PRESERVATION OF ELECTRONIC RECORDS IN SELECTED FEDERAL UNIVERSITIES IN NIGERIA

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ABSTRACT

The paper examines how federal universities in Nigeria preserve their electronic records, including e-records preservation strategies, ICT skills of staff and ICT facilities that are available for e-records preservation. The study adopted quantitative approach through cross-sectional survey design to administer questionnaire on the population of one hundred and fifty one (151) staff of the Management Information System/Registry departments drawn from twelve (12) Federal Universities. Eighty four (84) staff were used as the subject for the study. Descriptive statistics was used to analyse the data collected for the study. The study found that Federal Universities in Nigeria were not preserving their electronic records effectively due to lack of ICT facilities, technical skills of staff and e-records preservation policy. The study also found that staff preserving e-records had never attended any form of staff training and development programme. The study recommends the establishment of policy framework on e-records preservation, provision of adequate and up to date ICT facilities, training of e-records personnel, provision of e-records management framework and infrastructure. The originality of the study lies in its ability to exposed Nigerian Universities to the global best practices in e-records preservation.

Keywords: E-records preservation, E-records management, ICT, Archival management, Records management, Nigeria

Introduction

Records consist of documented information in any format. The term record comes from the Latin word recordari which means recalling or to remember or bring back to mind and this is exactly what records do (Pember & Cowan, 2012). Without records, no assessment can be made of individuals, private and public organizations. Records enable organizations to meet legal, regulatory and financial requirements and protect their assets and rights. They help to support the expectation of a democratic society for transparency and accountability and also protect citizen's rights. However, in order to realize the above objectives, these records must be identified, organised, preserved and managed according to records management principles. Efficient records and archives management provides reliable information that may be inevitably needed for the effective functioning of any organisation. The basic objective of records management programme is to manage records throughout their life cycle.

Electronic records are information generated electronically and stored by means of computer technology. They are fragile in nature due to change in the hardware and software used for their creation, storage, processing and use, making them prone to high risks. If damaged or deteriorated, restoration is a difficult task, if not impossible. Electronic records have a short life expectancy dependent on the average service life of the hardware and software required to read and process them. Hence, the proportion of

information on electronic media is increasing exponentially and modern technology is rapidly changing the way governments, institutions, organizations and individuals conduct their businesses, thus altering the nature of records and archives being created. In Nigerian universities, the situation is the same. With the increasing use of computers and other information and communication technology (ICT) infrastructures and the ongoing office automation and digitization projects, electronic records are being generated.

Electronic records preservation on the other hand, is the planning, resource allocation and application of preservation methods and technologies necessary to ensure that digital information of continuing value remain accessible and usable (Johnson, 2013). According to Franks (2013), digital preservation is a process by which digital data is preserved in digital form in order to ensure the usability, durability and intellectual integrity of the information contained therein. It is the process and activities which stabilize and protect reformatted and digital authentic electronic records in forms, which are retrievable, readable, and useable over time (National Archives and Records Service of South Africa, 2006). The preservation of electronic records, born digital or migrated to digital environment, is an essential component in records management.

Electronic records are susceptible to deliberate or accidental deletion and the medium on which the information is stored, is fragile. Saffady (2014), IRMT (2012) and Rachel (2010) concur that the long-term preservation of electronic records is being threatened by certain factors such as Media instability and deterioration and Obsolescence and incompatibility of hardware, software, data formats or storage media among others. It is widely agreed that this state of affairs is worldwide but worse in developing countries for the following reasons:

1. Low status accorded to records and archives management.

2. Absence or weak legislative and policy frameworks for electronic records management.

3. The absence of and difficulty in applying technical and operational standards for the creation, management and preservation of electronic records.

4. Lack of adequate training and education in information technologies (IT) and electronic records management (Stephens, 2011).

The present study investigates how federal universities in Nigeria preserved their e-records through quantitative approach.

Research Questions

The study was designed to answer the following research questions:

1. How do the federal universities in Nigeria preserve their e-records?

2. What types of ICT facilities are used in preserving e-records in the universities under study?

3. What is the level of ICT skills of MIS/Registry staff on the preservation of e-records?

4. What are the challenges associated with the preservation of e-records in the federal universities in Nigeria?

5. What are the measures taken to overcome the identified challenges on the preservation of e- records in the universities studied?

Review of Related Literature

A records management policy is the foundation of the effective preservation of records in an organization. It demonstrates to staff and the management that managing records is important to the

organization. It also provides a statement of intentions that underpins a records management programme. Furthermore it serves as a mandate for the activities of the records manager and also provides a framework for supporting documents, such as procedures, business rules, disposal schedules, etc. Policies, however, give organizations both public and private the strategic directions it requires to initiate measures, which are necessary for the creation, management and protection of organization records. Dearstyne (2014) further explained that policies assist archival institutions to understand the physical needs of records and to meet, or extend, nationally and internationally agreed standards for the preservation of records and archival materials. At the same time, a policy reminds the formulators of the constraints they must all accept if important records are to be saved for present and future generations. Ranson (2015) provided a definition of policies as:

> Policies are statements that are typically expressed both in utterance and
> textual form. They have a distinctive and formal purpose for organizations and
> governments; to codify and publicise the values, which are to inform future practice
> and thus encapsulate prescription for reform. Policies are oriented to change and
> action, providing public intent of transforming practice according to ideal values (p.15).

Federal universities in Nigeria are expected to develop a policy framework on the management of e-records in line with the National policy on e-records management. Literature search indicated that there was no national policy on the management of e-records in Nigeria. Such policies if available might contain explanations of how best to retain e-records, appraise, organise and preserve e-records. The policy will also explain how to manage database, data files directories, and use e-records efficiently. However, a good policy should cover all records, whatever technology used to create and store them. It should also include business systems as well as traditional correspondence files and emails. The policy should also cover records throughout their life, from planning and creation through to disposal. It should include records wherever they are and should also cover records managed on behalf of the organisation by an external body, such as a contractor. The absence of a records management policy in Nigerian Universities affects the way records are preserved. There is no standardized records retention schedule available in the universities (Asogwa, 2012).

On the other hand, e-records preservation is the planning, resource allocation and application of preservation methods and technologies necessary to ensure that digital information of continuing value remain accessible and usable (Johnson, 2013). According to Franks (2013), e-records preservation is a process by which digital data is preserved in digital form in order to ensure the usability, durability and intellectual integrity of the information contained therein. It is the process and activities which stabilize and protect reformatted and digital authentic electronic records in forms, which are retrievable, readable, and useable over time (National Archives and Records Service of South Africa, 2006). The purpose of e-records preservation is to ensure that records remain accessible over time in such a way that they can be considered authentic and reliable evidence. Not only must records be accessible, but their intrinsic value must also be retained.

For federal universities in Nigeria to achieve these, they need to develop e-records preservation strategy to enable them preserve their e-records. An effective electronic records preservation strategy will enable the universities to ensure that their electronic records are maintained and sustained in an accessible format as long as a need for those records exists. The strategy will provide the mechanisms to ensure that those electronic records of current and continuing future value to the Universities are maintained in a way that will both preserve their value and include appropriate access arrangements to them. Furthermore, the

strategy will allow the Universities to meet their business needs and as a result will help them to run more efficiently. It is more costly to reproduce records that were not preserved and then subsequently needed than it is to preserve records that are never required and can be disposed of after a set period of time.

Moreover, International Records Management Trust (2012) stated that there are two overarching approaches to the preservation of e-records: passive preservation and active preservation. Passive preservation is the process of ensuring continuing integrity of, and controlled access to, digital objects along with their associated metadata while active preservation seeks to ensure the continued accessibility of electronic records over time by actively intervening in how records are stored and managed. Active preservation involves 'moving' the digital object into a new storage environment, which may depend on new technologies that were not in existence when the object was originally created and used. Both passive and active preservation require that the integrity of the original digital object be protected. This integrity is protected either by preserving the original digital object just as it was when it was created or by recreating the essence of the object using new and different technologies from those originally used. (IRMT, 2012).

However, other e-records preservation strategy adopted by organisation is refreshing your e-records by copying data from one medium to another of the same type. During the process of refreshment, the hope is that the bits of data do not change. The purpose of refreshment is to replace data in one medium with a copy that is sufficiently the same that the data can continue to be accessed without difficulty. For example, refreshment may consist of copying membership lists from an old floppy disk onto a CD-ROM disk, so that the data can be accessed using the same database management software. Refreshing is necessary because storage media deteriorate and because the hardware needed to access and use data may change, meaning the storage media can no longer be used (Johnson, 2013). While refreshing is not supposed to involve changing the software used to read the data, it is often necessary not just to refresh data but also to migrate data to new systems in order to make it accessible with new computer programs.

Similarly, some organisations practices replication which is similar to refreshment, but with one difference: the location where the record is stored will likely be different when a file is replicated. Again, the goal of replication is to ensure the bits of data do not change. Data that exist in only one location are highly vulnerable to damage or loss. The software or hardware could fail; someone could alter or delete the files accidentally or intentionally or the data could be lost in a fire, flood or other environmental disaster. Replication helps to ensure the survival of information by storing the files in several different locations. Another strategy for preserving e-records adopted by organisation was migration; it involves the transfer of digital information from one hardware and/or software setting to another or from one computer generation to subsequent generations. It specifically addresses the issue of technological obsolescence. For example, moving files from Mac to a PC involves accommodating the difference in the two operating environments. Migration can also be format-based. An example of this would be the moving of image files from an obsolete file format to the most latest to increase their functionality.

Some institutions preferred emulation preservation strategy because it involves using of a computer device or software program to imitate the behaviours of another device or program, thereby obtaining the same results when accessing or using digital objects. Emulation strategies use software or hardware – called the emulator – to recreate the functionality of obsolete technical environments on modern computer platforms. During emulation, the bits of data are replicated and are not exactly as they originally were; the loss of information is a distinct possibility (Johnson, 2013) A study by Sejane (2005), Nengomasha (2009) and Asogwa (2012) on electronic records management in the public sector in Lesotho, Namibia and Nigeria, Electronic records management in the Namibian public service in the context of e-government and E-

records readiness in Federal Universities in Nigeria respectively, concluded that there are no written polices and guidelines with regard to technical [digital preservation] strategies. The studies, however, do not bring out the strategies if any being used in the Lesotho public sector and Namibian public service. This research aimed to identify any digital preservation strategies being used in the Universities in Nigeria and their effectiveness and, based on the literature and the situation on the ground, come up with recommendations on suitable strategies for federal universities in Nigeria.

Another issue of importance regarding the effective preservation of e-records in Federal universities in Nigeria is to do with the type and availability of ICT facilities used in the preservation of e-records. ICTs are instruments that facilitate communication and the processing and transmission of information by electronic means. ICTs embody a full range of old and new technologies such as radio, television, computers and Internet, telephones – both fixed and mobile, fax, printers, scanners and the print media (Luyombya, 2010). The ICT facilities that are use for electronic records creation, management and preservation include computers, software, printers, scanners, photocopiers, digital cameras, Air conditioners, telephones, internet connectivity, cassette and tape recorders, Decision support system (DSS), Electronic records management system (ERMS), Digital records object identification (DROID) and Online transaction processing system (OLTPS).

Other ICT facilities that were used to store data include: CD's, CD-Rom, DVD's, Blu ray, flash drives, memory cards, etc. However, Bantin (2002) identified Decision support system (DSS), Electronic records management system (ERMS), Digital records object identification (DROID) and Online transaction processing system (OLTPS) as the most suitable systems for processing e-records and documents. But most of these facilities identified by Bantin (2012) were not available in any federal university in Nigeria (Asogwa, 2012). There are also digital systems including networked and non-networked systems at different levels. It is possible to have distributed and decentralised networking systems existing simultaneously and managing information at different levels of sensitivity and security in separate network environments (Oboh, 2005). The digital revolution has led to increased electronic communication and increases in the quantity of the records created and maintained in electronic format.

It is important to note that IT infrastructure supports e-records preservation to enhance the access, transfer and facilitation of information. Asogwa (2012) describe the implication of the non availability of ICT facilities in Nigerian Universities that are ill-equipped or unprepared for electronic records management because these technologies were known to be good at 'supporting the needs for information, minimizing the amount of data stored in the system, improving efficiency of the system, removing obsolete data and providing effective way of managing e-records. ICT skills are a necessary requirement for effective e-records preservation in any organisation including federal universities in Nigeria. The dynamic nature of e-records management has implication on skills and competencies to effectively preserve e-records. Therefore, training and retraining should be an ongoing activity for all staff involved in the creation, preservation and management of records in one way or the other. Despite the advice by ISO 15489-1, on training and retraining of staff managing e-records, unfortunately those entrusted with "managing electronic records are not equipped with the necessary skills and knowledge, tools, and know-how to ensure that electronic records are preserved in a state that can be easily accessed and present as evidence" (Nengomasha, 2009).

This was supported by a study carried out by Mutula and Wamukoya (2009) on capacity-building requirements for e-records management in east and southern Africa. They reported on a dearth of skills on the preservation and management of electronic records and emphasized the "need for collaboration and

partnership in the areas of education and training, continuing professional development and the establishment of centers of excellence in e-records management and preservation. A study by Ngulube and Tafor (2006) also revealed the scarcity of skills in managing records, which has partly contributed to the poor management of paper records, leading them to query whether governments in sub-Saharan Africa would be able to handle the additional challenges posed by electronic records. Earlier, writers such as Akotia (2002), Katuu (2004), Keakopa (2006) and Mutiti (2001) had also observed the same situation. These authors call for training for records managers and archivists so that they are able to meet the challenges posed by electronic records. Scholar, such as Slavin (2002) and Nengomasha (2009) and the Deleware electronic records project underpin the need to train records managers with digital skills, so that the skills acquired may make them become either digital literate, digital competence or digital experts. Having any of the skills will enable them to understand:

   (1) Functional specifications for record keeping systems.
   (2) Functioning of records management software and access tools for electronic information.
   (3) Automated records descriptive practices.
   (4) Preservation issues associated with digital technologies.

A study conducted by Iwhiwu (2010) and Asogwa (2012) reported that e-records managers in federal universities in Nigeria are not adequately trained to acquire the necessary skills that will enable them managed and preserve their e-records effectively. The findings of their study revealed that majority of staff managing e-records were digital literate, meaning they possess the minimum skills required to manage e-records. This shows that there is the need for training and retraining for the staff to acquire higher skills to make them more relevant in their work place.

Methodology

The research adopted survey research design. The type of survey design employed is cross sectional. The use of cross sectional survey design is to allow for the collection of data through the use of a questionnaire. The adoption of cross-sectional survey design by the researcher was informed by the research objectives that collection of data for the study should be carried out at once. The use of survey design in this study was also justified in order to describe, compare, contrast, classify, analyse and interpret implications of the findings on the preservation of electronic records in selected federal universities in Nigeria. The study was carried out on employees working in the Registry/MIS Departments in twelve federal universities located in the six geo-political zones in Nigeria namely, Ahmadu Bello University, Zaria and Bayero University Kano (North west), Abubakar Tafawa Balewa University Bauchi and Modibo Adama Univeristy (MAUTECH) Yola (North East), the University of Abuja and Federal University of Agriculture Makurdi (North Central), University of Ibadan and Obafemi Awolowo University, Ife (South West), University of Nigeria Nsuka and Nnamdi Azikiwe University Awka, (South East) and University of Calabar and University of Portharcourt (South South).

The selection of the universities was arrived at on the basis of stratification according to geo-political zones. The researcher selected two (2) universities in each zone to allow for equal representation of the zones. The justification for using it was that the technique enabled the researcher to select some universities from the larger population, which was used to make generalization on the findings of the study. The choice of the Registry/MIS Department in these universities was because of their involvement in the creation, receipt, preservation, custody and use of the largest volume of university records. The population of the study comprised all the registry/MIS staff of the 1st, 2nd and 3rd generation of federal universities in

Nigeria numbering One Hundred and Fifty Nine (159) staff working in the MIS/registry units. Seven (07) staff's were selected in each University to answer the questions in the instrument, making a total of eighty-four (84). Simple random lottery method was used to draw sample from the larger population where each member of the population was given equal opportunity of being selected as subject.

Questionnaires were used as instrument for data collection and data was analysed using frequency tables. The researcher visited the selected universities to administers the instrument by himself this is because it will facilitate quick response and also clarify issues that are not clear with the respondents. To ensure the validity of the instruments developed and used, a complete package of the research instrument attached with the research objectives, statement of the problem and significance of the study were subjected to evaluation, criticism and scrutiny through face and content by experts in research, professionals in records management, e-records managers, ICT experts and database administrators. Moreover, the instrument was also subjected to face and content validity experts, library and archival management professionals. All the observations and corrections made by the experts were effected.

Results and Discussions of the Findings

A total of eighty-four (84) copies of questionnaires were administered to the respondents in the universities studied. Table 4.1 indicates the response rate according to the universities.

Table1 : Response Rate

S/N	Universities	Number of Questionnaires Administered	Number of Usable Returned	Percentage (%)
1.	ABU	7	6	86%
2	ATBU	7	7	100%
3	BUK	7	7	100%
4	FUAM	7	7	100%
5	MAUTECH, Yola	7	6	86%
6	NAU Awka	7	6	86%
7	OAU	7	7	100%
8	University of Abuja	7	7	100%
9	University of Calabar	7	7	100%
10	University of Ibadan	7	7	100%
11	University of Nigeria Nsukka	7	6	86%
12	University of PortHarcourt	7	7	100%
	Total	**84**	**80**	**95%**

Key:

ABU: Ahmadu Bello University, Zaria

BUK: Bayero University, Kano

ATBU: Abubakar Tafawa Balewa University.

MAUTECH: Modibbo Adama University of Technology, Yola.

UniAbuja: University of Abuja

FUAM: Federal University of Agriculture, Makurdi.

UI: University of Ibadan

OAU: Obafemi Awolowo University, Ile-Ife
UNN: University of Nigeria Nsukka
NAU: Nnamdi Azikiwe University, Awka
UniPort: University of PortHarcourt
UniCal: University of Calabar

Table 1 shows the response rate of the copies of questionnaire administered to the respondents. A total of 84 copies were administered to the respondents, out of which 80 (95%) were returned and found usable, while only 4 (5%) were not returned. The high response rate obtained for the study could be attributed to the persistent follow up made by the researcher and the research assistants during the process. This percentage is adequate enough for data analysis, as highlighted by Creswell (2009) that 50% of the response rate is good enough for any analysis in quantitative studies.

To find out how e-records are preserved in the Universities studied, the respondents were asked to indicate how they preserve e-records. Table 4.16 presents the responses of the respondents on the issue.

Table 2: Distribution of Respondents by E-Records Preservation

S/N	Preservation Strategy	Frequency	Percentage
1.	Migration	26	32.5%
2.	Replication	22	27.5%
3.	Refreshing	14	17.5%
4.	Emulation	10	12.5%
	Total	72	90%

The data from the table above indicated that 26 responses which are 32.5% from the universities use Migration as the best strategy for preserving e-records in their universities. While the second categories of respondent 22 which are 27.5% of the universities under study adopted replication strategy as the most appropriate means of preserving e-records. The findings of the study above is not surprising, because the migration process was the most effective and most reliable procedure of preserving e-records of archival value (Iwhiwhu, 2010).

Table 3: Distribution of Respondents on Responsibility of Preserving E-records

S/N	Personnel	Frequency	Percentage
1.	Office Clerk	05	6.25%
2.	Database Administrator	56	70%
3.	E-records Manager	14	17.5%
4.	No Response	05	6.25%
	Total	**80**	**100%**

The data on table 3 above showed that the database administrator representing 70% were mostly responsible for preserving e-records in the universities studied. Followed by E-records managers with 17.5% were also responsible for preserving e-records in some universities studied. This is because data base administrators in most organizations, including Universities, are trained to manage the organisation's network and are also professionally trained to control all e-records and data on their networks.

Types of ICT Facilities used in Preserving E-records
ICT facilities are essential elements in e-records management processes. The respondents were requested to indicate the availability of ICT facilities used in preserving e-records. Table 4 below presents the summary of their responses.

Table 4: ICT Facilities used in Preserving E-records

S/N	ICT Facilities used in managing E-Records	Total Responses of all the Universities	
		Frequency	Percentage
1.	Computers	70	87.5%
2.	Printers	60	75%
3.	Scanners	58	72.5%
4.	Software's	54	68.4%
5.	Internet connectivity	53	66.2%
6.	Photocopiers	46	57.5%
7.	CD's, DVD's, Blue Ray and Flash Drives	37	46.2%
8.	Digital Camera	20	25%
9.	Telephone	15	18.8%
10.	Barcode Encoder	7	8.8%
11.	Fax Machine	5	6.2%
12.	Electronic Document management System	0	0%
13.	Decision Support system (DSS)	0	0%
14.	Online Transactional processing system	0	0%

The data on table 4 above reveals that more than half, 70 (87.5%) of the respondents indicated using computers; 60 (75%), printers; 58 (72.5%) scanners; 54 (68.4%) software; 53 (66.2%), Internet connectivity; and 46 (57.5%), photocopiers. The findings indicate that the universities had many of these facilities, such as computers, printers, scanners, software's, Internet connectivity and photocopiers which were used in managing e-records. However, the data also reveals the least facilities available and used in managing e-records in the universities were CD's, DVD's, Blue Ray and Flash Drives, 37 (46.2%): digital cameras, 20 (25%): telephone, 15 (18.8%), Bar code encoder, 7 (8.8%); and Fax machines, 5 (6.2%) responses. Most of these tools are data carrying technology. However, the findings from the data on table 4 above reveals that Decision Support System (DSS), Electronic Document Management System (EDMS) and Online Transactional Processing System (OLTPS) identified by Bantin (2008) and Asogwa (2012) as the most suitable system for processing, reducing clerical costs and updating documents, were not available in any of the universities.

Staff Level of ICT Skills in Preserving E-records
ICT skills are basic requirement for e-records managers. They need to possess some basic skills for them to carry out their duties effectively. ICT skills vary depending on the level of the training undertaken by staff. Table 5 below present level of ICT skills of Staff preserving e-records in the universities studied.

Table 5: Distribution of Respondents on ICT Skills of Staff Preserving E-records

S/N	Level of ICT Skills	Frequency	Percentage
1.	Digital Literacy	43	53.75%
2.	Digital Competence	13	16.25%
3.	Digital Experts	14	17.5%
4.	No Response	10	12.5%
	Total	**80**	**100**

The data from table 5 above indicated that 43 which is 53.75% of respondents indicated they are digital literate, while 14 representing 17.5% reveals that they are digital experts and others 13 representing 16.25% shows that they are digital competent in preserving e-records in their respective universities. From the responses it is very clear that majority of the staff working in records management units in the Universities studied are digital literate, meaning that they have the basic qualifications to work as records managers. Ideally, they need to be digital competent for them to function effectively in discharging their responsibility as e-records managers.

ICT Qualification of Staff of the MIS/Registry in Preserving E-records

ICT Qualifications and Records management skills are the major elements in electronic records management processes. Electronic records managers require basic ICT skills for them to effectively manage and preserve e-records. The skills will enable them to know how to work and handle all the necessary equipment in managing e-records effectively in their work place. Table 6 below presents the responses of the respondents on their current qualifications.

Table 6: ICT Qualification of the Staff

S/N	ICT Qualification	Frequency	Percentage
1.	Degree in another Field	38	47.5%
2.	Degree in Records Management	12	15%
3.	Degree in Computer Science	8	10%
4.	Postgraduate Diploma in Records Mngmt	6	7.5%
5.	Diploma in Records Management	2	2.5%
	Total	66	82.5%

The data on table 6 above shows that 38 which 47.7% of the respondents indicated that they have degree in another field not in records management. While 12 which is 15% have their degrees in records management. However, 8 respondents which represent 10% have their degrees in computer science. The finding of the study reveals that majority of staff working in records departments in the Universities studied do not have a degree in records management. The findings of the study corroborate with the findings of the study conducted by Luyombya (2010) in Uganda and Kalusopa (2011) in Botswana where they reported that majority of staff working in e-records management unit do not have a degree in records management. The implication of the findings is that e-records preservation will suffer a serious setback due to lack of professionals in the area who will discharge the professional role of records managers.

Availability of Staff Development and Training

To ascertain whether or not the universities studied have training programmes for their staff on e-records preservation or not, the respondents were asked to indicate whether they have ever attended any form of staff development training on e-records management or not. The Table below presents their responses.

Table 7: Staff Development and Training on E-Records Management   N= (80)

S/N	Attended any Training	Frequency	Percentage
1.	Yes	33	41.25%
2.	No	38	47.5%
3.	No Response	09	11.25%
	Total	**80**	**100%**

The data on table 7 above reveals that 38 responses which are 47% indicated that they have never attended any form of training in e-records management in their respective universities. While 33 responses which is equivalent to 41.25% reveal that they have been attending training on e-records management in their universities. The findings from the data on table 7 reveals that majority of staff working in e-records departments had never attended any form of staff development training on e-records management and preservation that will enhance their capacity as e-records managers. The finding of the study implies that there was no acquisition of new skills by the staff managing e-records due to lack of capacity building training. This will, however, affect the preservation and management of e-records in the Universities studied.

Challenges of Preserving E-records

Respondents were asked to indicate the major challenges associated with the preservation of e-records in their respective universities. The findings indicated that:

Table 8: Challenges of preserving e-records

S/N	Challenges	Frequency	Percentage
1.	Hard Disk Crashing	36	45%
2.	Fragility of Storage Media	29	36.2%
3.	Software Obsolescence	26	32.5%
4.	Hardware Obsolescence	22	27.5%
5.	CD's, DVD's and Tape Scratches	19	23.8%

The data from table 8 above reveals that 36 responses representing 45% shows that hard disk crashing was the major challenge they have in their respective universities. While 29 respondents representing 36.2% indicated that fragility of the storage as their major challenge. In the same vein, 26 which represent 32.5% indicate software obsolescence as their major challenge. The findings from the data presented from the table above revealed that hardware crashing and fragility of media storage as the major challenges identified by the study.

Discussions of the Findings

The findings of the study on the preservation of e-records in the universities studies is not surprising, because the migration process was the most effective and most reliable procedure of preserving e-records of archival value (Iwhiwhu, 2010). To buttress the findings of the study, studies conducted by Sejane (2004), Ngulube (2008) and Kalusopa (2011) reported that the migration procedure proved to be the most effective method of preserving e-records in the organisations they studied. By this, it indicated that the universities have conformed to the best practice in the preservation of their e-records. The findings of the study on research question two indicated that majority of the universities have lots of ICT facilities, which they used in the preservation of their vital records but lacked major facilities which scholars of e-records considered as vital tools. This means that many of universities are ill-equipped for electronic records management because these technologies are known to be very good at "supporting the needs for information, minimizing the amount of data stored in the system, improving overall efficiency of the system, removing obsolete data, and providing organizational resource to current data" (IRMT, 2012).

This is not surprising because this finding corroborates with the studies conducted by Ndenje-sichalwe (2011), Kalusopa and Ngulube (2011) and Asogwa (2012) that Universities in Africa are underfunded and lack basic ICT facilities to effectively manage the volume of records they generate. The findings of the study on skills and competency of staff managing e-records reveals that majority of the staff managing e-records have literacy level skills which shows that majority are not ICT competent or expert enough to managed e-records in their respective universities. The finding shows that it was as a result of lack of training and re-training of staff managing e-records. Training and retraining improve the capacity and skills of staff working in the records department. Regular attendance in capacity building training makes staff acquire special skills that make them competent in their areas of specialization. The findings of this study corroborated with that conducted by Asogwa (2012), Uguanze (2002) and Iwhiwhu (2009), who equally reported that there was no form of staff development training on records management in three Universities studied which are University of Nigeria Nsukka, University of Abuja and Nnamdi Azikiwe University Awka. Though many were graduates in other fields, they had neither been professionally trained in traditional records management program nor in the management of electronic records and archives.

The findings also corroborate with the findings of the study conducted by Luyombya (2010) in Uganda and Kalusopa (2011) in Botswana where they reported that majority of staff working in e-records management unit do not have a degree in records management. The implication of the findings is that e-records preservation will suffer a serious setback due to lack of professionals in the area who will discharge the professional role of records managers. On the challenges associated with the preservation of e-records, the finding of the study is consonance with that of studies conducted by Iwhiwu (2010), Luyombya (2010), Kalusopa (2011) and IRMT (2012), where they reported hardware and software obsolescence as the major challenges of e-records preservation in organisations and institutions in Africa which normally are attributed to poor funding in records departments.

Conclusions and Recommendations

The level of readiness of universities in Nigeria towards electronic records preservation revealed that it is resting on egg shells. The substructure is weak and may collapse if concerted and revolutionary measures are not taken about its conditions. The weakness is a result of lack of records management infrastructures. Legal frameworks and awareness of the importance of managing e-records has led to ad hoc approach to records keeping in Nigerian universities and the attendant effects of misfiled, misplaced

and or complete loss of vital university records. Consequently, Nigerian universities are found to be ill-prepared for electronic records preservation due to weak legislative and organizational frameworks. In view of the fact that standards and guidelines were not enforced, relevant sustainable and accessible education and training programs have not been implemented. There was an absence of many constructs and other info-structures for managing hybrid records. The bottom-line of the whole issue is that universities are not being very pragmatic and proactive with their problems of e-records management.

To effectively preserved e-records in federal universities in Nigeria that would guarantee access, the study recommends the following measures:

1. It is recommended that federal universities should develop policies on records storage and preservation. Records storage and preservation should be centralized. This would facilitate efficient records management and the accessibility of records.

2. It is recommended that digital preservation programmes should be put in place. These should be preceded by detailed studies on the needs and re-organization of systems for identification, selection and classification of materials for digitization.

3. It is also recommended that university management should provide adequate funds for the purchase of current and up to date ICT facilities in their records departments.

4. It is recommended that universities should embark on training of their records managers to acquire the necessary skills for effective records management. It is also recommended that universities employ qualified staff to run the records and information management functions.

5. The study also recommends increase internet penetration and the bandwidth to ensure full and uninterrupted internet access in Nigerian universities.

6. It is also recommended that regular and sustainable power supplies should be provided because e-records management project is basically anchored on steady electricity supply.

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