



# The Adoption and Utilization of Information and Communication Technology for the Preservation and Conservation of Serial Publication in Lautech Medical Library and Lautech Teaching Hospital Library, Osogbo.

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## ABSTRACT

*The research was conducted to determine the adoption and utilization of ICT for Preservation and Conservation of serial publications in LAUTECH Medical Library and Lautech Teaching Hospital Library Osogbo. Four research questions were raised for this study. The research design used for this study is descriptive survey, the population of the study which constituted all library staff in these libraries were 35. Total population sampling method was employed in this study. The results were collated and analyzed using tables and percentages. It concludes that despite the low use of ICT for the serials functions, it has been shown to reduce the rigor in serials publication; ease of selection, acquisition and processing difficulties. Generally it has helped to reduce serials function and reduced the cost for acquiring serials. The work recommended that: university library funding bodies should provide adequate resources to libraries to enable them procure ICT facilities which have been proved to enhance serials accessibility; libraries which are not using ICT facilities for serials functions should be encouraged to reposition their stand in order to provide the state of the art operations and services required by the present day serials users; and curriculum for library trainees should be expanded to accommodate the findings of this work.*

## INTRODUCTION

Information and Communication Technology (ICT), a fusion of Information Technology (IT) and Communication Technology (CT) which began in the 1950's, has been described as "the most potent force which is shaping the twenty first century" (Ayo 2001:72). Information and communication technologies (ICT) are the most influencing factors of today's information society. The term of ICT is used to express the hardware and software usability for information transportation and conducting communications linked by a vast array of technological protocols (Anunobi, 2006). It also covers internet service provision, information technology equipment and services, media and broadcasting, library and documentation centers, network based information services and preservation and conservation of information resources (Anie and Achugbue, 2009). The emergence of the information revolution as championed by information and communication technology (ICT) has enabled libraries to devise viable strategies for improved service delivery (Igwe, 2010 cited in Anunobi and Edoke, 2010). Libraries does not only use information and communication technologies for book and serial acquisitions, transaction, classification and cataloguing, reference service, user orientation service, circulation service, inter library loan, document delivery service, electronic contents, e-mail and chat assistance, web 2.0 interactive sharing, bibliographic service and photocopies services, but libraries also use information and communication technologies for preservation and conservation of information resources (Ilo, H, Beetseh, K Ameh, R 2016).

Preservation is an act of protecting and shielding material from destructive influences that shorten their life span. The library plays a crucial role of protecting and preserving information-bearing resources from distortion, deterioration, and eventual loss because the materials are imperative (Ilo, Beetseh and Ameh, 2016). Bessy, Abalaka, Dauda and Okikiri (2014) defined preservation as activities which include all the managerial and financial considerations, including storage and accommodation provisions, staffing levels, policies, techniques, and methods involved in preserving library and archival materials and the information contained in them.

The issue of preservation is as old as invention of writing, thus man in quest to maintain records has devised places to preserve such records for future use. The most difficult problem that has pressured the minds of librarians from time immemorial till date is the ability to ensure that safety of library information resources against threats such as floods, fire, mutilation, rodents, insects and so on are taken care of cited in Ilo, H, Beetseh, K Ameh, R (2016). According to Bamigboye and Burriamo (2008), libraries acquire and preserve resources books, periodicals, maps etc, to meet potential information or recreational need. Ogunniyi and Adejube (2014) had indicated that for decades

librarians have tended to mix up preservation with conservation and all efforts have concentrated on the curative treatment of single documents. Conservation and restoration are the most central activities of preservation; they are concerned with the physical maintenance and repair of documentary materials.

Libraries preserve resources to meet the informational or recreational needs of its clientele. When the resources in one's care is allowed to deteriorate unchecked or become damaged in anyway, it may be difficult and may be ultimately difficult or the information it embodies available for use. It is the responsibility of the library staff to keep these resources in good physical condition so that they are available for users at all times. The unflinching capacity of institutions of higher learning to teach, research published scholarly materials, and even to perceive the heartbeat of peers beating space and time is founded on the publication called serials. Since 1609 when the first newspaper was published and the publication of the first periodical in 1665, it has become very easy for researchers to communicate their findings and apply those of others in their research works. Hence, a university is adjudged high class when it can provide adequate information materials especially current serials. This is expected since research at the undergraduate and postgraduate levels have serials as their bedrock. Burch (1990) cited in Ilo, H, Beetseh, K Ameh, R (2016) described serials as a central force in scholarly communication because researchers prefer it for publication of their research results and for retrospective scholarly review. The serials sections handle publications issued in successive parts at regular or irregular intervals. Maintaining the operation of this section in a manual system or environment can be cumbersome. The situation is totally different in a fully automated system.

The ICT facilities applied in the library in general and serials unit in particular are based on the functions performed therein. The functions performed in the university serials unit as indicated by Anunobi, Chinwe V. and Edoke, Benson E.,(2010) are acquisition, processing, public service and preservation. These functions are synonymous with the functions performed in the university library though with some peculiarities emanating from the nature of serials.

Therefore, ICT facilities used in the university library are also applicable to the serials unit but also with peculiarity occasioned by the nature of serials. These services and operations have been transformed using ICT. Every institution that has a collection of enduring value should have a preservation and conservation plan for it.

### Objective of the Study

The fundamental objective of the study is to determine the adoption and utilization of ICT for Preservation and Conservation of serial publications in LAUTECH Medical Library and LAUTECH Teaching Hospital Library.

The specific objective of this study includes the following to:

- i. Ascertain the role of ICT in enhancing the Availability and Accessibility of serial publication
- ii. Examine the various ICT facilities used for preservation and conservation of serial publication.
- iii. Identify the factors affecting the use of ICT for preservation and conservation of serial publication.
- iv. Ascertain the Strategies for the Enhancement of the use of ICT for Preservation and Conservation in Libraries.

### Research Questions

The following are the research questions:

- i. What is the role of ICT in enhancing the Availability and Accessibility of serial publication?
- ii. What are the various ICT facilities used for preservation and conservation of serial publication?
- iii. What are the factors affecting the use of ICT for preservation and conservation of serial publication?
- iv. What are Strategies for the Enhancement of the use of ICT for Preservation and Conservation in Libraries?

### Scope of the Study

This study covered LAUTECH Medical library staff and LAUTECH Teaching Hospital Library Staff comprising the Professional and Para-professional staff, as the subject of the study. The case study covered the main methods the adoption and utilization of ICT for Preservation and Conservation of serial publications in the said libraries, the responsibility of which lies with the library staff only.

### LITERATURE REVIEW

The concept of Information and Communication Technologies (ICT) Information and communication technologies (ICT) are the most influencing factors of today's information society. The term of ICT is used to express the hardware and software usability for information transportation and conducting communications linked by a vast array of technological protocols. It also covers internet service provision, information technology equipment and services, media and broadcasting, library and documentation centers, network based information services and other related communication activities (Anie and Achugbue, 2009). ICT facilitates the information storage, retrieval,

acquisition, searching, viewing and information handling. The main function of ICT is availability of right information to the user at the right time for appeasing his thrust of knowledge

The library has an important role to play within a university to support its objectives of learning, teaching, research and community services. The extent, to which the university is able to carry out its laudable objectives, portrays how the university library has been supportive to it in the provision of all the essential information resources.

Preservation and conservation are sometimes confused to be synonymous. According to steward as cited in Osayuwa-Odigie and Eneh (2011) although the precise definitions of the two concepts (Preservation and Conservation) are endlessly arguable, both preservation and conservation involved a rigorous respect for the integrity of the information resources and on appreciation of its role as an object of cultural heritage. They further note that it was a commitment to prolonging the life of the information resources through preventive action and through the use of stale materials and appropriate techniques of treatment. In line with the above view, Walker (2013) sees the two concepts differently: he defined Preservation As 'all managerial, technical and financial considerations applied to retard deterioration and extend the useful life of (collection) materials to ensure their continued availability, while Conservation is the treatment of information resources by interventive procedures. It should be seen as one option in a programme of collection care.

Similarly, Baker as cited in Ovowoh and Iwhiwhu (2010) opined that Preservation is the action taken to anticipate, prevent, stop, or slow deterioration. It can also be described as the art of anticipating and preventing decay. Smith as cited in Osayuwa-Odigie and Eneh (2011) sees preservation to involve all activities that serve to prolong the life of information resources in a library's collection

Conservation in other words deals with all the activities that involve physical treatment of individual items by professional conservators or conservation technicians. Asogwa and Ifeanyi (2012) posited that preservation is a branch of library and information science that is concerned with maintaining and restoring continued access to records and archives collections. It is the study, diagnosis, treatment and prevention of deterioration, decay and damage to those collections in cultural heritage institutions. Conservation on the other hand is the treatment and repair of individual items in the collection in order to slow their decay and damage and to restore them to a usable state.

A more precise and comprehensive definition of preservation is the one given by IFLA Principles for the Care and Handling of Library Material (2010) to include "all the managerial and financial considerations including storage and accommodation provisions, staffing levels, policies, techniques, and methods involved in preserving library and archival material and the information

contained in them". While conservation is 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.

Serial is a publication in print, non-print or electronic format issued in successive parts and intended to be continued indefinitely. Serials are of various kinds and include journals, magazines, newspapers, newsletters, accessions, reports, proceedings and transactions of societies and other periodicals like abstracts and indexes. Serials are of great importance because they carry latest, current, up-to-date and useful information.

Definitions of the term "serial" vary from authority to authority and from library to library. The term is used to include all those publications which are issued with varying frequency, with a title common to successive issues, but without a foreseeable ending. Within this definition fall periodicals, governmental serials, newspapers, series, annuals, proceedings, transactions, and other less easily delineated categories. Osborn (1980) estimates that there are between half a million and a million serial titles published each year. For the number of separate issues published during a year and for the number of copies produced are too great for a reasonable estimate, but from what we know of serials, their number is staggering. The future of serial publications can be considered under two aspects: (1) the future of the serial publications themselves, and (2) whether and how libraries will use them. Serial publications, which have been part of our library resources for hundreds of years, will remain library resources for many years to come. It seems safe to predict that there will be no abrupt change in the pattern of publishing and reading which is favorable to the serial publication, dealing as it does with information too current, too transitory, or too fragmentary for conventional book treatment.

The deterioration of library materials forms the basic problem of libraries and given rise to preservation and conservation needs. In the course of preserving materials, there is need to adequately consider the value of records in terms of its educational, socio-political and economic impact on society, and decide the period during which each class of documents might be kept for use and then destroyed or permanently preserved for future use. However, no library material is infinite. By their very nature, they are susceptible to deterioration, hence preserving and conserving them become ultra-important. In order to retain the information contained in all media of communication for effective use by future generations, there is the need to preserve and conserve.

There is a need to preserve titles, which have arte-actual, biographical or intellectual values. It is instructive to note that paper, for instance, deteriorates very fast because of their ephemeral nature. Machine-made paper is made of wood, pulp containing harmful acids that cause it to deteriorate fast. Materials used for binding also contain harmful ingredients that cause deterioration. Environmental factors like high

temperature and relative humidity, exposure to light, air pollution, and careless handling by increasing number of users in open access repositories cause deterioration and object damage to materials that are very valuable.

For some decades now, there has been a revolution in information storage media. Data is now stored electronically in digitized formats. Computers are presently very basic to library functions and services. Mostly, they act as gateways in libraries and information can only be accessed and retrieved through them. Physical materials are of lesser interest to the end users in an environment where information is electronically accessible. The problem of storage, and practically that of preservation of information is removed from the point of use (where it has traditionally been located) to the point of supply. The information producer bothers about location of extensive databases for storage and preservation from where users can access whatever they needed. Until about 1990, librarians had little need to concern themselves with the preservation of electronic data; they were merely interested in the means of keeping out-put media like audio- CDs and CD – ROM in a usable condition for a reasonable length of time. The concept and development of electronic library has changed this attitude. This is not surprising because, automation brings with it a lot of dynamism and we must try to keep pace with the changes.

From the preservation perspective, digital technology offers important reformatting advantages over photocopy and microfilm, including its capability to create a higher quality reproduction of a deteriorating original, the ability to reproduce digital images over and over again with no loss of image quality, greater flexibility in terms of output and distribution, and potential cost savings associated with storage and distribution (Kenney, et al, 2002). Most importantly, ICT offers unprecedented opportunities for access and use, since it could facilitate the expansion of scholarship by providing timely, distributed access to a variety of sources from a variety of locations. Although the advantages of ICT for preservation reformatting and access enhancement are numerous, there are drawbacks as well. ICT has the potential to redefine preservation reformatting, but until the concerns associated with maintaining long-term accessibility to material stored in digital image form can be resolved, many libraries and archives are loath to initiate digital projects beyond the pilot phase (Kenney, et al., 2002). With the advent of high-performance computing and high-speed networks, the use of digital technologies is increasing rapidly.

ICT enables information to be created, manipulated, disseminated, located, and stored with increasing ease. Ensuring long-term access to the digitally stored information poses a significant challenge, and is increasingly recognized as an important part of digital data management. Digital preservation involves the retention of both the information object and its meaning. It is therefore necessary that preservation techniques be able to understand and re-create the original form or function of the object to ensure its

authenticity and accessibility. Recently, several approaches for digital preservation have been identified and presented. According to Lee et al, (2002) techniques for the preservation of digital information include technology preservation, preservation emulation, information migration, and encapsulation. Digital resources can be stored on any medium that can represent their binary digits or bits, such as a CD-ROM or a DVD.

Serials stakeholders locally and internationally see the use of information and communication technology facilities as a panacea to problem of serials accessibility. Such motivated the production of Union list of Serial in 1978. An initiation of Committee of Universities Librarians of Nigerian Universities. International Network for The Availability of Scientific Publications Newsletter No. 18, 2001 was also dedicated to the publication of Journals online. All are geared towards improving availability and accessibility of serials.

Siddiqui (1997); and Oketunji, Daniel and Okojie (2002) grouped ICT facilities in libraries into three categories viz. computers, storage media and telecommunications. The computers and storage media are regarded as the IT facilities. Oketunji (2000) informed that computer and storage media are used for housekeeping functions, one of which is the serials functions. The computer and storage devices media are grouped into two parts; the hardware and the software. The hardware are of general purpose for every computer user and include the input devices like keyboard, card reader, mouse etc; the central processing unit and the output devices such as printer, visual display unit.

The software is of two types. The operating system types that makes the computer do what it ought to do usually come with the computer. They include Microsoft DOS, Windows: 95, 98, 2000, XP, NT, Linux etc. (Oketunji 2000). The other type called application software is the specific software and the one in use in libraries especially serials unit is the most specific. Ikpaahindi (2002) listed the major library software used in Nigerian libraries and their source: they are CDISIS, Glass, TINLIB, X-LIB Alice for Windows, KOHA etc. Many other university libraries developed in-house application software. The storage media used in library includes the magnetic tape, magnetic disk and optical discs (Rowley 1988, 1993). The popular ones in the library are the floppy diskettes, the hard disk and the Compact Disc Read Only Memory (CD - ROM).

The Telecommunications aspect of ICT provides the capabilities for the transfer and or communication of data from one workstation to another (Oketunji, Daniel and Okojie 2002). While the computer and the storage media act to gather process and store information for use, the telecommunication facilities act to actualize the dissemination of such Information. Siddiqui (1997) identified the ICT facilities use in the library as Online Public Access Catalogue (OPAC),

telecommunication networks, electronic mail, electronic bulletin boards and electronic conferencing. Included in the list are telefacsimile (Fax) and online searching: Siddiqui Mathews (2000) mentioned the Internet, the World Wide Web (WWW) and library Networking/resource sharing. Others are electronic mail and online searching. In other words the telecommunication facilities are those ICT facilities that require the telephone or Very Small Aperture Terminal (VSAT) and related cable facilities to be put to use. Hence they could be grouped into the Local Area Network (LAN) facilities which gives rise to OPAC, the Wide Area Network facilities (WAN); World Wide Web (WWW), the Internet facilities, Electronic mail (E- mail) and the facsimile (FAX). Agbaje (2002) also informed that ICT facilities use could be applied in serials management with Internet through online system, e-mail, browsing, publishing, selection, ordering, acquisition and money transfer. They can also be used for electronic copying, CD-ROM technology, database management and library technology consortia.

Oketunji (2001) pointed out that automation which implies the use of ICT in serials will facilitate: (a) subscription control through the ease of procurement, procedures, order preparation, fund analysis and accounting. (b) Bibliographic file control through the ease of cataloguing, preparation of serials record entries. (c) Transaction control through ease of additions, changes and deletion; (d) collection control through the ease of servicing request for serials publication and other preservation and output information generation. He was only making suggestions which need to be proved scientifically.

**Inadequate Finance:** Almost all Nigerian Academic libraries, archives and information centers do not allocate adequate funds in their annual budget for the preservation and conservation of serial publication in their holdings. This has really caused the low priority or lack of desired attention given to the preservation and conservation of information resources by the management of such libraries and archives.

**Inadequacy of Equipment/Materials:** Lack of suitable or inadequate equipment and materials contributes significantly to the present poor status of preservation and conservation of information materials in Nigerian Academic libraries, archives and information centers. Some of the essential materials and equipment required for setting up functional conservation and restoration laboratories in Nigerian Academic libraries and archives are not available locally (ESARBICA, 2002).

**Unfavorable Government Economic Policies:** The economic policies of most African governments do not favour library and archival services, so preservation and conservation activities are not given the priority attention they deserve. Such economic policies include those concerning high duties and tariffs charged on imports of preservation and conservation equipment.

**Tropical climate:** The effects of tropical climate

of excessive temperature, high relative humidity, dust, and rodents that feed on paper-based materials cause rapid deterioration and decay of information resources in Nigerian Academic Libraries and archives. These agents of rapid deterioration and decay of information materials add more to the costs associated with conservation and restoration of information materials in Nigerian Academic libraries archives and records offices (UNESCO, 2000).

**Manpower and other infrastructure:** For any preservation and conservation programme to succeed in libraries and archives there must be adequate and well-trained manpower. This is because preservation and conservation of information resources is a specialized field of knowledge that requires information professionals who understand the physical and chemical nature of the materials in their library and archive holdings

**Lack of Preservation and Conservation Policy:** Most Nigerians do not have a national information policy which makes the formulation of preservation and conservation policies in the libraries and information centers out of the question (Wamukoya and Mutula, 2005).

**Quality of paper and ink:** The low quality of paper and ink used in the production of information materials especially library book materials and paper-based records in archives and records offices pose serious danger to preservation and conservation of information materials in Nigerian Academic Libraries (Mahapatra and Chakrabarti, 2003).

**Maintenance culture:** Nigeria generally lack maintenance culture. The managements of libraries and archives in Nigeria have poor maintenance culture of

infrastructural facilities such as telephones, electricity, water supply, laboratory equipment, buildings, disaster control devices, etc. meant for their preservation and conservation operations.

**Administrative problem:** Majority of the library and archive managers concentrate much on the effective provision of information services to users. There is a lack of proper recognition of the need for preservation, conservation and restoration of information resources. They have failed to realize that preservation and conservation staff needs adequate training for improved job performance there should also be provision of good conditions of service (Popoola, 2003; Olatokun, 2008).

## METHODOLOGY:

The instrument used for data collection is the questionnaire; this is constructed in accordance with the research questions. The questionnaire was designed by the researcher and consists of two parts. Part one was designed to elicit relevant background information about the respondents. Part two deals with the sections of items raised from the research questions of the study. A total number of 35 questionnaires consisting of four questions were administered to LAUTECH Medical Library and LAUTECH Teaching Hospital Library staff, which all the 35 questionnaires were filled and retrieved which makes it 100%. The table below shows the response rate. It reveals that 35 Questionnaires was administered and all the questionnaires were retrieved from the respondents.

**Table 1 Questionnaires Distribution/ Response Rate**

Respondents	Questionnaire	Questionnaire	Percentage
	Administered	Return	
Library Staff	35	35	100%

**Table 2: Demographic Information of Respondents**

Items		Frequency	Percentage
Gender	Male	20	57.14%
	Female	15	42.86%
Working Experience	1-5 years	5	14.29%
	6-10 years	5	14.29%
	11 - 15 years	10	28.57%
	15 years and above	15	42.86%
Total		35	100.00

The Table 2 shows the Demographic Information of the respondents, it indicates the gender distribution of the respondents; 20 (57.14%) of the respondents were male librarians while 42(42.86%) constitute female librarians.

On the other hand it also indicates the working experience of the respondents 5(14.29%) of the

respondents had 1-5 years of working experience whereas 5(14.29%) had between 6 - 10 years. 10(28.57%) of the respondents had put in between 11-15 years, while only 15(42.86%) of the respondents had spent more than 15 years and above working experience.

**Table 3: Various ICT Facilities Used for Preservation and Conservation of Serial Publications**

S/N	ICT FACILITIES	YES		NO	
		Frequency	%	Frequency	%
A	Personal computers	34	97.14%	1	2.86%
B	Copier	25	71.43%	10	28.57%
C	Printer	5	14.29%	30	85.71%
D	Scanner	9	25.71%	26	74.29%
E	CD-ROM	23	65.71%	12	34.29%
F	CD-Writer	9	25.71%	26	74.29%
G	CD-Changer	9	25.71%	26	74.29%
H	E-mail	7	20%	28	80%
I	LAN	5	14.29%	30	85.71%
J	WAN	0	0%	35	100%
K	Internet	10	28.57%	25	71.43%
L	OPAC	0	0%	35	100%

The result as presented in Table 3: shows the various ICT facilities use for preservation and conservation of serial publication where that majority of the respondents 25(71.43%) used photocopier for its serials functions. This was followed by 34(97.14%) and (65.71%) which use personal computers and CD-ROM respectively. Printers, LAN and OPAC were each used by 5(14.29%).

The Internet 10(28.57%); and scanner, CD writer and CD changer (9.09%) had very low use in the Serials Units studied. None of the libraries was using E-Mail and WAN facilities in the serials unit for serials functions. Considering the 50% Bench mark, only personal computers and copiers were the ICT facilities the Serials Units of the studied medical libraries using.

**Table 4: The Role of ICT in Enhancing the Availability and Accessibility of Serial Publication**

Role of ICT in Enhancing the Availability and Accessibility of Serial Publication		Agree		Disagree	
		Frequency	%	Frequency	%
a.	Using ICT, serials users can access more serials titles.	34	97.14%	1	2.86%
b.	Current serials issues are easily accessible with ICT	25	71.43%	10	28.57%
c.	Current abstracts and Indexes needed to access Serials are easily accessible with ICT.	27	77.14%	8	22.86%
d.	Indexes and abstracts to local Journals can now be accessed using ICT.	25	71.43%	10	28.57%
e.	Serials can easily be retrieved from the source with ICT.	26	74.29%	9	25.71%
f.	Increase in the number of titles accessible using ICT.	23	65.71%	12	34.29%
g.	Increase in accessibility of current serials using ICT.	25	71.43%	10	28.57%
h.	Increase in accessibility of current abstracts and indexes using ICT	12	34.29%	23	65.71
i.	Increase in accessibility of indexes and abstracts for local journals using ICT.	30	85.71%	5	14.29%
j.	Improved serials retrieval method using ICT.	28	80%	7	20%
k.	Improved current awareness services.	30	85.71%	5	14.29%
l.	The rigors of serials publication are reduced as a result of the use of ICT thereby making serials readily available.	28	80%	7	20%
m.	Using ICT for acquisition reduces the total cost of serials and more serials are acquired.	30	85.71%	5	14.29%
n.	Serials are being selected with ease using ICT	25	71.43%	10	28.57%
o.	Serials are acquired easily using ICT	28	80%	7	20%
p.	Using ICT for processing has eased the difficulties of processing	30	85.71%	5	14.29%
q.	There is improvement in financial control as a result of the use of ICT.	25	71.43%	10	28.57%
r.	Materials can be claimed easily using ICT thereby making them accessible.	35	100%	0	0%
s.	Method of preservation has improved using ICT.	23	65.71	12	34.29%
t.	There is reduction in serials function which engender quick processing	25	71.43%	10	28.57%

Table 4: shows the role ICT in enhancing the Availability and Accessibility of serial publication, that library staff was in affirmation that ICT were responsible for the increased accessibility and availability of serials publication. Where majority of the respondents rating from 50% and above accepted these variables include that use of ICT can access more serials titles; current serials issues are easily accessible, current abstracts and indexes are easily accessible, indexes and abstract

to local serials can now be accessed. With ICT facilities, serials can easily be retrieved. Also Serials users were of the opinion that with ICT facilities many serials titles can be accessed easily, ease of access to current abstracts and indexes, access to indexes and abstract to local journals is also made possible while there is improved retrieval method and users are better informed.

**Table 5: The Factors Affecting the Use of ICT for Preservation and Conservation of Serial Publication**

Factors Affecting the Use of ICT for Preservation and Conservation of Serial Publication		Agree		Disagree	
		Frequency	%	Frequency	%
a.	Government has not provided adequate fund to enable Libraries acquire the ICT for their various units.	28	80%	7	20%
b.	Irregular power supply limits the functioning of these ICT facilities.	30	85.71%	5	14.29%
c.	Inadequate provision of telephone services hinders the use of ICT facilities.	25	71.43%	10	28.57%
d.	There is inadequate accommodation for the use of ICT facilities.	28	80%	7	20%
e.	Librarians are ignorant of the benefits of ICT use in serials unit.	25	71.43%	10	28.57%
f.	There is absence of ICT policy for libraries in universities.	25	71.43%	10	28.57%
g.	Serials staff lack ICT skills.	30	85.71%	5	14.29%
h.	Serials users are unskilled in the use of ICT.	35	100%	0	0%
i.	Libraries have difficulty updating obsolete ICT facilities, which have high failure rate.	23	65.71	12	34.29%
j.	There is no technical support for ICT produced overseas.	25	71.43%	10	28.57%
k.	Inadequate indigenous ICT professionals to maintain the ICT.	28	80%	7	20%
l.	Some library software have no Serials modules which discourages their use in ICT based Serials unit.	25	71.43%	10	28.57%

The result presented in Table5 shows the factors affecting the use of ICT for preservation and conservation of serial publication. However, majority of the respondents rating from 50% and above accepted on the following as some major factor affecting the use of ICT for preservation and conservation of serial publication, these includes: government has not provided adequate fund to enable libraries acquire the ICT for their various units. Regular power supply limits the functioning of these ICT facilities. Inadequate provision of telephone services hinders the use of ICT facilities. There is absence of ICT policy for libraries in

Nigerian universities. Serials staff lack ICT skills. Serials users are unskilled in the use of ICT. Libraries have difficulty updating obsolete ICT facilities which have high failure rate. There is no technical support for ICT produced overseas. Inadequate indigenous ICT professionals to maintain the ICT, Some library software have no Serials modules which discourages their use in ICT based Serials unit, while less than 50% of the respondents disagreed on the fact that there is inadequate accommodation for the use of ICT facilities and Librarians are ignorant of the benefits of ICT use in serials unit.

**Table 6. Strategies for the Enhancement of the Use of ICT for Preservation and Conservation in Libraries?**

Strategies for the Enhancement of the Use of ICT for Preservation and Conservation in Libraries?	Agree		Disagree	
	Frequency	%	Frequency	%
a. Government should give special grants to universities for installation of ICT facilities.	30	85.71%	5	14.29%
b. Universities should allow their libraries to control their own budget.	35	100%	0	0%
c. Funds for print serials should be channeled to e-journals.	23	65.71	12	34.29%
d. Libraries should buy generator as an alternative source of power.	25	71.43%	10	28.57%
e. Libraries should explore the use of very small aperture terminal (VSAT) in place of Dial up Telephone line.	28	80%	7	20%
f. Library should engage in staff development by training and retraining of serials staff on the use of ICT.	25	71.43%	10	28.57%
g. The use of library tutorial should be expanded to include ICT use component.	27	77.14%	8	22.86%
h. Education of information professional should be reviewed to include training on ICT.	25	71.43%	10	28.57%
i. Professional associations should encourage and sponsor research on ICT use in Nigerian University libraries.	26	74.29%	9	25.71%
j. Government should create awareness on the benefits of ICT use to serials availability and use.	23	65.71%	12	34.29%
k. NUC should develop a model of ICT: managed serials	25	71.43%	10	28.57%
l. NUC should acquire and distribute serials management software and hardware to university libraries.	30	85.71%	5	14.29%
m. University libraries should reduce the acquisition of print serials and increase those in CD-ROM and electronic form.	25	71.43%	10	28.57%
n. University libraries should develop gradually a database of print serials already in the library.	27	77.14%	8	22.86%
o. University libraries should solicit for e-journals donor agencies.	25	71.43%	10	28.57%

Table 6 shows the level of response of the library staff on the Strategies for the Enhancement of the use of ICT for Preservation and Conservation in Libraries. Where majority of the respondents rating from 50% and above Agree on the following statement that Government should give special grants to universities for installation of ICT facilities, Universities should allow their libraries to control their own budget, Funds for print serials should be channeled to e-journals, Libraries should buy generators as an alternative source of power, Libraries should engage in staff development by training and retraining of library staff on the use of ICT, The use of library tutorial should be expanded to include ICT use component, Education of information professional should be reviewed to include training on ICT. Professional associations should encourage and sponsor research on ICT use in Nigerian University libraries. NUC should develop a model of ICT managed serials. Government should liberalize the importation of ICT facilities for

libraries. NUC should acquire and distribute serials management software and hardware to university libraries, University libraries should reduce the acquisition of print serials and increase those in CD-ROM and electronic form, University libraries should develop gradually a database of print serials already in the library and University libraries should solicit for e-journals donor agencies

#### DISCUSSION OF FINDING

The Four research questions for which answers and results were presented unveiled the adoption and utilization of ICT for Preservation and Conservation of serial publications in Libraries under sturdy. This study reveals the library staff to be in affirmation that ICT were responsible for the increased accessibility and availability of serials publication. These variables include

that using ICT serials users, can access more serials titles; current serials issues, current abstracts and indexes are easily accessible. With ICT facilities, serials can easily be retrieved.

Inadequate fund as a constraint to ICT use in serials unit could arise from the enormous money required to acquire ICT hardware, software, wiring, space, furniture and expenditure on trainings. Inadequate funds are very prevalent now with the budget cuts in university libraries by the funding body and the continuous demand for funds for the maintenance of the available ICT facilities in libraries.

Irregular power supply and inadequate infrastructure like telephone facilities as constraints confirmed the findings of Oketunji, Daniel and Okojie (2002) that power irregularity and inadequate infrastructure are the major constraints to the use of ICT for library operation in Nigeria. Serials unit operations with ICT facilities which depend on electricity for energy cannot provide effective services to its community.

Provision of special grants to universities and the library management control of library budget is also advocated by Raseroka (1999) who suggested that all faculties in the university should allocate a percentage of its budget for library development as resources of the library is shared among the members of the community. Allocation of faculty fund is necessary now that departments in some universities are given the opportunity to control large sums of money through the Direct Teaching and Laboratory Fund (TDF). Provision of a special grant is also necessary for ICT use in serials unit since the acquisition of hardware, software, electronic serials and their maintenance are cost intensive.

The combination of monograph acquisition with serials as commonly found in most integrated modules could compound some of the problems of serials functions which use of ICT facilities strives to alleviate. Solicitation for electronic resources and ICT facilities can help university libraries in Nigeria acquire them. Some non-governmental organizations and publishing companies are poised to donate these facilities and e-resources especially to developing countries with the intension of encouraging their use for educational equality. They are also interested in sensitizing the users on the benefits of e-resources.

## CONCLUSION

The study reveals the impediments to the use of ICT facilities in serials unit which include absence of underdeveloped serials modules in library software, lack of serials staff and users with ICT based skills. There is inadequate funding, improper accommodation, inefficient telephone facilities and irregular power supply. Lack of technical support for serials ICT facilities which may result from inadequate indigenous ICT professional and

lack of policy are some of the constraints to ICT in preservation and conservation of serial publication.

## RECOMMENDATIONS

Based on the findings and implication of this work, the following recommendations are made:

1. University library -funding bodies should provide adequate resources to enable libraries procure ICT facilities which have been proved to enhance serials accessibility.
2. Libraries which are not using ICT facilities for serials functions should be encouraged to reposition their stand in order to provide the state of the art operations and services required by the present day serials users.
3. Curriculum for library trainees should be expanded to accommodate the findings of this work.

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