

A Survey of Digital Preservation Challenges in Nigerian Libraries: Librarians' Perspectives

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Abstract

This paper investigates digital preservation challenges in Nigerian libraries. In carrying out this study four research questions were posed. The study sample population comprised of 172 participants at the 2nd Conference of Certified Librarians from various libraries and institutions across Nigeria, organised by the Librarians' Registration Council of Nigeria (LRCN) in Abuja on the 11th – 16th October, 2015. The outcome of the study revealed that digital preservation challenges persist despite the awareness of digital preservation strategies by librarians in Nigerian libraries. The findings revealed major challenges facing digital preservation, such as hardware and software obsolesces, lack of training, lack of backup and standards, lack of strategy policy, lack of funds, lukewarm attitude among the librarians and lack of legal right to preservation of content. Recommendations were made to protect and safeguard digital preservation challenges in the libraries, including the recommendation that the Nigerian Library Association (NLA), Librarians Registration Council of Nigeria (LRCN), University management and Library stakeholders should create a standard policy, provide needed skills for the librarians, lobby government for more funds and ensure that funds allocated to the libraries are properly utilised for effective digitization of library resources for future use.

Received 3 August 2016 ~ Revision received 20 April 2017 ~ Accepted 23 April 2017

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The *International Journal of Digital Curation* is an international journal committed to scholarly excellence and dedicated to the advancement of digital curation across a wide range of sectors. The IJDC is published by the University of Edinburgh on behalf of the Digital Curation Centre. ISSN: 1746-8256. URL: <http://www.ijdc.net/>

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Introduction

Librarians Registration Council of Nigeria (LRCN) and the Nigerian Library Association (NLA)¹ in Nigeria need to develop a robust model and curriculum to impact on staff and students' knowledge about digital preservation challenges in Nigeria. The NLA is the recognized body that coordinates the activities of librarians in Nigeria, but in spite of this role it has not been able to achieve much in terms of training and retraining in the area of digital preservation challenges in the libraries. This situation may be as a result of its lack of legal status – it is a conglomerate of professionals interested in libraries and librarianship – and the absence of a restriction policy of professionally qualified members. Similarly, Cooper et al. (2000) attested that the most familiar problems in digital preservation are media failure or deterioration, rapid changes in computer hardware and software that make older systems obsolete on a regular basis. Efforts to preserve digital information have always been challenged by the relative instability and short life of most digital storage media. Media failures and undetected deterioration of storage media remain a problem for digital preservation, but the issue of media longevity has moved into the background.

The objective of this paper is to survey the digital preservation challenges and to build on the previous study: 'Awareness of preservation strategy in Nigerian Libraries: A Librarians Perspective' by Sambo, et al. (2014). However, the earlier study showed that dearth of digital preservation policy, knowledge about digital preservation is low and librarians are lack training on digital preservation strategy, while constrains include low capacity building for library and librarians, lack of manpower, lack of management support, poor funding and lack of standard policy. Therefore, the concern of this study is to assess the current state of digital preservation problems and ascertain whether there has been an improvement on digital preservation challenges in Nigerian libraries.

The Role of the Librarians Registration Council of Nigeria (LRCN)

In line with the LRCN mandate and commensurable with the size and nature of its functions, the LRCN Act (1995) has 18 sections and a number of units to carry out its functions and activities.

The Act establishing the council mandated it to carry out the following functions:

1. Determine who is a librarian for the purposes of this Act;
2. Determine what standard of knowledge and skills are to be attained by persons seeking to become registered as librarians (in this decree referred to as "the profession") and reviewing those standards from time to time as circumstances may require;
3. Securing, in accordance with the provision of this decree, the establishment and maintenance of a register of persons entitled to practice the profession and the publication, from time to time, of the list of such persons;
4. Maintaining discipline within the profession in accordance with this Act; and

¹ Librarians Registration Council of Nigeria: www.lrcn.gov.ng

5. Performing such other functions as may be conferred upon the Council by this Act.

The Role of the Nigerian Library Association

The Nigerian Library Association (NLA) serves as the umbrella organisation for persons interested in libraries, librarianship and information services in Nigeria. It seeks, among other things, to promote the establishment and development of libraries and to assist in the promotion of such legislation as may be considered necessary for the establishment, regulation and management of libraries in Nigeria.

The role of the Nigerian Library Association² is:

1. To unite persons interested in libraries, librarianship and information services;
2. To safeguard and promote the professional interests in librarians;
3. To promote the establishment and development of libraries and to assist in the promotion of such legislation as may be considered necessary for the establishment, regulation and management of libraries in Nigeria;
4. To watch legislation affecting the sector and to assist in the promotion of such legislation as may be considered necessary for the establishment, regulation and management of libraries in Nigeria;
5. To promote and encourage bibliographical study, research and library cooperation;
6. To do all lawful things as are incidental or conducive to the attainment of the above objectives.

Objectives of this Study

The objectives of this study are:

1. To identify librarians' perception of digital preservation challenges,
2. To ascertain whether librarians in Nigerian libraries have training on digital preservation management,
3. To identify barriers facing digital preservation in libraries,
4. To suggest appropriate recommendations towards improving preservation of materials.

² Nigerian Library Association: www.nln.gov.ng

Research Questions

In order to achieve the main objectives of this study the following questions have been formulated:

1. What is the librarians' perception on digital preservation challenge?
2. Do librarians in Nigeria have training on digital preservation management?
3. What are the barriers facing digital preservation in libraries?
4. What could improve the digital preservation of materials in libraries?

Literature Review

The term 'preservation' has been defined in the IFLA Principles for the Care and Handling of Library Materials (2010) as "specific practices taken to slow down deterioration and prolong the life span of an object by direct intervening in its physical or chemical make-up." To preserve digital documents from being lost, we will regularly need to migrate the bits onto new media to guard against technological obsolescence, and some estimates suggest that data on magnetic tape needs to be copied once a year to guarantee that none of the information is lost. The term 'data migration' is now preferred to 'data refreshing' and is a broader and richer concept. The general outline of digital preservation challenges is well established. 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. Even if the media are preserved intact, digital materials become unreadable if the playback devices necessary to retrieve information from the media become obsolete or if the software that translates digital information from machine- to human-readable form is no longer available. Libraries, archives, and other repositories that have traditionally assumed responsibility for preserving information face technical, legal, and organizational challenges in responding to the new demands of digital preservation. (Bartels et al., 2012). The term 'digital preservation' refers to both preservation of materials that are created originally in digital form and never exist in print or analogue form (also called 'born-digital' and 'electronic records') and the use of imaging technology to create digital surrogates of analogue materials for access and preservation purposes. While this broad use of the term digital preservation can cause confusion, data on both aspects of digital preservation were analyzed. Digital materials, regardless of whether they are created initially in digital form or converted to digital form, are threatened by technology obsolescence and physical deterioration. (Bartels et al., 2012).

Assessment of library stocks around the world revealed that libraries are confronted with varying degrees of preservation challenges, which had led to the loss of valuable information resources. In addition, Meddings (2011) found that despite 85% of survey respondents claiming that 'digital preservation is either important or very important to their library', "less than half of respondents (46.1%) stated that they were currently taking steps to ensure the long-term preservation of digital content." Joint Information Systems Committee (2004) affirmed that training in long-term management and

preservation of digital assets is a major issue for the Higher and Further Education sector and that training and development of library staff in any academic library contributes significantly to productivity because trained staff are motivated and better equipped to utilize their knowledge, skills, and abilities. Likewise, Sambo et al. (2014) conducted a study on awareness of digital preservation strategy by librarians in Nigerian libraries. The study, which included responses from 603 batches of certified librarians, indicated that majority 70% of the respondents have not had training on digital preservation. This is a threat to the efficient and effective delivery of information services in the information technology era. In the same study, the respondents identified lack of training, lack of manpower, management supports and lack of policy among others as a hindrance to preservation.

Libraries and archives are in a transitional period and many are moving away from print into a primarily, or in some cases, entirely, digital format (Moghaddam, 2010). Users expect instant access to materials wherever they are, and the only way this can be achieved is by digitization (Conway, 2010). It is important that future users will be able to access the information, be able to tell whether the information is accurate and preserved as it was intended to be, and use it in their intended way (Gladney, 2009). Although the act of digitizing analogue materials, and the ensuing preservation of those materials has many benefits and much to offer, it is not without challenges. Some of the main concerns include issues involving human error, data loss, fading memory, lack of effective education, and technological obsolescence (Kastellec, 2012). Despite the ready availability of mobile technology and hardware devices, digital resources are both human and machine dependant, which is perhaps one of their greatest limitations (Moghaddam, 2010). Knowing what to preserve, and the best method to use, is a major concern for professionals, and one that requires specialized training. Therefore, the professional skills needed include technical proficiency in areas such as encryption, metadata schema coding, and authentication, as well as traditional archiving skills, which include cataloguing and classification (Sanett, 2013). Despite an increase in library and information science (LIS) students taking digitization and digital preservation courses, many institutions do not have the budgetary funds for an archivist or trained librarian on staff, leading to increases in human error (Maberry, 2013). Using staff that have not been formally educated in digital archiving comes with risks. Photographic and audio-visual collections are especially prone to deterioration, and require specialists and an often large budget to care for them properly (Gracy and Kahn, 2012). In addition, the problems associated with digital preservation are often too great for one organization alone to handle, and the cost can be prohibitive. Fortunately, libraries and archives do not have to shoulder this burden alone; organizations can collaborate in order to manage their collections together (Zorich, 2007). Sharing off-site storage via a consortium is one way to lower the cost of keeping hard copies. In this way, if a library or archive cannot afford to store important artefacts correctly, they can send them to an archive or central repository that can. By having the original materials in offsite storage, each member of the consortium can access the digital copy and share resources (Gracy and Kahn, 2012). Today, preservation management of digital resources pose a great challenge for libraries and other heritage institutions. Drijhout (2001) posited that digital documents are different from traditional paper documents in the way they are generated, captured, transmitted, stored, maintained, accessed and managed. According to the Digital Preservation Europe (DPE), digital objects are much more 'fragile' than traditional analogue documents such as books or other hard copy media.

It has been established that the preservation of new media is much more difficult than the preservation of older media such as books, letters and paintings. Since digital

obsolescence – also referred to as media obsolescence – seems to be the biggest bottleneck when it comes to preserving digital information, it is important to know what it entails exactly. According to Rothenberg, J and Bikson, T. K (1999) digital documents are inherently software-dependent. This means that if the reader of the software is no longer available – for instance because it has been replaced by other readers that run different formats – the software becomes inaccessible. Of course, even if this information is still intact it is ‘trapped’ within its own format and therefore does not really exist. According to Rothenberg: “In a very real sense, digital documents exist only by virtue of software that understands how to access and display them; they come into existence only by virtue of running this software.”

Therefore, it is obvious that digitization of materials is the most preferred strategy for curbing the decay of printed materials, without digital preservation the challenges of hardware and software obsolescence, backup issues, lack of strategy policy etc. cannot be addressed. Obsolescence is the state of being that occurs when an object, service, or practice is no longer wanted, even though it may still be in good working order. Obsolescence frequently occurs because a replacement has become available that has, in sum, more advantages compared to the disadvantages incurred by maintaining or repairing the original. Obsolete refers to something that is already disused or discarded, or antiquated. (Fowler et al., 1995). This increasing loss of digital information leads us to believe that we are living in a Digital Dark Age. Brand (1999) writes in his essay “Escaping the Digital Dark Age” that obsolescence is so important it has become a civilization issue. If nothing is done to solve this problem, then increasingly meaningful information will get lost and there’ll hardly be a future for any new material at all.

Research Methods

This study was carried out using a social survey method. The research instrument adopted for the study was a questionnaire. The instrument was structured to examine relevant information about digital preservation barriers in Nigeria libraries. It was validated using expert opinion. The reliability of the instrument was tested using test-retest method. Twenty five questionnaires were administered to librarians in Abuja, the capital city of Nigeria. The completed questionnaires were returned and re-administered to the same set of librarians, and the responses were the same with the previous ones. The population of the study was 172 participants at the 2nd Conference of Certified Librarians from various libraries and institutions across Nigeria, organised by the Librarians’ Registration Council of Nigeria (LRCN) and held in Abuja on the 11th – 16th October, 2015. While considering the manageable number of the subjects of this study the researcher used the whole population. The researcher administered and collected the questionnaire from the respondents. There was 91% response rate. The data collected through questionnaire were analysed using simple percentages to allow for easy analysis and interpretation.

Data Analysis and Discussion

Out of 172 copies of the questionnaire that were administered, 157 (91%) were retrieved. The data from the retrieved questionnaire are hereby analysed using simple statistics.

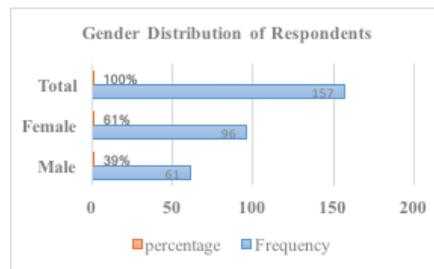


Figure 1. Gender Distribution of Respondents.

Figure 1 shows that 39% of respondents are male while 61% are female. This represents the gender distribution of librarians involved in the survey.

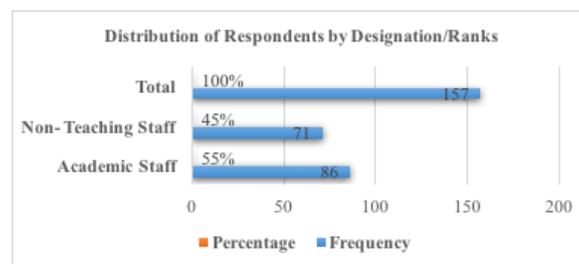


Figure 2. Distribution of Respondents by Designation/Ranks.

As observed from Figure 2, 55% of the participants were academics staff while 45% were non-teaching staff. It could therefore be assumed from the data that majority of participants were academic staff.

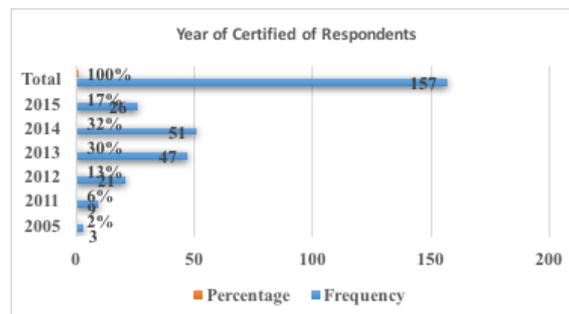


Figure 3. Year of Certified of Respondents.

Figure 3 shows that 2014 certified librarians of Nigeria were the highest participants in the conference, followed by 2013, while certified librarians from 2015, 2012 and 2011 were less well represented. To put this in context, the first set of librarians, numbering 536, were certified in May 2005 while the second set, numbering 1,177, were certified in August, 2011. The third batch, numbering 948, were certified in September 2012, while the fourth batch, numbering 603, were certified in June 2013. The fifth batch, numbering 877, were certified in September 2014, and the sixth batch, numbering 530, were certified in October, 2015. There are currently about 4,672 certified librarians.

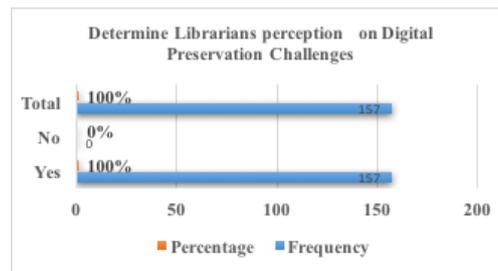


Figure 4. Librarians' Perception on Digital Preservation Challenges.

Figure 4 revealed that 100% of participants were conscious of digital preservation challenges in Nigerian Libraries. This shows that certified librarians in Nigerian Libraries were aware of digital preservation challenges. However, despite the awareness of digital preservation challenge, obstacles still exist. These may be as a result of lack of training and retraining on digital preservation management strategy.

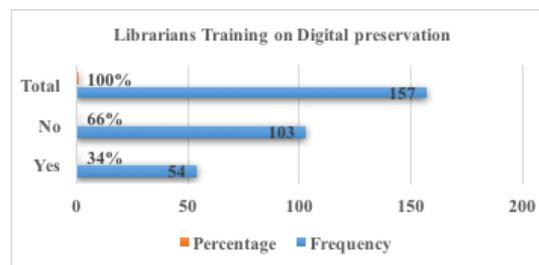


Figure 5. Librarians' Training on Digital Preservation.

It is obvious from Figure 5 that majority (66%) of the respondents have not had training on digital preservation, while only 34% had received training on digital preservation.

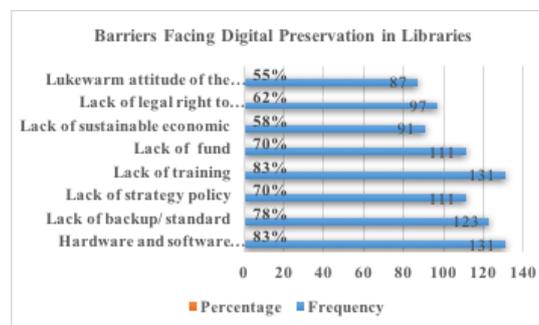


Figure 6. Barriers Facing Digital Preservation in Libraries.

A number of challenges were identified, these include a lack of hardware and software obsolescence, a lack of training (83%), a lack of backup standards (78%), a lack of strategy policy/funding (70%) and lukewarm attitude of the librarians (55%).

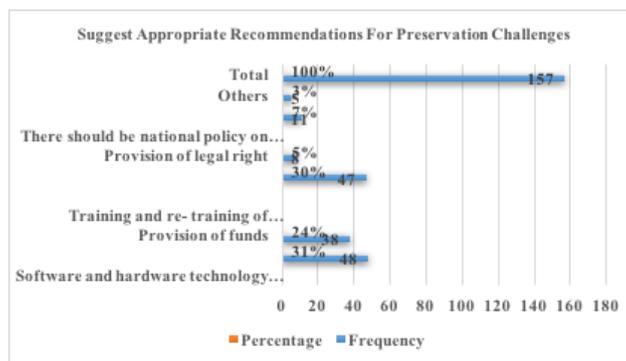


Figure 7. Appropriate Recommendations for Preservation Challenges.

As observed from Figure 7, majority (31%) of the participants suggested that software and hardware technology should be improved, and that training and re-training of librarians about new technology/trends in managing library digital content would reduce digital preservation challenges. 24% of the participants suggested additional funds would help.

Discussion of Findings

Our findings reveal that 100% of the participant's librarians in 2nd Conference of Certified Librarians were aware of digital preservation challenges. However, their awareness does not influence their training, as the majority of respondents (66%) have not had training on digital preservation management techniques. This result goes against the advice of the report of the Joint Information Systems Committee (2004) that training in long-term management and preservation of digital assets should be a major issue for the Higher and Further Education sector, and that training and development of library staff in any academic library contributes significantly to productivity because trained staff are motivated and better equipped to utilize their knowledge, skills, and abilities. The findings showed some barriers to digital preservation in Nigeria libraries, such as hardware and software obsolesces, lack of training, lack of backup/standard, lack of strategy policy and fund among others. This is in line with Zorich (2007), who confirmed that the problems associated with digital preservation are often too great for one organization alone to handle, and the cost can be prohibitive. The findings revealed that 31% suggested that software and hardware technology should be improved whereas 30% proposed that training and re-training of librarians on new technologies/trends in managing library digital content would reduce digital preservation challenges. 24% advocated for additional funding. This is in line with Cooper et al. (2000) who attested that the most familiar problems in digital preservation are media failure or deterioration, rapid changes in computer hardware and software that make older systems obsolete on a regular basis.

Conclusion

The study revealed that attention has not been given to digital preservation in Nigerian libraries, which lack preservation policies and training on digital preservation

techniques. It is noted that the lack of formulated policies and standards that will serve as a guide for libraries and librarians on preservation and management of digital resources in the libraries has contributed to the hindrance of digital preservation. Therefore all the efforts may come to naught if materials are lost as a result of problems of digital preservation (Ngulube, 2002). It is necessary, therefore that the library sector should do everything they could reasonably do to avoid or lessen the impact of disaster, by planning ahead of time (Wise, 2003). The main constraints facing digital preservation in Nigerian libraries are hardware/software obsolesces, a lack of training, backup standards, strategy, policy and funds, and the lukewarm attitudes of the librarians. This therefore calls for urgent attention and co-operation of several stakeholders, the government, university administrators, publishers, information technology industry, NLA, LRCN and Library managers to ensure that librarians acquire the skills, policy and standards they need for effective digitization of library resources for future use.

Based on these findings, this study recommends that:

1. The government, Nigerian Library Association (NLA), Librarians Registration Council of Nigeria (LRCN), university management and library stakeholders should create a standard policy, provide needed skills for the librarians, lobby government for more funds and ensure that funds allocated to the libraries are properly utilized for effective digitization of library resources for future use.
2. Libraries should make provision for long term planning for the digital preservation barriers, since many librarians do not have training on digital preservation management techniques and digital collation keeps growing and maturing. Only the digital library environment can establish architecture, policy or standards for creating, accessing and preserving digital content.
3. Librarians Registration Council of Nigeria (LRCN) as the regulatory body for the practice of librarianship in Nigeria should offer more digital preservation strategy and resources management training for library and information managers in Nigeria, cutting across the various geo-political zones of the country.
4. There should be an annual budget allocation for digital preservation of libraries materials. Also, government and parent organizations should make adequate financial provision for hardware and software technology that are obsolete.
5. A digital preservation management policy needs to be formulated. This may be done by adopting digital preservation policy of IFLA or having a home grown policy.

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