From Techno-Illiterate to Techno-Literate Era: Nigerian Academic Librarians in Perspective

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Abstract

The exponential growth of information sources, resources and the continued ICT sophistication of libraries all over the world call for capable and ICT-compliant library staff in Nigerian academic libraries. This empirical study investigates the ICT skills of academic librarians in the eleven institutions of higher learning in Nigeria. Cross-sectional survey method was applied in the study using homogenous purposive sampling technique to draw the sample. Forty four (44) samples were selected comprising of four academic librarians from each institution. The finding uncovered huge gap between the potentials of the ICTs and the actual utilization by the librarians for information resources and services provision in the libraries. It further reveals that the librarians lack the requisite expertise to maneuver the ICT facilities and navigate in to the wealth of information resources available on the Web. Many general and specialized Databases were never utilized such as ScienceDirect, AGRIS, Biosis Biological Abstract, American Society of Civil Engineering, Blackwell, Tylor and Francis, Project Muse, etc. by the librarians to deliver, provide and disseminate information to their clientele. The study recommends some steps to turn around the situations viz; Deliberate and coherent policy on ICT training and retraining of staff on continues basis; Procurement of state of the art ICT equipment and facilities in the libraries; Increase in the budgetary allocation to the libraries; there should be an attitudinal change by the librarians so as to imbibe the ICT culture etc.

Key Words: Information professionals, Nigerian academic Librarians, Digital Age, ICT Skills, Information Management, Digital Information Environment.

Introduction

The academic libraries i.e. University and College libraries constitute a significant segment of libraries in Nigeria and also the most formidable and active of all types of libraries. This is because academic libraries in Nigeria have more professional staff, resources, information and communication technologies (ICTs) and other infrastructures for effective information provision and dissemination. Today we have an unquenchable thirst for information and knowledge. The society has changes significantly from the Barbarian to the Agrarian society, from Agrarian to the Industrial society and from Industrial society to a society dominated by the service sector. In fact, we generally refer to the present times as Information Technology (IT) Age or Information Era where libraries and librarians all over the world have been constantly championing the course.

According to Gbaje (2007) the implication of transporting library services to the online environment for the Nigerian academic libraries in the digital age are enormous particularly with the dynamic nature of digital technology which is constantly creating the need for new skills, work environment and work methods since librarians are the link between the information and the users. The biggest problem that is facing most organizations today is how to ensure maximum utilization of its potentials especially knowledge within the organization and how to leverage this knowledge to gain competitive advantage. Knowledge management is an emerging concept that aims to leverage information and collective wisdom to increase responsiveness, productivity and innovations. Knowledge management can be described as a systematic process of finding, selecting, organizing and presenting information in a way that improves the employees' comprehension in a specific area of interest.

Library is the heart of the educational enterprise and it is also the reservoir of knowledge communicated through information resources.

Information is fast becoming a vital national resource that determines the direction of any nation globally. Therefore, librarians and documentalist must be conversant with development in ICTs for the organization and disseminating of information in order to increase knowledge. Library automation and its attendant digital technologies present new opportunities and challenges to libraries to enhance their services. Some of the cultural functions of libraries are changing in the digital age by providing flexible and more efficient opportunities for the acquisition, organization, and bibliographic control of the available information and knowledge. However, automation should be the reality of the 21st Century. Libraries, the repositories of human knowledge have been striving to improve their productivity through the use of computers, (Faulty, 1994).Significant improvement for recording information began to be realized with the advent of offline batch processing system. Automation of library activities began to take place in the 1940s as libraries installed offline batch processing system, but very few of these systems were installed prior to the 1970. The few that were installed during these three decades used either punch machine to produce machine readable cards or key-to-tape technology to produce machine readable tapes.

The mid-1970s ushered in a major boom in automation, as a result of computer hardware and software that could support time-shared interactive online activities available. As a result of these technological innovations, online real-time system (the earliest prototype developed by libraries) began to replace batch processing systems. Over the past decade or two, online systems have evolved simplistic single function systems that provided information from only one set of library function (e.g. circulation, acquisition etc) to complex integrated system that deliver a well routed view within one system of the inter-relatedness of all functions, (Adesida and Fatuyi, 2001:69).
Integrated online system more closely represent the activities of the library, where one unit's processing of the library may impact materials availability and the functioning of another.

Integrated systems groups a number of activities, (e.g. Acquisition serial control, circulations and course reserves, the public catalogue, bindery and interlibrary loan) in to one system using common command and sharing common patron and item record bases. The ICT revolution is a by-product of the digitization era, and it has thus, by the convergence of IT and telecom, immensely improved services in industries, administration, management, education, and other services. For libraries worldwide, ICT has changed the scope, pace, range as well as the procedure of information service delivery, storage and retrieval. It enables information to be stored, retrieved, communicated and broadcast electronically in enormous quantities and at phenomenal speed. It also allows information to be arranged, selected, marshaled and transferred. In the developed world, ICT is being used to improve quality of life. However, developing countries are realizing the implications of the digital divide (the divide or gap between those with access to new ICTs and those without) and are now trying to adopt the new technologies as necessary for the proper functioning of such institutions as banks, broadcasting houses, industries, schools, libraries, etc(Abbas 2010).

Furthermore, the changes experienced with knowledge and packaging information through the invention of printing press by Gutenberg has taken another dimension. The advent of ICT turned the world into global village. The result is that the mean of packaging and delivering information changed. Information users desire a wave of services different from the traditional paper based services. Liverpool (2001) noted that this new wave of ICT has affected university libraries greatly as an information provider in the university. The university library struggles to maintain its credibility in the provision of the library materials for research, teaching and learning through the acceptance and use of ICT. Contemporary technologies like micrographic and reprography were adopted by libraries forgiving value added services. New services like referral besides reference, inter library loan, current awareness service (C.A.S.) and selective dissemination of information (S.D.I.) could be taken up due to these and such other technologies. Before the advent of computer and communication technologies, though the library collections were print dominant, the non-print materials started sneaking into them.

Since its inception, library is known to be a service oriented organization. This according to Tikekar (2009) " informed the promulgation of Ranganathan's *Five Laws of Library Science,* in 1931 and the subsequent review of the Laws by Michael Gorman, the past President of ALA, along with Walt Crawford in 1995 which have given both new meanings and make it more goal oriented in the changing situations. They are:

- Libraries serve humanity.
- Respect all forms by which knowledge is communicated.
- Use technology intelligently to enhance service.

- Protect free access to knowledge, and
- Honor the past and create the future"**.**

Review of Related Literature

Libraries exist for people, and not the reverse. Libraries primarily exist for the purpose of preserving records of human knowledge and civilization. History has shown that libraries were the major custodians of culture of past and present civilizations. Without libraries, human ideas would not have been successfully transmitted across generations. According to Nnaji (1986), Librarianship, like the art of writing, originated in the tropical and sub-tropical lands of Africa and Asia, first in the valley of River Indus, approximately 7,000 years ago.

According to Akintunde (2006) application of ICTs is irreversible trends that have great benefits for academic purposes and so all efforts must be made to embrace it by Nigerian academic libraries. Embracing it will automatically make students and academics in Nigeria members of the global information community. Apart from tapping from the global information supply, academic librarians can also contribute local content to the vast global information through the digitization of local content from sources such as theses, dissertations, rare books, newspapers and special manuscripts (e.g. Arabic). Academic libraries are functioning along with other activities of the institutions. If they want be integral part of the institution, they have to adjust, maintain their identity and their exclusive services. Their role is that of a facilitator of achieving the high goals of the high institutions of learning through guiding the students to a maximum utilization of their resources and services. For researchers, academic library is an invisible guide, friend and philosopher (Tikekar, 2009).

Gorman, in his book, "Our Enduring Values: Librarianship in the 21st Century" published in 2000 by ALA has analyzed well the changing roles of libraries, librarians and the library profession. The core functions of libraries, according to him, have remained the same viz: collection, organization and dissemination of information and knowledge. However, the ways and methods to carry them out are undergoing changes due to application of ICT. This aptly applies to academic libraries, librarians and the librarianship. Presently library institutions and the profession of librarianship are playing significant roles in the economic, political and social development of modern societies. No society can develop without realizing the values of libraries as agents of development. This point has been emphasized by many commentators such as Ejimkonye, et al. (1991), who posited that custodial role of the library has been expanded to include others. It is well known fact that a nation cannot develop in isolation of its human resources. For instance, universities are important agents in the development of the human resources of any nation. This major role of universities in a national development is achieved through their programs of teaching, learning and research. Such programs provide the necessary high level manpower for the acceleration of social, economic and political progress of the nation. These and many more expectations are depended largely on how effective libraries are attached to such universities. According to Arkorful (2007) ;

> Libraries in Africa have difficulties satisfying the information needs of their users. This is because the amount of information created these days is so huge that using the traditional method of locating and retrieving information leaves much to be desired. Locating access to the collections with the card catalogue is time-consuming, frustrating and unattractive to users. As such, the collections in the libraries are under-utilized.

ICTs and telecommunication infrastructure deployment is the foundation on which the information society is built and can flourish. Monitoring the ICT industry is therefore critical to understanding future ICT development, accessibility and utilization in Nigeria especially in the institution of higher learning so as to increase the capability, visibility, accessibility and responsiveness of their libraries to the information needs of their community. To meet the demands of an information society, librarians should be furnished with advanced technological tools while librarians should advance their skills accordingly.

According to the national IT policy for Nigeria (2001), the aim of applying ICT in Research and Development includes;

(i) to ensure Nigeria's contribution to IT development and her competitiveness in the international market.
(ii) to guarantee sustainability of IT in Nigeria and use it to stimulate industrial growth.
(iii) to promote self-reliance and export of IT products and services.
(iv)to encourage joint R & D efforts between the private sector and the universities such as software development.

(v) to identify key technological areas as well as others and provide fiscal support and incentives to encourage local technology development.

(vi) to encourage transfer of technology through exchange of visits between expatriate IT experts and Nigerian IT experts in Diaspora on one hand and IT institutions and experts in Nigeria. Funding to be coordinated by National Information Technology Development Fund (NITDEF).

As with many development indicators, ICT indicators are strongly correlated with countries economic performance, which can be measured, inter alia, in terms of national income levels. High ICT performance can be related, for example, to effective government policies enabling the sector to grow, and an overall strong ICT industry in the country. In addition to ICT infrastructure, education and skills are necessary for making effective use of ICTs and building a competitive and inclusive information society.

ICT is increasingly being recognized as a powerful enabler for economic and social development. ICT can advance economic growth, enhance social inclusion, increase health and education services and improve governance at all levels. The engine that drives the deployment of knowledge and information is what we collectively called ICTs. They are the pipes and mechanisms through which knowledge and information are packaged and transmitted, to be unbundled for deployment at the receiving end. By virtue of the vast technologies and applications which have come to be (and are continuously being) developed through innovation, ICTs have become so important to virtually all aspects of life, activities and operations, from research and development to industrialization, from health services to entertainment, from education to systems of governance, that they have become fundamental to basic life. Information technologies are rapidly transforming the content of and services of libraries and information centers worldwide".

This change is manifested in the conversion of printed bibliographic sources into CD-ROM data bases, direct access to remote databases, outline and the attendant shift in remote search strategies. On the other hand, some important publications of libraries in book form are only available online. For this reason many writers are of the opinion that information technologies could change established ways of work and life. For instance, Adimorah (1995) holds that "progress in IT and communication is rapidly changing the way we live, the way we work and the way we will work in future." And this is without doubt, has a lot of implication on resource sharing and IT use. Libraries have undergone tremendous changes over the years, assuming new dimensions influenced by technology driven application. Information technologies have brought in sweeping changes in the traditional way libraries are functioning. Libraries are entrusted with a host of predetermined task like acquiring, organizing, preserving, retrieval and disseminating information to their users in whatever format available. That has been the trend, from ancient times to the present information age, with significant shift. This paradigm shift is manifested in the way information technology has influenced the very nature of libraries. The conventional set up of storing information within a constrained physical space has given way to database that integrate data sources around the globe by the means of network and Internet connectivity.

In the present ever changing information environment, libraries are confronted with both opportunities and challenges. Information technology has been the most important, for the fact that it has introduced many changes in the way information is identified, generated, processed, managed and disseminated to library clientele. Furthermore, information technology has created a sense of urgency among librarians. One of the important steps towards taking advantage of the benefits of information technology is the automation of library operations and services.

The rapid development in IT, which turned the world into a global village, has enhanced the availability, accessibility and utilization of information resources in academic libraries through the application of computer and communication technology, and the output has moved from Kilobyte through Megabyte and into Gigabyte information network. Library automation and its attendant digital technologies present new challenges and opportunities to Nigeria libraries to enhance their services. Some of the cultural functions of libraries are changing in the digital age and providing promising opportunities for acquisition, organization and bibliographic control of the available vast knowledge. The trend in information technology in the information society is that library automated systems are increasingly geared to function in the digital library environment, and with this unprecedented success in library automation we will be able to organize and preserve our knowledge without fear of loss of access and maintain a single or central database for all the library subsystems.

The new technology, the increasing importance of knowledge and information, and the more widely recognized need for solutions to transnational problems and needs have provided the gateway for transition from an Agro-industrial and technical era to a knowledge – information – network era. As a result of the information explosion and the development of IT in the last three decades of the 20th century, it is important for an academic library to go outside the walls of its own collection to satisfy its client information needs couple with the fact that the new information society is characterized by information technology revolution whose crowning glory is the electronic superhighway called the Internet. According to Alasa and Kelechukwu (1998) as reported by Okiy (2003) "The idea of Internet or superhighway is based on the principle that every piece of data held electronically anywhere is potentially accessible to any person with appropriate computer technology." With this development, it is possible for university libraries of the 21st century to be completely inter–accessible and paperless thereby facilitating the much talked about "global village."

Nigeria has achieved a modest success in terms of ICT application for information acquisition, processing and dissemination especially in other sectors of the economy such as telecommunication and broadcasting. According to the International Telecommunication Union in its 2010 ICT development index report (ITU, IDI, Report 2010). Nigeria's IDI value increased by more than 20 percent, jumping up 12 places to 122nd in the 2008 IDI. While the overall rank is still low, it represents a significant improvement for such a large country. This improvement is mainly due to an increase in ICT use (23 ranks up in the use sub-index), with the number of Internet users increasing from 7 per 100 inhabitants in 2007 about 16 in 2008. The report further acknowledged that, while this is substantially lower than Internet penetration levels in advanced ICT countries, it is much higher than the African average of 4 percent in 2008.

However, the above scenario was not fully reflected and incorporated in to the country's (Nigeria) library and information centers. This is attested to by the fact that most of the Nigerian Libraries are still operating manually with attendant inefficiency and unproductivity. Most of these libraries have not computerized any of their functions as the public card catalog is still being used to locate books and journals and with no evidence of Electronic Document Delivery Service (E.D.D.S.). According to A.P.L.E.N (2008) technological core competencies for professionals are defined 'as a combination of skills, knowledge and behaviors related to library technology important for organizational success, personal performance and career building. The fast growing technology makes academic libraries to face extra challenges in supporting academic and research programs, if they do not want to be perceived as warehouses of books.

Today, in the digital age, librarians can no longer be simply information providers or the 'keepers of knowledge, but they are expected to be information controllers, organizers, advisers, and consultants. The changes in technology using electronically stored and retrieved information has changed the way patrons and students are able to access, retrieve and use information. The instantaneous access of information through the Internet has made vast amounts of information and data available to anyone with a computer, a modem and a provider. Digital information is changing the role of librarians from a person who students ask for assistance in finding information in a place called a library to someone who needs to provide services and instruction regardless of place, time or format (Anderson and Gesin 1997).

Tyson (2007) asserts that with shaping of libraries, library staff should also be transformed to serve the present generation who need information anytime, anywhere. The skills of librarians should link to the technological infrastructure. In Nigerian society, librarians are encountering rapidly changing environments that require diverse skills, new thinking, and broadened perspectives. Until recently, information specialists played the role of gatekeeper in handling organization documents and formal knowledge. Librarians' primary concerns were the management of book collections and journals (Cronin, 1998). Today, librarians are transforming themselves and bracing for a more active and dynamic role as we move closer and closer to the information society. This is has also resulted in changing name for librarians to information managers, digital librarians, knowledge managers, system librarians etc., which have also changed their roles and impact on the environment through good information handling skills in order to market and entice the users and restore their confidence on the library as having the capacity to provide the required information resources from within and outside their library frontiers.

This technical know-how has also assisted the information professionals in other part of the globe to handle and effectively manage certain pertinent information management and dissemination activities such as interlibrary loan and networking services; Selective Dissemination of Information (SDI); Current Awareness Services (CAS); Database Construction; Basic research technique in the digital environment; management of virtual and/or digital libraries.

Other people from other occupations and disciplines such as scientists, engineers and IT professionals have also found a niche in response to the fundamental need of the information society (Schement & Curtis,1994)

At the same time, while in most developed countries it is difficult to imagine day-to-day life without Internet, two-third of the world's population, and more than three-quarters of the population in developing countries are not yet online, and of those that are, many do not have access to high-speed, high-quality Internet services. The need to bridge the digital divide and make broadband Internet access universal has been recognized within key international development goals, such as the Millennium Development Goals (MDGs) and the targets of the World Summit on the Information Society (WSIS) (ITU,IDI, 2012).

Various researches conducted revealed that Nigerian Librarians are reluctant to venture in to the following three major areas in order to serve their users effectively, practice and become relevant in the new digital information environment;

a. Knowledge of Tools & Technology. This includes;
- ➢ Up to date and familiarity with KM & IT tools and developments.
- ➢ Knowledge of in-house information systems
- ➢ Knowledge of in-house tools for knowledge capture, dissemination, and sharing.
- ➢ Knowledge of the network architecture

b. Information Skills. This includes;
- ➢ Matching information needs with information resources.
- ➢ Expertise in information sources and content
- ➢ Expertise in information-seeking skills
- ➢ Ability to identify, evaluate and recommend information sources.
- ➢ Providing 'best means' of information access.
- ➢ Ability to apply information organization skills to become knowledge integrators of Internet and intranet knowledge.

c. Strategic Thinking & Analytical Skills. This includes;
- ➢ Exhibit and promote systems thinking.
- ➢ Understanding of organizational responsibilities.
- ➢ Align information needs to organizational processes and goals.
- ➢ Ability to think logically.
- ➢ Create new ways to elicit information and knowledge.
- ➢ Create value-adding information services/systems/ products.

Furthermore, other specific information management skills that Nigerian librarians are lagging behind were in the following areas because the crop of librarians that could thrive in the digital age is those who demonstrate specific skills, competence and deeply committed to gaining new skills and knowledge throughout their careers.

- Knowledge of vocabulary and query languages
- Ability to locate, evaluate and cite information
- Handling and developing information storage and retrieval systems of specialized/ local data and materials
- Abstracting, synthesizing, indexing and other search strategies
- Ability to identify, select, evaluate and provide access to pertinent information resources in any media and format

Methodology

The study used cross-sectional survey in which questionnaire were distributed to elicits data from the respondents. This is in order to accord the respondents opportunity to freely indicate and answer the questions willingly considering the sensitive nature of the study.

Homogenous purposive sampling was applied to select Forty Four (44) samples from the population of the study. In this measure, units are selected based on their having similar characteristics because such characteristics are of particular interest to the researcher.

The population of the study comprises of Eleven (11) institutions of higher learning in the Northern part of Nigeria. Out of this, five (5) are Universities, four (4) Polytechnics, and Two (2) Colleges of Education. They are as follows;

- Bayero University, Kano
- Umaru Musa Yar'Adua University, Katsina
- Ahmadu Bello University, Zaria
- Abubakar Tafawa Balewa University, Bauchi
- Federal University of Technology, Minna
- Federal Polytechnic Bauchi
- Katsina State Polytechnic
- Kano State Polytechnic
- Federal College of Education Katsina
- Federal College of Education Kano
- Aminu College of Islamic and Legal Studies

Objectives of the Study

1- To find out the ICT skills and capabilities of the academic librarians
2- To investigate the level of ICT utilization in carrying out the Library and Information Services in the libraries
3- To ascertain the challenges of ICT adoption and adaption in the academic libraries under study
4- To find out solution to the identified problems

Results and Discussions

A- Management

Table 1- Section of the Respondents

SECTION	NO.	%
Circulation	8	20
Collection Development	7	17.5
Serials	9	22.5
Automation/E-Library	6	15
Reserve	3	7.5
Technical	2	5
Reference	5	12.5
Total	**40**	**90.9**

Table 1shows the various sections where the respondents work. It revealed the (20%) of the respondents were working in the Circulation sections, (7.5%) in the Collection Development, while (22.5%) in the Serials sections of the libraries.

The findings also revealed that (15%) of the respondents were working in the Automation/E-Library, (7.5%) in the Reserve, (5%) in the Technical, while (12.5%) discharges their responsibilities in the Reference sections of the libraries.

The above finding indicates representation and involvement of the academic librarians of all sections of the libraries. This, will in no small measure strengthens and lay more credence to the outcome of the study.

Table 2: Rank of the Respondents

Rank	NO.	%
Librarian II	6	15%
Librarian I	11	27.5%
Senior Librarian	16	40%
Principal Librarian	7	17.5%
Total	**40**	**90.9**

Table 2 shows that majority of the respondents were Senior Librarians (40%), while minority were middle level cadre (15%).

This situation was intentional because the researcher strives to administer the questionnaire to the more senior level librarians so as to get the actual situation about their state of ICT skills and capabilities.

B-ICT Skills and Capabilities of the Librarians

Table 3: Years of Working Experience with ICT

Year	NO.	%
Less than 2 years	9	22.5
2-5 years	15	37.5
5 and above	16	40
Total	**40**	**90.9**

As it could be seen from the table 3, majority of the respondents (40%) had their years of working experience with ICTs from 5 years and above, while minority (22.5%) had their ICTs working experience stood at less than 2 years.

This finding further confirmed the earlier revelation regarding the respondents experience in the library in which majority were said to be senior librarians.

Table 4: Knowledge of ICTs

Knowledge	NO.	%
Not Knowledgeable	5	12.5
Some What Knowledgeable	17	42.5
Neutral	10	25
Knowledgeable	8	20
Total	**40**	**90.9**

Table 4 above indicates that majority of the respondents (42.5) had their ICT knowledge as Some What Knowledgeable that is peripheral, while (20%) claimed to be Knowledgeable. It was uncovered that (12.5%) of the respondents were Not Knowledgeable, while (25%) were Neutral.

Based on the finding that (42.5) of the respondents were Some What Knowledgeable about the ICT knowledge, this will have implication for effective utilization, research, learning and teaching in the institutions.

Table 5: Searching Techniques and Skills of the Respondents

Techniques and Skills	NO.	%
Providing access to databases and databanks	16	40
Familiarity with search vocabularies	7	17.5
Familiarity with query languages	3	7.5
Familiarity with indexing and other search strategies	4	10

Table 5 depicts that majority of the respondents (40%) exhibits skills providing access to databases and databanks for the users, while minority of the respondents (7.5%) were familiar with query languages. It was also gathered that (17.5%) of the respondents were familiar with search vocabularies, while (10%) were conversant with indexing and other search strategies.

However, for the academic librarians to be effective in the discharge of their responsibilities, emphasis must be given on skills related to search vocabularies, query languages, indexing and other search strategies in order to provide the users with desirable information resources.

Table 6: ICT Skills Possessed by the Librarians

ICT Skills	NO.	%
Online Searching	24	60
Web Maintenance	0	0
Social Media	20	50
Web design	0	0
Software troubleshooting	0	0
Chat/IM	10	25
Hardware troubleshooting	0	0
Programming	0	0

Table 6 above shows that majority of the respondents (60%) can perform Online Searching, (25%) had skills for Charting, while (50%) of the respondents could navigate Social Media such as Facebook, Twitter etc.

However, it was revealed that none of the respondents had skills for Web Maintenance, Web design, Software troubleshooting, Hardware troubleshooting and programming.

The result further buttresses skills inadequacies of the librarians in many critical areas for their survival and efficiency. This is because, ideally, academic library should have some or all of these experts so that potential technical problems could be promptly rectified.

Table 7: Responsibility (ies) Carry out Using ICTs

Responsibility (ies) Carry out	NO.	%
Database Searching	9	22.5
Circulation	8	20
Answering Reference Questions	5	12.5
Cataloging	3	7.5
Acquisition/Subscription	10	25
Online Reference Service	4	10
Interlibrary Loan	3	7.5
Classification	3	7.5
E-resource Management	6	15
Catalogue Search/OPAC management	17	42.5

Table 7 indicates that majority of the respondents (42.5%) were using ICTs for Catalogue search and OPAC management, while minority (7.5%) were using ICTs to perform tasks ranging from Cataloging books, Interlibrary Loan, to Classification in the libraries.

Based on the findings, it is evident that major aspect of the libraries' work was carried out manually and this has corroborated with claims made by Aguolu, Haruna and Aguolu as reported by Sharma (2009);

> Technology was introduced in academic libraries of Nigeria in 1975 led by the University of Ibadan, Ahmadu Bello University and Obafemi Awolowo University. But the progress has been very slow. In fact, most academic and research libraries in Nigeria have not computerized any of their functions. The public card catalogue and the visible indexes are still finding tools for books and journals. In most libraries, likewise, indexes and abstracts are compile manually. Library and Information services in Nigeria have yet to transcend the traditional functions.

C. Utilization of ICTs in the Libraries by the Librarians

Table 8: ICT-based responsibilities offered by the Librarians

Responsibilities	NO.	%
Handling and developing information storage and retrieval systems of specialized/local data and materials	8	20
Managing different types of housekeeping operations	18	45
Carrying out online searches for users using modern equipment	10	25
Exchanging local databases and sharing of resources via networking	6	15

Table 8 shows that majority of the academic librarians (45%) were using the ICTs to carryout different types of housekeeping operations in their libraries, while the least number (15%) were using the facilities to exchange databases and share resources via networking with other libraries/institutions. However, (20%) of the respondents were using the equipment for handling and developing information storage and retrieval systems of specialized /local data and materials, while (25%) used the ICTs to carryout online searches for users using the modern equipment.

Based on the findings, it is apparent that most of the librarians were using the ICTs to perform responsibilities that require less technological skills and expertise (routine activities), instead of more technical ones such as developing information storage and retrieval systems, database searching, maintenance and networking so as to satisfy effectively the information need of their users.

Table 9: Value-added Services Provided Using the ICTs

Value-added Services	NO.	%
Selective Dissemination of Information (S.D.I.)	8	20
Current Awareness Services (C.A.S.)	10	25
Electronic Documents Delivery (E.D.D.)	21	52.5

Table 9 indicates that majority of the respondents (52.5%) were using the system to provide e-resources for their clientele, while (25%) Current Awareness Services, and (20%) were offering Selective Dissemination of Information to their users using the ICT-based process.

It was, however, observed by the researcher that the electronic document mentioned, was solely via Google and Yahoo Searches where free access documents are available.

Table 10: Online Databases Utilized by the Librarians for Information Resources Provision and Delivery in their Libraries

Databases	NO.	%
MEDLARS/MEDLINE	20	50
ERIC	13	32.3
SABINET	5	12.5
Project Muse	0	0
Emerald	10	25
JSTOR	11	27.5
Annual Reviews	4	10
Wiley Interscience	0	0
American Chemical Society	13	32.3
American Institute of Physics	3	7.5
American Physical Society	2	5
Taylor and Francis	0	0
Institute of Physics	0	0
Elsevier	26	65
Blackwell Publishing	0	0
Science Direct	0	0
Cambridge University Press	3	7.5
Oxford University Press	6	15
Royal Society of Chemistry	13	32.5
IEEE/IEE Online Library	0	0
OCLC	2	5
Nature	0	0
Portland Press	0	0
EBSCO Research Database	19	47.5
American Society for Microbiology	1	2.5
Encyclopaedia Britannica	22	55
Biological Abstract	5	12.5
SciFinder Scholar	13	32.5
Credo Reference	0	0
American Society of Civil Engineering	0	0
BIOSIS Biological Abstract	0	0
American Society of Mechanical Engineering	1	2.5
Authorama	0	0
Bartleby.com	0	0
Bibliomania	0	0
SAGE- E-resources	12	30
Complete works of Shakespeare	5	12.5
Alex Catalogue of Electronic Texts	0	0
Project Euclid	0	0
AGORA	0	0
AGRICOLA	0	0
AGRIS	0	0

Table 10 above shows that the highly used Database was Elsevier with (65%), and the least used Databases were American Society for Microbiology and American Society for Mechanical Engineering with (2.5%).

However, the findings revealed that twenty (20) of the Databases were never utilized by the respondents which are; Project Muse, Wiley Interscience, Taylor and Francis, Institute of Physics, Blackwell Publishing, IEEE/IEE Online, Nature, Portland Press, Science Direct, Credo Reference, American Society of Civil Engineering, BIOSIS Biological Abstract, Authorama, Bartleby.com, Bibliomania, Alex Catalogue of Electronic Text, Project Euclid, AGORA, AGRICOLA, and AGRIS.

On the basis of table 10 the utilization can be categorized in to different levels. It is established that the highly used online database is Elsevier and the least used online databases are American Society of Microbiology and the American Society of Civil Engineering.

Based on this, the below table has been prepared on the basis of usability. The presentation has been restricted to the highly used online databases and lowest used online databases.

Table 10.1 Ranking of Online Databases Usage by the Academic Librarians

Degree of Used	Category	No. of Databases in each Category
80-100 percent	Very highly used	0
60-79 percent	Highly used	1
40-59 percent	Medium used	3
20-39 percent	Low used	7
01-19 percent	Very low used	11
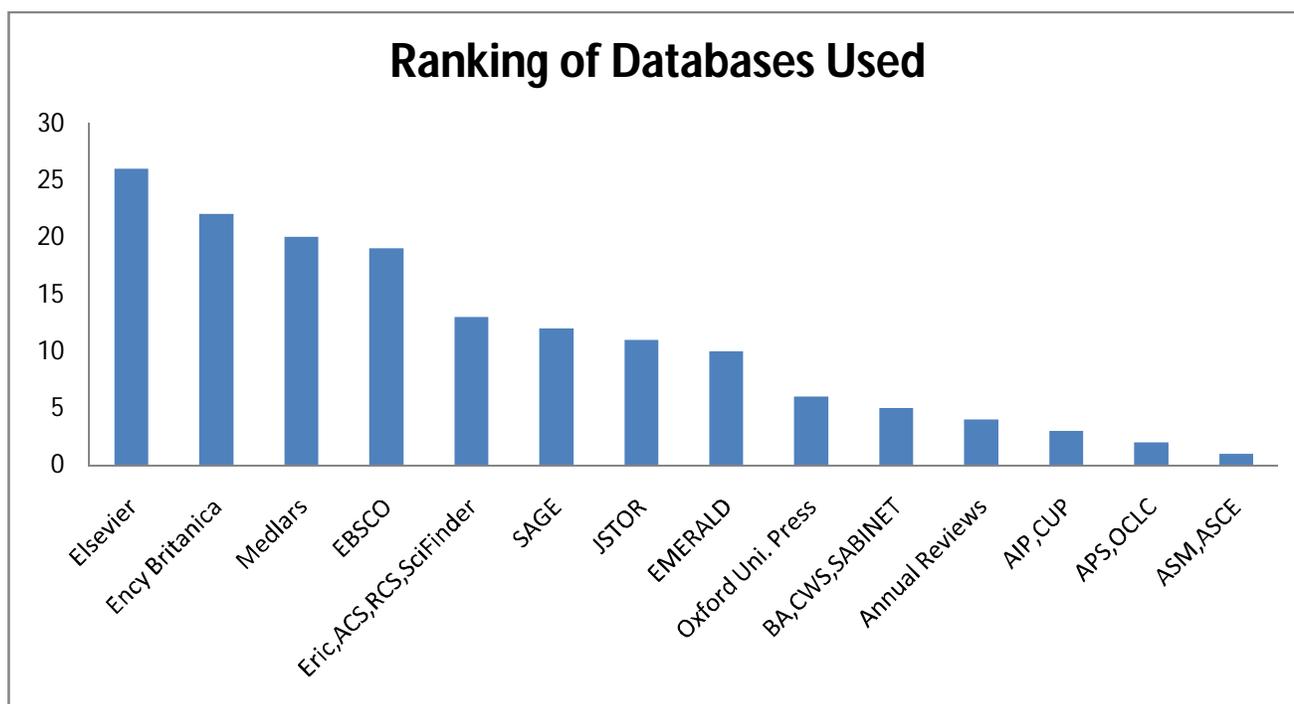
From the above ranking, it is clear that in the category of highly used online databases in the eleven institution of higher learning in Nigeria was the Elsevier (65%), while Medlars (50%), EBSCO (47.5%), Encyclopedia Britannica (55%) were in the category of medium used. ERIC (32.3%), Emerald (25%), JSTOR (27.5%), American Chemical Society (32.5%), Royal Society of Chemistry (32.5%), SciFinder Scholar (32.5%), SAGE (30%) were all in the category of low used online databases, while SABINET (12.5%), Annual Reviews (10%), American Institute of Physics (7.5%), American Physical Society (5%), Cambridge University Press (7.5%), Oxford University Press (15%), OCLC (5%), American Society for Microbiology (2.5%), Biological Abstract (12.5%), American Society of Mechanical Engineering (2.5%), Complete works of Shakespeare (12.5%) were at the very low used category.

The above findings, as observed by the researcher, will in no small measure affect the quality and quantity of information resources and services provided in the libraries. It shows that many relevant and important databases were never utilized for information provision and delivery in the libraries and this will have great impact on teaching, learning and research activities which is the cornerstone of the existence of every institution of higher learning.

D. Challenges of ICT Application, Implementation and Utilization by the Librarians

Table 11: Problems face with ICT Application, Implementation and Utilization

Problems	NO.	%
Resistance to change by members of staff	17	42.5
Lack of training and retraining on ICT	38	95
Lack of computers and Software for implementing ICT-based library	35	87.5
Lack of government support for the program	27	67.5
Lack of private sector support	20	50
High cost of ICT equipment	9	22.5
Lack of policies for ICTs implementation and staff training in the libraries	39	97.5
Students/Users have no knowledge of ICTs	10	25
Lack of management support and leadership for the implementation of ICT-based library	33	82.5

Table 11 shows the range of options given by the researcher regarding the problems faced in acquiring ICT skills by the academic librarians in the eleven institutions studied. The result indicates that, majority of the respondents (97.5%) associated the problems with lack of policies on ICT implementation and staff training in their libraries, while minority of the respondents (22.5%) described the problem in terms of high cost of ICT equipment and facilities.

This minority view corroborated with the findings in the ITU report (2012) which asserts that the price of ICT services has a significant impact on the demand for and spread of ICTs. Prices strongly influence how many people are able and willing to subscribe to a service/facility. The concept of affordability is useful for service providers, policy makers, analysts in ascertaining the potential user base of ICTs and identifying limits on ICT uptake.

Conclusion and Recommendations

The librarians in the eleven institutions studied are severely affected by the problems of technical expertise and digital divide (gap between have and have not technology), this manifested in their inability to make maximum use of the technologies to select, evaluate, acquire, preserve and disseminate information resources. In the digital age, librarians need to be conversant with electronic delivery systems as information can be delivered via e-mail, portals, digital information can also be exported electronically; as well as making their users aware of digital storage and retrieval systems. However, the librarians lack the IT competency to navigate within the collection. This competency is necessary if we realize that in most places there are network problems, and a librarian with ability to solve some IT problems without depending on the IT department will be strategically placed in this era. Therefore trouble shooting courses will be an added advantage and an investment for the Nigerian librarians.

However, for the librarians to be relevant and active participant in the digital information environment, the following steps are recommended;

- The ability to harness and explore to the later current and appropriate technology tools to deliver the best services and make available the most relevant and accessible resources.
- Have the skills to effectively use technology to organize the organization's information asset and to deliver information resources to employees who will use it to make the organization more successful
- The librarians must be sophisticated, flexible and well-grounded in manipulating and exploring the potentials of information and communication technologies to deliver information resources in various forms and format
- The librarians should strive to become experts in communicating and canvassing the value of information within their organization. This will go a long way in creating awareness and recognizing the importance of information to their work and eventual success of the entire organization. This is because organizations must have accurate, reliable and customize information if they are to make informed decisions.
- The libraries should, as a matter of urgency embark on rigorous training and retraining program for their staff as no librarian can thrive and effectively discharge his/her responsibilities without ICT skills and knowledge in this 21st Century information society. There should be a coherent training policy for the libraries on continues and sustainable basis.
- Emphasis should be given to ICT components by the library schools so as to equip their graduates with the requisite expertise to fully harness the potentials of ICT for information resources provision, delivery and dissemination in their libraries as it is being done in other parts of the globe.
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Ocholla (2000) carried out a survey to review and revise the curriculum of the Department of Library and Information Science, at the University of Zululand, South Africa, by means of examining the program. The examination was done through product and market-type analysis. He discovered that sound education in the field of management; information searching, ICTs, analysis and synthesis of information, as well as the ability to perform practical work were regarded as essential aspect of the LIS training.

- There is urgent need for the increase in the budgetary allocation to the libraries by the government in order to raise their ICT affordability status. This is to enable them procure state of the art equipment and facilities for their libraries to transform them in to more responsive and virile to the yearning and aspiration of their users.

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