the meaning of the records has not been altered while in the archives' custody.

Digital Preservation Policies

A digital preservation policy provides the framework for action and planning to ensure the long-term maintenance and preservation of an organization's records. Following a digital preservation policy through the records' active life will facilitate preservation over the long-term for inactive records; whether it is the creator who preserves the records, or a trusted third party. Lyman & Besser (1998) noted that, the long term preservation of information in digital form requires not only technical solutions and new organizational strategies, but also the building of a new culture that values and supports the survival of bits over time.

Also, Beagrie, Semple, Williams & Wright (2008) reinforced the idea that any long-term access and future benefit may be heavily dependent on digital preservation strategies being in place and underpinned by relevant policy and procedures and that the digital preservation policy should be integrated into business drivers, activities and

functions e.g. regulatory compliance, staff development, applied technology and academic excellence. The Electronic Resource Preservation and Access Network's (ERPANET) (2003), states that a preservation policy forms the pillar of a programme for digital preservation. It gives general direction for the whole of an organization, and as such it remains on a reasonably high level. From an external point of view, a written policy is a sign of goodwill that the organization takes the responsibility to preserve digital material. Cloonan & Sanett (2002) noted that the lack of preservation policies in place is a distinct gap in the research design of many of the projects and possibly reflects a lack of commitment among the stakeholders in institutions.

The role of digitization in the preservation of archives

Digitization is often seen as the more glamorous mainly because of its various benefits. These include:

Reduced time of retrieval/ Increased productivity- Using retrieval tools such as databases and indices, it possible to have faster access to the information than the traditional eye-on-paper scrolling through a hard-copy finding aid. With a well-executed digitalization process, this can be reduced to a few seconds or less. Digital records allows the stake holder ability to share, collaborate, exchange and access documents in seconds, reducing the turnaround time further increasing the efficiency for your business (Sampson, 1992); Multiple access points - Retrieval tools also increase the number of ways one can approach a record e.g. using a database one could search for a record using a creator's name, file name or date of creation (Egbuji, 1999); Preservation of fragile hard-copy records - A digitized electronic copy could be made available to users as many times as necessary allowing fragile paper copies of records to remain safely in the institution's custody under ideal environmental conditions (Mnjama and Wamukoya, 2006) and Enhanced information preservation - Another benefit is the ability to have enhanced digitized copies of hard copy records. An example of this is what has been done at the United States National Archives and Records Administration where the nation's most important document, the Declaration of Independence has in its digitized form been significantly enhanced allowing a much clearer image of an otherwise deteriorating document from the 18th century (Green & Courtney, 2016).

Challenges in preservation of digital archives

Despite the benefits ensued in digitizing analog materials and preserving the same, it is not without challenges. The main challenges include human error, data loss, fading memory, lack of effective education, and technological obsolescence (Kastellec, 2012). The greatest limitations to digital resources are both human and machine dependent despite the availability of mobile technology and hardware devices (Moghaddam, 2010).

Knowing what to preserve and the best method to use, is a major concern for professionals and one that requires specialized training. Technological Challenges - Technological changes such as fragility of media, file deterioration, and hardware and software obsolescence are major challenges to viable digital records management programmes. Without suitable storage conditions, they will deteriorate (Kirkwood, 1994); Digital media - Digital materials are especially vulnerable to loss and destruction because they are stored on fragile magnetic and optical media that deteriorate rapidly and that can fail suddenly from exposure to heat, humidity, airborne contaminants, or faulty reading and writing devices (Hedstrom & Montgomery, 1998). Digital media are subject to destruction and deterioration in new ways, though unintended loss can be avoided if procedures are adapted to the needs of the technology; Changes in technology - Unlike the situation that applies to analog materials such as books, digital archiving

requires relatively frequent investments to overcome rapid obsolescence introduced by galloping technological change (Feeney, 1999). Digital materials cannot be accessed unless there is appropriate hardware, and associated software which will make it intelligible because they machine dependent and Authenticity and context - The authenticity and reliability of electronic archives are often questioned because of possible changes to content or structure. At each stage of the cycle, digital archives need to be actively managed according to established procedures, to ensure that they retain qualities of integrity, authenticity and reliability (PRO, 1999). Records management systems need to be able to link to essential contextual information regarding the business procedures of the creating agency. Authenticity and integrity of digital resources can be equally important in other sectors such as scholars need to experience confidence that references they cite will stay for longer period of time. Also, courts of law need to be assured that information material can withstand legal evidential requirements and finally the government agencies may as well have legally enforceable requirements regarding authenticity.

METHODOLOGY

The study adopted a mixed approach. This is because the study was used to gain an understanding of underlying reasons, opinions and motivations behind the status of digital preservation of archives at KPL. It provided insights into the problem and helped to develop ideas or hypotheses for potential quantitative research.

FINDINGS

Accessibility of Digital Archives

The study sought to find out the accessibility of the digitally preserved archives at KPL. Majority of the respondents 38.2 percent said that they provided access to the digital records via internet, 32.7 percent stated that they provided access to the digital records in CD or DVD in the search room, 25.5 percent noted that they provided access to the digital records in online searches in the search room from server storage/tape library, while 3.6 percent acknowledged others (the use of E-mails). Table 1 illustrated the findings of the study.

Table 1: Provision of Access

Access	Frequency	Percentages
CD or DVD in the search room	18	32.7
Online in the search room from server storage/tape library	14	25.5
Via internet	21	38.2
Others (E-mails)	2	3.6
TOTAL	**55**	**100**

The study revealed that the organization appreciates records as key drivers in various business activities hence the diverse access provision. In light of the above mediums of communication, KPL should consider the adoption and appropriateness of emerging trends in communication such as social networking sites (Twitter, Face book and blog) to provide access.

Type of Access Allowed

The study sought to find out the kind of access that was allowed on digital records held by KPL archive services. The findings of the study revealed that 54.5 percent was granted full access, 36.4 percent partial access while 9.1 percent stated no access was allowed on some of digital records. From the findings of the study, it was evident that KPL had focused on

security grading and classification of information and records hence the different levels of access provided by the organization.

Determinants of Digital Access

The study further sought to establish the determinants of the type of access allowed on digital records held by KPL archival services. The findings of the study revealed that 45.5 percent was based on sensitivity of the archived information, 36.4 percent confidentiality of the archived information while 18.1 percent was the reason for access of the archived information. The study revealed that KPL had embraced different level of access depending on the nature of the assignment and portfolio one holds in the RM department. To ensure security of records, unauthorized access in which the integrity, reliability and confidentiality of digital records could be compromised has been considered by assigning RM staff with personalized log in credentials such as user name and password.

Digital Preservation Policies

The study sought to find out the policies relating to digital preservation of archives at Kenya Power Limited. The respondents were asked whether there were any policies that had been developed to regulate the preservation of digital archives at Kenya Power Limited. The results were that 81.8 percent KPL had policies while 18.2 percent stated none. The findings of the study established that KPL has policies relating to DRM though they are inadequate in handling digital preservation. Also, high level of awareness of existence of policies at KPL was attributed to current communication technologies such as emails, intranet and circulars.

Types of Policies

The respondents who stated that KPL had developed policies that regulated the preservation of digital records and archives were further asked to state those policies. The findings of the study revealed that majority of them 49.1 percent stated authorization policies that determined who accessed what and the magnitude of modification one could do, 29.1 percent noted staff development policies that ensured that all the staff in IT and record department had the relevant competence and skills as well as acquired adequate knowledge on record preservation through on-job trainings, 18.2 percent revealed policies that related to application of latest technology in preservation of information while 3.8 percent stated other policies like regulatory compliance policy. Table 2 showed the findings of the study.

Table 2: Digital Preservation Policies

Policies	Frequency	Percentages
Authorization policies	27	49.1
Application of latest technology	10	18.2
Staff development policies	16	29.1
Others	2	3.6
TOTAL	**55**	**100**

The findings of the study revealed that KPL has numerous policies relating to DRM but doesn't have a specific policy on digital preservation of archives thus there is need for policy formulation and implementation. Also, the study established that KPL has DRM related policies that are inadequate in handling digital preservation.

Awareness of Digital Preservation Policies

The study further sought to establish whether all staff members were aware of the digital preservation policies of the organization. The findings of the study revealed that only 63.6 percent of the staff agreed that all the staff members were aware of the digital

preservation policies of the organization while 36.4 percent stated that all the staff members were not aware of the digital preservation policies of the organization. The study revealed that there was high level of awareness of the policies in place such as authorization and staff development as a result of employment of current communication technologies such as e-mails, intranet and circulars. However, the staffs were not aware of the digital preservation policy.

Channels of Awareness

The respondents were also asked to state how the staff members of KPL were made aware of the digital preservation policies of the organization. Majority of (45.5 percent) the respondents said that the staff members of KPL were made aware of the digital preservation policies of the organization through E-mails, 27.2 percent circulars, 18.2 percent intranet while only 9.1 percent stated others. The findings indicate that communication of policies in the organization is very effective and KPL has adopted new modes communication such as emails and internet. However, though yet to fully integrate emerging communication media such as social networking sites (face book, twitter and blogs) as part of the communication strategy within the organization.

Disaster Recovery Plan

The respondents were asked whether KPL had a disaster recovery plan for digital records management. Majority of the respondents 43.6 percent said that the organization had a disaster recovery plan, 30.9 percent noted that the organization had no disaster recovery plan while 25.5 percent of the respondents had no idea whether their organization had a disaster recovery plan for digital records management. The study established that majority of the respondents (43.6%) were convinced that the organization had a disaster recovery plan though under review in order to cater for new formats of records. It was also noted that KPL has a disaster recovery plan in place thus retrieval of information should the system crash. The findings conformed to a research done by Tshotlo & Mnjama (2010) that a disaster preparedness plan is an important tool central to the protection and preservation of records, and it should be incorporated into the overall management plans of the organization.

CONCLUSION

The study concluded that digitization plays a significant role in the preservation of corporate archives. The findings of the study confirmed that the respondents were aware of the role digitization play in the preservation process. The study revealed that digitization is beneficial because it possible to have faster access to the digitized information than the traditional eye-on-paper scrolling through a hard-copy finding aid. Also, KPL has embraced digitization because it enhances simultaneous access because when using a database one could search for a record using a creator's name, file name or date of creation.

According to this study, KPL allowed access to digitally preserved archives via internet, CD or DVD and online searches in the search room. Access level allowed was either full access, partial access as well as no access depending on sensitivity and confidentiality of the archived information and reasons for access of the archived information.

The study concluded that KPL had established policies that regulated the preservation of digital records and archives. These policies included; authorization policies, staff development policies, disaster recovery plan policy, application of latest technology in preservation of information as well as regulatory compliance policy.

The findings of the study revealed that KPL had adequate security measures. This was attributed to measures put in place by the organization such as; data and database security, procedural security, system security that protected its software applications and operating systems as well as having data back-up.

Finally, the study identified numerous challenges surrounding digital preservation as follows; inadequate funding, obsolete hardware and software, insufficient ICT facilities and fragile storage media that break easily leading to loss of data as well as inadequate expertise and shortage of DRM Skills.

RECOMMENDATIONS

The study revealed that staff members of KPL were made aware of the digital preservation policies of the organization through E-mails, circulars and intranet thus it was established that ICTs facilitated communication in KPL effective service delivery.

The study recommends that the existing policies should be reviewed to ensure access level; competences and regulatory compliance of the digital records are met. The study found out that KPL had inadequate expertise and shortage of DRM Skills thus the study recommends that Chief Manager Human Resource and Administration should develop a detailed training plan needs around the needs of the department. The board of management must ensure that financial resources are available to support the training needs as well as facilities that could enhance digital records management programme.

The study also recommended that KPL should sponsor RM staff to get formal training of digital records management (DRM) Skills in some of the institution of higher learning offering RM courses such as Moi University, Kenya Methodist University, Technical University and Kenyatta University so as to bridge the gap posed by advancement of the technologies that generate digital records.

Therefore the study recommended that Chief Finance Manager should allocate adequate funds for purchase of computers, software and training of staff to improve their competence particularly in digital preservations of archives to improve service delivery.

Digital Preservation Strategies

Migration strategy enables given formats such as WordPerfect's, Microsoft Excel's, and Microsoft word among others to be migrated to other formats and stored. It helps to preserve the integrity and usability of digital records and to retain the ability for the users of digital records and archives to be able to retrieve, display, and use them in the face of constantly changing technology. Migration provides periodic transformation of files to new digital formats to ensure continuing compatibility between file formats and applications. They also design utilities to migrate data types. On the other hand migration set up a chain that must be extended over time, because every format will eventually become obsolete. Therefore, KPL ought to develop and implement a migration strategy regulated through an institutional migration policy.

Suggestions for Further Studies

The current study was to investigate the role of digitization in the preservation of corporate archives at Kenya Power Limited therefore further research should be conducted on the capacity building strategies to manage digital records in government departments and to establish how both private and public organizations identify cost model factor in digital preservation projects.

REFERENCES

Babbie, Earl R. (2010) The Practice of Social Research. 12th ed. Belmont, CA: Wadsworth Cengage; Muijs, Daniel. Doing Quantitative Research in Education with SPSS. 2nd edition. London: SAGE Publications, 2010.

Bak, N. (2004). Completing your thesis: A practical guide. Pretoria: Van Schaik Publishers.

Bakken, D. (1982). Corporate archives today. The American Archivist, 45(3), 279-286.

Bantin, J. & Agne, L. (2010). Digitizing for Value: A User-Based Strategy for University Archives, Journal of Archival Organization, 8 (3-4), 244-250.

Beagrie, Neil; et al (2008), A Strategic Policy Framework for Creating and Preserving Digital Collections. Version 5.0.

Beedham,H. Missen, J. Palmer, M & Ruusalepp, R (2004). Assessment of UKDA and TNA compliance with OAIS and METS standards. Accessed on 6th December 2017 from http://www.jisc.ac.uk/uploaded_documents/oaismets.pdf

Berger, M. (1999). Digitization for preservation and access: a case study. Library HiTech. 17(2), P.146

Besser, D. (1998). Addressing selection and digital preservation as systemic problems. In Y. de Lusenet and V. Wintermans (Eds.) Preserving the Digital Heritage: Principles and Policies, 26-44.

Besser, Howard (1998). The Changing Role of Photographic Collections with the Advent of Digital Preservation Europe. DPE Research Roadmap, DPE-D7.2.

Borg, W. R., & Gall, M. D. (2003). Educational Research: An Introduction (Fifth ed.).New York: Longman.

Burns,N & Grove,S. (2003). The Practice of Nursing Research Conduct, Critique and Utilization (4th ed). W.B.Saunders: Philadelphia, Pennsylvania. USA

CCSDS (Consultative Committee for Space Data Systems). (2002). Reference Model for an Open Archival Information System (OAIS). Blue Book, Issue 1. Washington, DC (US): CCSDS.

Cochran, W. G. (1999). Sampling Techniques. John Wiley & Sons, Inc., New York, NY.

Cochran, W. G. (1977). Sampling Techniques. 3rd Edition. Wiley: New York

Conway, P. (2010). Preservation in the age of Google: Digitization, digital preservation, and dilemmas. Library Quarterly, 80(1), 61-79.

Chowdhury, G. & Chowdhury, S. (2003). Introduction to digital libraries. Facet, University of Michigan.

Creswell, J. W., & Plano Clark, V. L. (2011). Designing and conducting mixed methods research (2nd ed.). Thousand Oaks, CA: Sage Publications, Inc.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. Psychometrika, 16, 297-334.

Currall, J. E. P., & Moss, M. S. (2010). Digital asset management. In M. J. Bates(Ed.),Encyclopedia of library and information sciences(3rd ed., pp. 1528-1538).

Delany, P. & George P. L. (1994). Hypertext, Hypermedia and Literary Studies: The State of the Art.In Hypermedia and Literary Studies. Cambridge and London: MIT P, 991, pp. 3-50.

Dellinger, A.B. (2005). Validity and the review of literature. Research in the Schools, 41-54.

Dellinger, A.B., & Leech, N.L. (2005). Towards a unified validation framework in mixed methods research. Journal of Mixed Methods Research, 309-332.

Ding, C. M. (2000), Access to Digital Information: Some Breakthrough and Obstacles, Journal of Librarianship and Information Science, Vol.32 No.1

Egbuji, A. (1999). Risk management of organizational records. Records management journal 9 (2):93-116.

ERPANET (2003), The Selection, Appraisal, and Retention of Digital Scientific Data, Glasgow: EPRANET. Retrieved on December 7, 2016 from the http://www.erpanet.org/www/products/lisbon/LisbonReportFinal.pdf.

Feeney, M. (1999). Digital Culture: Maximizing the Nation's Investment. London: The National Preservation Office.

Freeman, R. & Haddow, G. (2008). Research Skills in the Social Sciences: Data Collection. Accessed on September 9, 2017 from http://www.sps.edu.ac.uk

Fidel, R. (2008). Mixed Method research in Library and Information.

Fraenkel, R. J., & Wallen, E. N. (2000). How to design and evaluate research in education (4th ed.). San Francisco: McGraw-Hill.

Fraenkel & Wallen (1993), How to Design and Evaluate Research in Education. New York; McGraw-Hill

Gertz, Janet (2005), Selection Guidelines for Preservation, Joint RLG and NPO Preservation Conference, Guidelines for Digital Imaging.

Getz, McKinley (1997). Evaluating digital strategies for storing and retrieving scholarly information. Journal of Library Administration, 24, (4), 81-98.

Guenther, R. (2009). Understanding and Implementing the PREMIS Data Dictionary for Preservation Metadata.

Gladney, H. M. (2009). Long-term preservation of digital records: Trustworthy digital objects. The American Archivist, 72(2), 401-435.

Green, H., & Courtney, A. (2016). The role of digital collections in scholarly communications. In Archiving 2016 - Final Program and Proceedings (pp. 193-196). Society for Imaging Science and Technology.

Greenwood, D. & Levin, M. (2016). Introduction to Action Research: Social Research for Social Change. Thousand Oaks, CA: Sage.

Hedstrom M., Lee C., Olson J., & Lampe C. (2006). The Old Version Flickers More: Digital Preservation from the User's Perspective. The American Archivist: Spring/Summer, Vol. 69, No. 1, pp. 159-187.

Hedstrom M. & Sheon M. (1998), Digital Preservation Needs and Requirements in Research Libraries Group Member Institutions. Mountain View, California. USA

Holloway, I., wheeler, s. (2002) Qualitative Research in Nursing (2nd ed). Oxford: Blackwell.

Yin, R.K. (2009). Case study research: design and methods. 4th ed. Thousand Oaks: Sage publication.

Hunt, N. & Tyrell, S. (2001). Stratified sampling. Coventry University Press. 30TU http://www.coventry.ac.uk/ec/~nhunt/meths/strati.html30T (accessed February 28, 2016)

Ian, H. Witten & David, Brainbridge. (2003), How to Build a Digital Library, London: Morgan Kaufman Publishers.

International Records Management Trust. (2006). Implementing Electronic Records Management. Training in Electronic Records Management.

IRMT (1999). Preserving Electronic Records.7 Hatton Garden. London EC1N 8AD.UK.

Jantz, R., & Giarlo, M. J. (2007). Digital preservation: Architecture and technology for trusted digital repositories, 34.

Jantz, R., & Giarlo, M. J. (2005). Digital preservation: Architecture and technology for trusted digital repositories. *Microform & imaging review*, *34*(3), 135-147. Lor J. P., (2005). Preserving African digital resources: is there a role for repository libraries? Library Management, 26(1/2), 63–72.

Kader, Parahoo. (1997). Nursing Research: Principles, Process and Issues. Basingstoke: Macmillan.

Kamatula, G.A. (2010). E-government and e-records challenges prospects for African records managers and archivists. ESARBICA Journal 29:160-181.

Kaniki, A. (1999). Doing an information search. In: Terre Blanche, M. & Durrheim, K. (eds). Research in practice: applied research for the social sciences. Cape Town: University of Cape Town. Pp.17- 28. Leedy & Ormrod (2001)

Kathurima, A. (2012). Records Management and Implementation of ISO 9001:2000 at the Kenya Power and Lighting Company Headquarters.

Kemoni, H.N. (2008). Theoretical framework and literature review in graduate records management research. African Journal of Library, Archives and Science. 18(2):103-17.

Kemoni, H. & Wamukoya, J. (2000). Preparing for the management of electronic records at Moi University, Kenya. African Journal of library, Archives and Information Science. 10 (2):125-138.

Kirkwood, C. (1994). Records management in the public sector and archival challenges posed by electronic records. South African Journal 36: 7-16.

Kothari C. R. (2004). Research Methodology Method and Technique, New Age International Publishers.

Kraetzer, M. S., C., N. Specht, J. Dittmann, & C. Vielhauer. (2010). Ensuring Integrity and Authenticity for Images in Digital Long-Term Preservation, Proc. of Optics, Photonics and Digital Technologies for Multimedia Applications. Europe: SPIE Photonics.

Krejcie,R. & Morgan, D.(1970), Determining Sample Size for Research Activities, Educational and Psychological Measurement.

Lavoie, B. & Gartner, R. (2013), Preservation Metadata (2nd edition), Digital Preservation Coalition, York.

Leedy, P. D. & Ormrod, J. E. (2001). Practical research: planning and design. 7th ed. New Jersey: Merrill Prentice Hall.

Lessler, J. T., & Kalsbeek, W. D. (1992). Non sampling error in surveys. New York: Wiley.

Lewis-Beck, M.S. (1995). Data analysis: an introduction. London: Sage.

Lichtman, M. (2006). Qualitative research in education: A user's guide. London: Sage Publications.

Lor, P.L. (2005). Preserving African digital resources: is there a role for repository libraries? Library management. 26(I/2):63-72

Lohr, S. (1999). Sampling: Design and Analysis. Duxbury: Pacific grove, CA.

Lynch, C. (1999). Canonicalization: a fundamental tool to facilitate preservation and management of digital information. D-Lib Magazine, 5(9).

Mezbah-ul-Islam, M. (2012). Digital preservation: idea flash. In Library Planning and Management: Training Manual, Part-3, Dhaka: NAEM, Ministry of Education, pp.130-133.

Michèle V. C. & Shelby S. (2002), Preservation Strategies for Electronic Records: Where We Are Now Obliquity and Squint?" The American Archivist 65.

Miles M.B & Huberman A.M. (1994). Qualitative data analysis: An Expanded Sourcebook 2nd ed. Thousand Oak. CA: Sage.

Moghaddam, G. G. (2010). Preserving digital resources: Issues and concerns from a view of librarians. Collection Building, 29(2), 65-69.

Moloi, J. & Mutula, S. (2007). E-records management in an e-government setting in Botswana. Information Development, (23)4:290-306.

Morris, Sammie L. (2005). Preservation Considerations for Digitization of Archival Materials. Libraries Research Publications, Paper 14.

Mouton, J. (2002). Understanding Social Research, Pretoria Hatfield: Van Schaik.

Mugenda M. O. & Mugenda A. (2004), Research Methods: Qualitative and Quantitative Approaches, African Centre for Technology Studies, Nairobi, Kenya.

Mugenda, M. O & Mugenda, A. (2003). Research Methods: A Quantitave and Qualitative Approach .Nairobi: ACTS press.

Mugenda, O. M. & Mugenda, A. G. (1999). Research Methods: Quantitative and Qualitative Approaches. Nairobi: Acts Press.

Murthy, S. (2005). Digitization: a practical experience at the National Tuberculosis Institute, Bangalore. Information studies,11(2): 109-110.

McDonough, J. (2006), 'METS: Standardized encoding for digital library objects', International Journal on Digital Libraries 6, 148–158.

Munetsi, N. (2011). Investigation into the state of Digital Records Management in the Provincial government of Eastern Cape: a case study of the Office of the Premier.

Mnjama, M. N. & Wamukoya, J. (2006). E-governement and record management: an assessment tool for e-records readiness in government.

Nachmias, F (1996). Research Methods in the Social Sciences Oaks: Sage publications

Neuman, L.W. (2003). Social research methods: qualitative and quantitative approaches. Bonston: Pearson Eduacation

Neuman, W. (2006). Social research methods: Qualitative and quantitative approaches, 6th ed. Boston, MA: Pearson Education.

Ngoepe, M.S. (2008). An Exploration of Records Management Trends in the South African Public Sector: A Case Study of the Department of Provincial and Local.

Ogula, P. A. (2005). Research Methods. Nairobi: CUEA Publications.

Owens, L. K. (2002). Introduction to Survey Research Design. SRL Fall 2002 Seminar Series. Retrieved August 31, 2016 from http://www.srl.uic.edu

O'Leary, Z. (2004). Working with the literature. In the Essential Guide to Doing Research.Sage.

Patton, M. (1987). How to use qualitative methods in evaluation. Sage Publication, California, pp: 18-20

Paul, W.L., Taylor, P.A., (2008). A comparison of occupant comfort and satisfaction between a green building and a conventional building, Building and Environment, Vol 43, p. 1858-70

Peter S. G., (2000). Issues in Digital Archiving. Preservation: Issues and Planning, Paul N. Banks and Roberta Pilette, eds.

Polit, D. F & Hungler, B. P. (1999). Nursing research: Principles and methods. 6th edition. Philadelphia: Lippincott.

Polit, D. F. Beck, C. T. & Hungler, B. (2001). Essentials of Nursing Research: Methods, Appraisal and Utilization 5th ed. Philadelphia, PA, Lippincott.

Popper, M. & Millar, L. (1997). Managing Electronic Records. IRMT: London.

Potter, C. (2003). De Smet, Dakota Territory, Little Town in the National Archives. Prologue: The Quarterly Journal of the National Archives and Records Administration 35:4.

Ronald, J. & Michael, J., (2005). Digital Preservation. Architecture and Technology for Trusted Digital Repositories. D-Lib Magazine, Vol. 11 no. 6.

Sampson, K.L. (1992). Value-added records management: protecting corporate assets and educing business risks. London: Quorum books.

Sawyer, D. & Reich, L. (2002). "ISO 'Reference Model for an Open Archival Information System (OAIS): Tutorial Presentation'" PowerPoint presentation.

Smith, P.A. (2012). Introduction to Records Management. Australia: Macmillan Education.

Smith, K. 2007. Planning and implementing electronic records management: a practical guide. London: Facet Publishing.

Sproul , N. L. (2005). Handbook of Research Methods: A Guide for Practitioners and Students in the Social Sciences, 1st edn., The Scarecrow Press, NewYork, USA.

Tafor, V. (2003). Digital technology-understanding the problems by information technology in generating and managing records from a third world perspective. *ESARBICA Journal* 22:72-76.

Tshotlo, K. & Mnjama, N. (2010). Records management audit: the case of Gaborone city council. ESARBICA Journal. 29:5-35.

Wato, R. (2004). Challenges of archival electronic records: the imminent dangers of a 'digital dark age'. ESARBICA Journal 23: 108-122.