

Chapter Six

Providing Unlimited Access to Research and Learning Resources

Stephen Akintunde

Introduction

The trend towards uptake of Information and Communications Technology (ICT) for the provision of library services in the University of Jos has its roots in the early 1980s when the first University Librarian – Bartholomew U. Nwafor took particular interest in ICTs. The rationale for use of ICT in the library was to enhance access to library and information services by enabling out of campus access, a shift from use of the library in real time through borrowing of physical resources like books and papers. Effective access to information is a priority in the provision of library and information services in the present era of ICT-mediated services. Today, there is a definite paradigm shift that has transformed libraries and information centres from one physical structure filled with all types of collections, into a gateway where access is provided for resources of a library and other libraries that may have the needed resources.

This chapter discusses how the University of Jos library has attempted to provide unlimited access to research and learning resources to the university community. This is done by discussing the context to the library, structure of the library and its services, infrastructure and resources, access to resources, as well as the challenges that are being faced in trying to institute a more technology enabled university library.

The University Library as an emerging National ICT Centre

The University of Jos Library has undergone several stages of transformation in the provision of services to patrons. What started as a single campus library of the University of Ibadan in 1972 is currently now offering full services to meet the needs of students, lecturers, and researchers in multiple branches. More significantly, the library has been able to capitalise on ICT for the provision of library and information services, in line with the global shift in librarianship practice.

Several seminars and workshops have been hosted in the University in order to take advantage of the library environment, so that participants can learn from the University Library's experience, how they too can develop their capacity in ICT. Participants came to learn about the automation process, the working relationship between the library and the ICT Directorate, and University managers. These seminars and workshops include:

- The Annual Seminar of the Committee of University Librarians of Nigerian Universities (CULNU), April 21st, 1999. This was deliberately brought to Jos, "Library Automation" being the theme of CULNU that year. It was an opportunity for members to see one of Nigeria's university libraries that had taken some concrete steps towards automation. The Systems Librarian was commissioned by the Committee of University Librarians to present two papers – "The Migration: Digitizing University of Jos Library", and "The human side of digitization".
- National Workshop on Computers and Networking, June 14th – 18th, 1999. This was a national workshop of librarians, ICT technicians and managers. Jos was chosen as a venue because of the obvious edge it had over other tertiary institutions in the country at that time. The Systems Librarian was invited to present a paper titled "Computers and networking in the University of Jos".
- National Conference on "Trends in the Development of ICT in the Nigerian University System", February 15th, 2002. The Systems Librarian shared experiences of the University of Jos in his paper "Interweb at the University of Jos", highlighting the synergy between stakeholders in the provision of ICT to support teaching, learning, and research. It was attended by Directors of ICT, Management Information Systems (MIS), and Systems Librarians in Nigerian universities.
- National Conference on ICT Based Legal research in the new millennium, October 8th – 10th, 2003. The Systems Librarian was invited to present a paper on "Computerizing your own library", by sharing the

experience of the University of Jos library. This conference was brought to Jos so that participants could see the possibilities in applying technology to legal research, especially the ICT Legal Research Library at the University's Law Faculty. Participants were legal practitioners in both private and public institutions, lecturers in Law, Law Librarians, and some graduate students from different parts of the country.

- National Workshop on Application of Information Technology Devices in Law Library Management: Court of Appeal in Nigeria, August 9th - 20th, 2004. Again, the Systems Librarian was invited to contribute to this national workshop by presenting a paper titled "Structure and management of digital libraries". University of Jos was chosen as a host for this national workshop also to showcase their experience of applying technology to legal research. This was a workshop organised by the Headquarters of the Court of Appeal in Nigeria. All librarians of Courts of Appeal in the country were mandated to attend.
- National Interactive Library Seminar on Current Trends in Reference Services organised by the National Library of Nigeria, April 23rd - 27th, 2007. The Systems Librarian was asked to present a paper titled "Selection of appropriate software packages for reference services in an ICT environment".
- First Library and Information Technology Today (LITT), Information Technology Section of the Nigerian Library Association, March 19th, 2007. The University was chosen to host this professional librarians and information scientists meeting so that librarians and information scientist could visit the University, interact with librarians and technicians at the University's ICT Directorate and take decisions on the automation of their respective libraries. The Systems Librarian was Chief Host. He also presented a paper "Determining current and future automation needs".
- National Workshop on Digitization of Library Materials: Processes and tools, organized by the National Library of Nigeria, July 16th - 20th, 2007. The Systems Librarian was invited to present a paper "Selection and acquisition of materials for digitization in libraries".

These various conferences indicate that the University of Jos is, today, adjudged a leader among Nigerian University libraries in the provision of access to resources using ICT.

Structure of the Library and its services

The vision of a Teaching Library pursued by the University of Jos Library in 1980 (Nwafor, 1981), on reflection, appears to have been forward-looking: it promotes a client-oriented library service. It is an engaging practice of librarianship where librarians are expected to develop competencies in the most modern practices of library and information service, including the then new trend of ICT. Essentially, the Teaching Library practice provides for Subject Librarianship which offers relevant service by having librarians who are first and foremost qualified academically and then have a technical or library and information science professional qualification to serve in their areas of subject specialization. Thus, a Science Librarian has a qualification in any of the science disciplines and a professional qualification in library and information science. Such a librarian would be more relevant and effective in an academic area than one that has no subject qualification. For instance, in the University of Jos, the Subject Librarian is expected to develop the collection in his/her discipline in full consultation with academic staff and students in the area. Each faculty is also expected to appoint a Library-liaison lecturer who, together with their Subject Librarian does the following:

1. Collection development in a specific discipline or disciplines
2. Provision of reference and information services in the given fields
3. Liaison with the relevant teaching department(s) from which they monitor closely the academic programmes of the department(s) and
4. Mounting of user-education programmes.

This practice was expected to lead to maximum utilization of the library resources. An early study found that it was effective, especially in making students and staff part of the decision-making process in the acquisition of library resources, and in determining the collection building priorities (Avafia, 1983). Additionally, the Subject Librarians have, in the last ten years, been organising several training sessions on the availability and use of electronic resources for their respective faculties. Ogundare and Nwokedi (2010) and Obaje and Chollom (2009) have reported good use of the library's online resources as a result of the sensitization programmes. A few examples of this are cited under 'Access to Resources' below. The organogram of the library is presented in Figure 1.

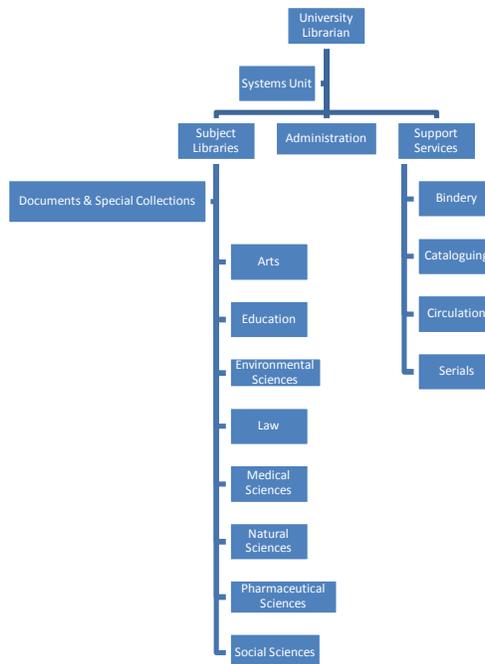


Figure 1. Organogram of the University of Jos Library

Infrastructure

Library Computer Laboratories have been provided in each of the three campuses of the University in order to enhance access to electronic resources. Access is free in order to encourage use of the resources. The laboratory in the Medical Library has capacity for eight users; Naraguta Campus Library has capacity for 30 users at a time, while the Library Computer Laboratory I of the Bauchi Road Campus has capacity for 12 users and, Laboratory II 80 users. There is a third laboratory that is under construction on the Bauchi Road Campus library with a capacity for 60 laptop computers. The primary purpose of setting up these computer laboratories is to improve access to the growing web of resources for teaching, learning, and research.

However, there are also other computer laboratories in the University. Each of the eight Faculties has a laboratory and all are connected to the main server of the university and therefore accessible to the library website. Apart from these, some departments like the Department of Mathematics, Departments in the Faculty of Medical Sciences also have computer laboratories that lecturers and students use to access the internet. Altogether, computers on campus that have access to the internet are about 2,000. Wired and wireless Internet access is provided. The Bauchi Road Campus Library, in particular, has the two types of connectivity. They are provided in order to ensure that researchers are not limited by the cabled network which usually has limited access points, compared to the wireless which provides for roaming.

Resources

Resources available in the University Library range from the traditional hard copies of books, journals, Government and Inter-governmental publications, special collections, maps, audio tapes, video tapes, memorabilia such as calendars, invitation cards, flyers, and micro formats, to electronic resources in the form of digitized off and online resources within the University's Intranet, and the Internet. The library's traditional collection presently stands at 169,404 volumes of books, 25,824 bound journals, and 20,263 documents and special collections (Know your Library, 2010, p.5). The materials are housed in four libraries: Arts, Education & Social Sciences (Naraguta Campus); Law (Bauchi Road Campus); Medical (Township Campus); and Sciences (Bauchi Road Campus), in the three campuses of the University. Access to online resources is also available in these libraries.

Hard copies of texts continue to be available in increasing number. However, in the last decade, there has been tremendous effort to present soft copies of texts. Many of these have been converted through digitization, from hard into soft copies; others are created in digital format.

Books today are readable both in digital and hard copies. The same goes for monographs, and serials - journals, magazines, and newspapers. The periodicals have assumed a higher rate of currency with the availability of online digital facilities. Whereas it takes quite some time - from weeks to months and years for books to be updated by authors or editors, whether hard copies or digital, periodicals are updated frequently. Periodicals publish continuing scientific research which is peer-reviewed and can be updated. Newspapers, for instance, are updated online as events are happening world-wide today. Academic journals are equally available as current as weekly, monthly, quarterly, and yearly (<http://library.uvic.ca/instruction/research/bookvjour.html>).

Audio and video tapes are also available in both hard and soft copies, with an increased need to convert to digital copies so that the content can be accessed in the most convenient format to the user who uses different platforms to access resources. Digitization also improves preservation of these multimedia materials. The keyword in the emerging library is, therefore, "access". This implies that focus is more on the 'content' and easy accessibility rather than the "container" as in the recent past. Both hard and soft copies of resources for teaching, learning and research can be found in most libraries today.

Memorabilia - calendars, institutional flyers, diaries, invitation cards, continue to be relevant for research. These are preserved in archives. In many instances, they serve as reminders of the history of the institution. In many cases, memorabilia are largely in hard copies. However, like other library resources, these are also being digitized. They are usually managed by the Documents and Special Collections Section of the Library under the 'University Archives' Collection.

The library has a comprehensive list of all hard copies, and their classification and location in the library catalogue for books and monographs. Details for serials or periodicals can be found in the kardex which is a form for recording data about the movement of serials. The data include information such as name of the serial, volume, issue number, frequency, and number of issues to date, and address of publisher and vendor.

Electronic resources are identified in several ways, including, browsing and licensing. The Systems Librarian usually takes initiative to browse and identify relevant resources that are in the public domain and are therefore freely accessible, usually under the Creative Commons licence. In other instances, the resources are made available through the Nigerian University Libraries Consortium (NULIB), electronic information for libraries (eiflnet), and partnerships such as the United States Partnership for Higher Education. In the past ten years, the Systems Unit of the library has built capacity of Subject Librarians so that they can effectively browse the Web and identify and aggregate resources in their relevant subject disciplines.

These resources include the eGranary Digital Library which contains over three terabytes of full texts of books, journals, and websites with copyright permissions. The eGranary library concept was developed in Jos while Cliff Missen, a Fulbright scholar from the University of Iowa, Iowa, USA, in the 1997/1998 academic session, sought to proffer a solution to the observable difficulty encountered by scholars in the University who attempted to access resources on the World Wide Web (WWW). It was discovered that the challenges faced by scholars at the University of Jos in accessing resources through the WWW was not peculiar to the university, but was characteristic of individuals and institutions in developing countries in Africa, Asia, and Latin America. These difficulties include, essentially a high cost of bandwidth, and lack of sufficient and up to date computer systems. The eGranary that was eventually created has become, more or less, 'Internet in a box'. It is a very good repository of literature which many libraries in the developing world are finding very useful (<http://www.widernet.org/eGranary/about/endorsements>). Resources are available in virtually all academic disciplines, with a link to real-time online resources. The Widernet organization - (<http://www.widernet.org>) based at the University of Iowa, United States of America developed the database. It is updated from time to time. It is also now possible for academics world-wide to make contributions to the content of the eGranary. The Home page of eGranary Digital Library can be seen in Figure 2, showing the various categories of academic disciplines in which digital resources are available.



Figure 2: eGranary Digital Library Home page

Other available resources in the University Library are:

- **African Digital Library** (<http://www.africandl.org.za>), a website with a wide variety of electronic collections of books, and journals, as well as bookshops with open access.
- **Access to Global Online Research in Agriculture (AGORA)** (<http://www.aginternetwork.org/en/>) set up by the Food and Agriculture Organization of the United Nations Food and Agricultural Organization in collaboration with major publishers to enable developing countries to gain access to a rich 'digital library collection in the disciplines of food, agriculture, environmental science and related social science'.
- **BioOne** – (<http://www.bioone.org>) "is a global, not-for-profit collaboration bringing together scientific societies, publishers, and libraries to provide access to critical, peer-reviewed research in the biological, ecological, and environmental sciences". In 2012, there were 171 titles from 129 publishers that could be accessed freely.
- **Database of African Theses and Dissertations (DATAD)** (<http://www.aau.org/datad/database>) was initially a project of the Carnegie Corporation of New York, with the University of Jos joining as a grantee of the Carnegie institutional capacity building fund in 2006. Abstracts of theses and dissertations submitted to the university are submitted to the project headquarters – Association of African Universities, in Accra, Ghana. In the last two years, member institutions have been encouraged to submit full-texts of theses and dissertations, and furthermore, to place the theses in their institutional repositories.
- **EBSCO – host** (<http://search.ebscohost.com>) hosts several databases, each with thousands of full-text periodicals in the academic disciplines – business, education, legal, medical, the Arts, Environmental Sciences, and Social Sciences.
- **Online Access to Research in the Environment (OARE)** (<http://www.oaresciences.org/en>) is provided by the United Nations Environment Programme (UNEP), in partnership with Yale University, United States of America, and some 50 publishers. Over 2,000 scientific journals are available covering all subfields of natural environment.
- **Health InterNetwork Access to Research Initiatives (HINARI)** (<http://www.who.int/hinari/en>) provides more than 8,000 information resources for health workers and researchers. Like AGORA and OARE, HINARI is sponsored by the World Health Organization in collaboration with major publishers in order for researchers in developing countries to obtain access to medical literature.
- **Journal Storage (JSTOR)** – <http://www.jstor.org>. JSTOR has more than 1,000 academic journals as well as 'over 1 million images, letters, and other primary sources'. The University of Jos was about the first institution in Nigeria to access the JSTOR database of mainly complete back sets of journals (though as

current, in some cases, as the last year). The University Library also served as facilitator in enlisting other university libraries in Nigeria into the JSTOR partnership in 2006. One of the recent innovations in JSTOR is 'Early journal content', with free access to nearly 500,000 articles that were written as far back as a journal can be traced.

- The **National Academies Press Library** (<http://www.nap.edu>) is a website that grants free online access to publications in all the major academic disciplines with options for purchase.
- **Nigerian Virtual Library** (<http://www.nigerianvirtuallibrary.com>) is a project of the National Universities Commission (NUC) which also serves as host on behalf of Nigerian universities. Disciplines covered by resources hosted include agriculture, arts, education, engineering, law, medical sciences, sciences, social sciences, and technology. Resources are organized into 'International Collections' and 'Nigerian Collections'. There are also Nigerian daily newspapers on the website. The University of Jos Library was one of the pilot institutions for the project.
- **Oxford Journals** (<http://www.oxfordjournals.org>) is an initiative of Oxford University Press. It provides access to libraries in developing countries at discounted rates. It now 'includes full and optional open access to more than 90 journals drawn from every subject area.'
- **Questia - The Online library of Books and Journals** (<http://www.questia.com>) provides full-text access to 'over 77,000 copyrighted books and 4 million articles' in all academic disciplines.

Apart from these resources, the Library has also made available research output of staff and students of the University in the **Institutional Repository** (<http://dspace.unijos.edu.ng>). The Institutional Repository, the first of its kind amongst institutions and organizations in the country, was created by the Library and launched in June 2009 (Akintunde, 2010). It is a one-stop access point for all research works and other intellectual outputs and archival materials of the university. Access to the Institutional Repository is open and therefore accessible from any Internet-ready device in any part of the globe. This particular initiative of the library has enhanced the global visibility of the university in the last two years, rising from relative obscurity to the 2nd best ranked university of Nigeria, and 42nd in Africa, in terms of web contents in January 2011 (Ranking Web of World Universities, 2011). Contents are organized along the main faculty arrangement in the university, with a few modifications to cater for resources that are not directly faculty resources. The Home page of the repository is displayed in Figure 3, which also shows the objectives of the repository.

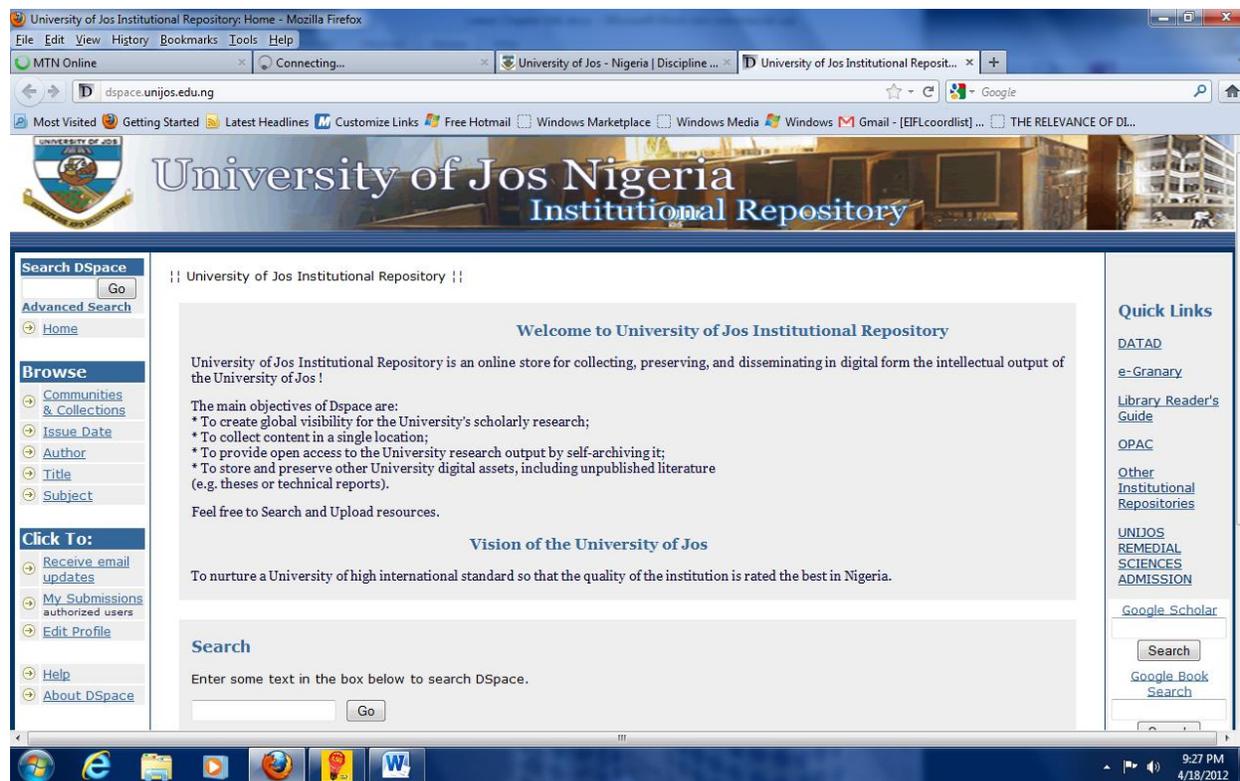


Figure 3: Institutional Repository Home page

Access to resources

Whereas in the traditional library system, access was by physical visits to the library to consult resources, reserve or check out library material, it is now increasingly possible to access library resources online. The library launched an online catalogue – Online Public Access Catalogue (OPAC) (<http://cactus.unijos.edu.ng>) in November 2010. It was one of the initiatives of the library under the Jos-Carnegie project. OPAC provides opportunity to know what resources are available and where to locate these. Reservations can also be made. The database is being populated through the retrospective conversion of catalogue cards, which is on-going. For now, searches can be made online. The Circulation module to be used for the active circulation of resources is the next to be activated. Meanwhile, profiling – that is the definition of user access levels is in progress, after which activation of the module would be done.

The present development in the University Library means that access to resources can be initiated either online or locally – through the card catalogue, thereby throwing open the doors of the physical library to an unlimited access to ubiquitous library resources. Resources have tremendously increased, and so have access points. Figure 4 shows the home page of OPAC.

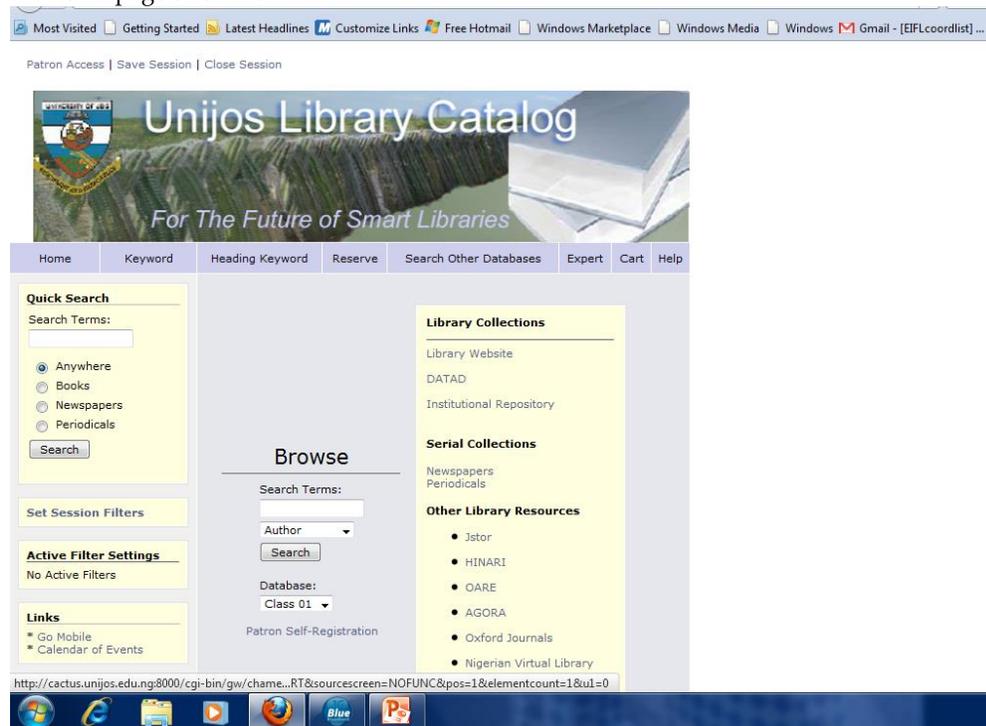


Figure 4: Online Public Access Catalogue – Home page

Access to all the electronic resources is essentially via the University of Jos Library site. Most of them can be accessed directly within the institutional Internet Protocol range as they are institutionally subscribed to. The resources include those that are subscribed to institutionally, and the free and open resources harvested on the Internet. However, the Subject Librarian is, in most cases, able to provide access codes, where needed. For instance, the World Health Organization sponsored databases like AGORA, HINARI, and OARE are very strict in the usage of their access codes, as they want to ensure that the benefitting individual is a researcher in a third world institution.

The figure below shows a world map of where the University of Jos Institutional Repository is being accessed. Statistics generated from the usage of Institutional Repository also show that several materials in the Institutional Repository are being accessed and used from all over the world, as seen in Figures 5 and 6.

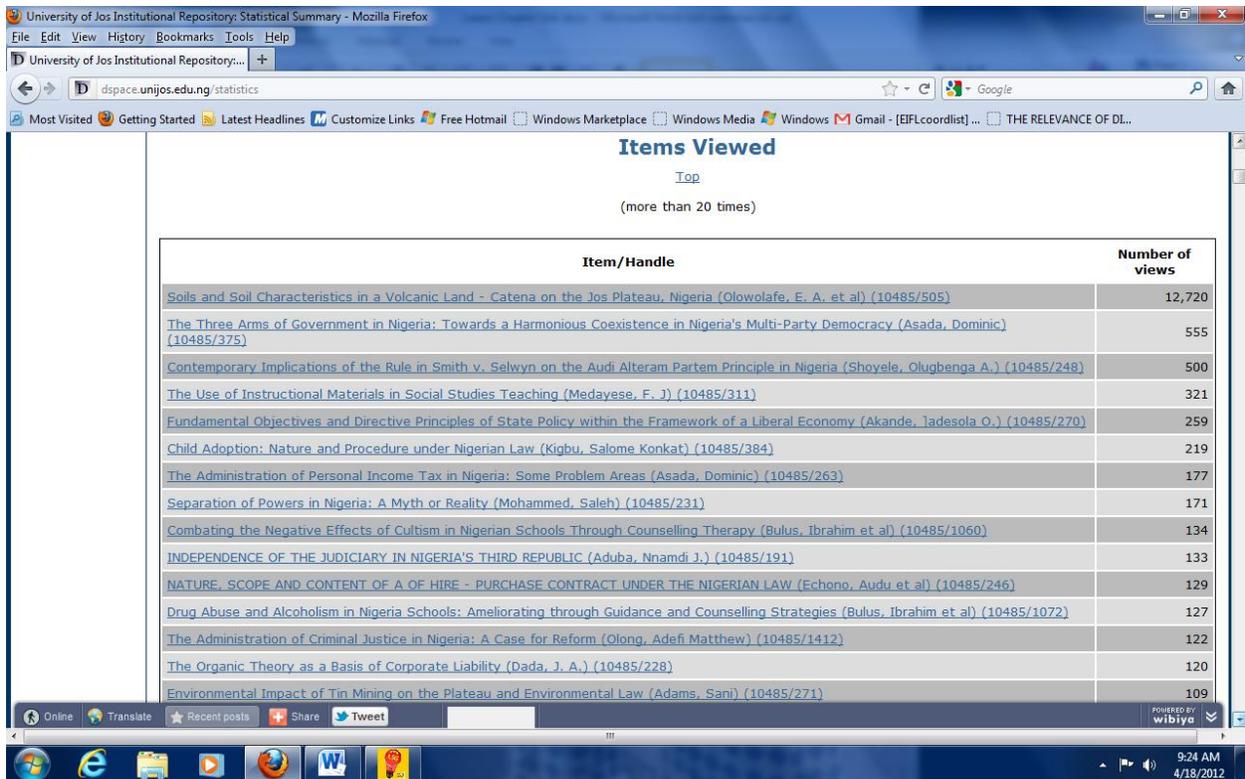


Figure 5. Sample statistics of usage of materials in the University of Jos Institutional Repository.

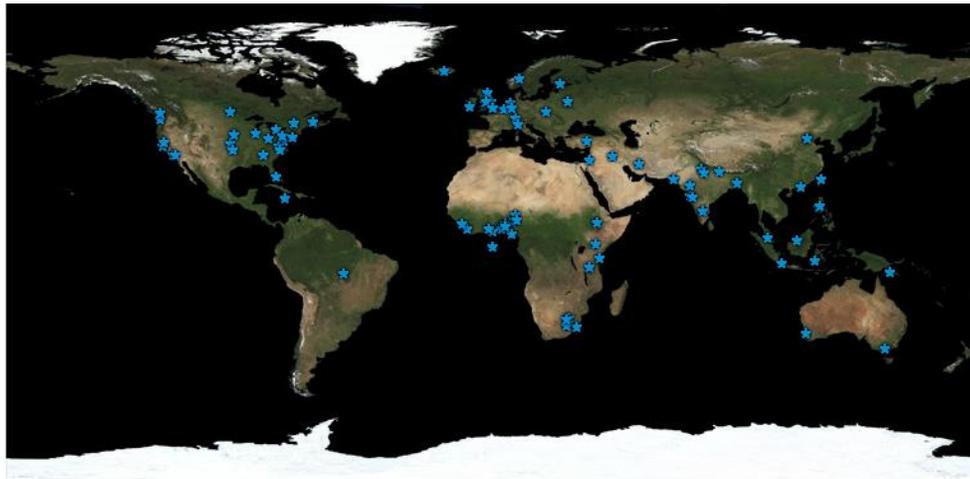


Figure 6. World Map showing access to the University of Jos Institutional Repository

In a study of the use of subscribed online databases by lecturers in the Faculty of Natural Sciences, University of Jos (Ogundare & Nwokedi, 2010), it was found that 78.69 per cent of the 61 lecturers interviewed 'frequently' use the databases. It was also discovered that 83.61 of the lecturers 'rely' on the Library's subscribed online databases for academic activities. The databases used, in order of preference are: Journal Storage (JSTOR), EBSCO HOST, Oxford Journals, Hinari, Database of African Theses and Dissertations, Online Access to Research in the Environment (OARE), Nigerian Virtual Library, and Access to Global Online Research in Agriculture (AGORA).

In another study on the extent of Internet Use by undergraduate students in the Faculty of Law (Obaje, 2009), it was found that most of the students are making good use of Law resources to support their studies. Out of the 280 surveyed, 67.5 percent use Westlaw, while 26 percent use Hein Online. These resources, as well as those cited in the previous paragraph, are accessed both in the library computer laboratories and remote computers.

Challenges

The small steps that the University of Jos Library has taken in placing resources online and making them available has made some impact, both within and outside of the University, at least from the evidence gathered so far. It is only a beginning. There are heights to reach. However, the rate of digitization and accessibility could be improved if, for instance, some infrastructural issues are addressed. Electric power supply to the University's server is a major infrastructural need that the university is still struggling with. Many users have attempted to reach the University website without being able to because the server is down. For instance, data from Google Analytics showed that from February 16 to March 15, 2012, out of the 102 visitors that attempted to reach the library's web site, only about 42 per cent were able to, while 58 per cent bounced. This was the same time that the University experienced serious power challenges. Electric power supply has been a major challenge in the University in the past few years. The University Management has been making efforts at overcoming the power challenge, including several options for alternative power supply. Currently, the library's server is at the university's data centre; so that whenever there was power shortage at the datacentre, the server would not be accessible. The university ICT policy states that all servers in the institution should be resident at the datacentre.

The library's sensitization programme needs to be sustained because staff and students keep moving in and out of the system. The training will require competencies in navigating the web, identifying appropriate information, and keeping track of new resources. Librarians now have to do more than providing resources and making them accessible. They will have to devise programmes to ensure that patrons *find* information. Information literacy will have to be embarked upon, where literature search strategies will be taught and skills acquired (Eisenberg, 2008). It is a necessity for both patrons and particularly Subject Librarians who serve as information gate keepers (Information Literacy, 2012).

Conclusion

The foregoing discussion has highlighted how the role of the librarian has become more exciting, where provision of real-time and interactive access to teaching and learning resources seems to be the emphasis, compared to the previous situation where the librarian waited for patrons to physically walk into the library, to approach the librarian who appeared as a 'sage' that had custody of knowledge. The transformation is illustrated in Table 1.

Table 1. Changing role of Librarians

Role of Librarians	
Before advent of ICT	During ICT era
Catalogues books manually	Catalogues books using computer-aided systems
Classified books manually	Classifies books using computer-aided systems
Relied on physical presence in charging books	Charging of books done increasingly remotely
Manual indexing	Computer-aided metadata indexing
Materials acquisitions done manually	Acquisitions done online
Efforts made at providing library guides	Library websites provide all necessary instructions and links to effective use of resources
Users' Guide prepared and delivered manually	Users' Guide provided in the form of 'Online Tutorials' available 24/7
Library acquires and processes physical library materials manually	Librarians actively involved in digitizing collections
Access to other libraries done physically by special permission	Access to resources in other libraries done remotely
Single access to libraries, i.e. a patron may visit only one library at a time	Multiple access to other library and information services provided through web links

Design of physical library in concert with architect by provision of briefs	Design of library websites with electronic resources
Population of library through acquisition of physical books, journals, and other resources	Digitisation of library resources

The changing role of the librarian is a result of the increasing application of ICT to library practice. Traditional roles such as cataloguing and circulation of materials require more expertise on the part of librarians who now have to operate within global perspectives, since their increasingly online services are visible world-wide.

The University of Jos has indeed come a long way in the provision of unlimited access to resources for teaching, learning, and research. From a little hard copy collection of static resources has grown a more interactive, dynamic, and global resource base. Growing with the resources has been accessibility which is becoming more and more limitless. The library has been able to respond, not only to the training needs of librarians and patrons, but, also, modestly, in the provision of infrastructural facilities and access points. Certainly, the library of the University of Jos today is a metamorphosis of the same library 12 years ago, due mainly to the application of ICTs. The support of Jos-Carnegie Partnership Committee in reaching major milestones is acknowledged. There is still room for improvement as the library pursues excellence in the delivery of ICT based services that are relevant, effective, and efficient.

References

Akintunde, S.A. (1996). New Developments In Literature Search in the University of Jos Library; An Invited Paper presented at a *Seminar on "Critical Issues in Academic Research, Training and Publishing"*, organized by the School for Postgraduate Studies, University of Jos, March 20, [year]

Akintunde, S.A. (2010). Blazing the trail: Institutional Repository at the University of Jos. *Nigerian Libraries: Journal of the Nigerian Library Association*, 43: 1-19.

Avafia, K.E. (1983). Subject specialization in African university libraries. *Journal of Librarianship and Information Science*, 15(3): 183-205.

Eisenberg, M.B. (2008). Information literacy: essential skills for the information age. *DESIDOC Journal of Library & Information Technology*, 28(2): 39-47.

Information Literacy (2012). http://www.webs.uidaho.edu/info_literacy/ Accessed April 18, 2012.

Nwafor, B.U. (1981). The problem of the blank cheque. *Nigerbiblios*, 1-2: 9-15.

Obaje, A.M. & Chollom, K.M. (2009). The extent of Internet use by undergraduate students of the Faculty of Law, University of Jos. *Nigerian Journal of Library, Archival and Information Science (NJLAIS)*, 1 (8): 15-27.

Ogundare, T.I. & Nwokedi, V.C. Extent of awareness, use and reliance on University of Jos subscribed online databases for academic activities: a case study of Faculty of Natural Sciences lecturers. *Tincity Journal of Library, Archival and Information Science (T-JOLAIS)*, 1(1): 9-18.

Ranking Web of World Universities January 2011. Top Africa (2011). <http://www.webometrics.info/> Accessed February 5, 2011

University of Jos (2010). *Know your library: a reader's guide to the libraries*.

University of Victoria Libraries (2012). Books vs. journals, newspapers & magazines. <http://library.uvic.ca/instruction/research/bookvjour.html> Accessed January 7, 2013

Endorsements (2013). <http://www.widernet.org/eGranary/about/endorsements> Accessed January 7, 2013.