Electronic Resources Provision and Internet Accessibility Challenges in Nigerian Academic Libraries

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Accepted 2³nd November 2011.

INTRODUCTION

The evolving information and knowledge-based economy has resulted in a climate of transition and change especially in academic libraries around the world, including Nigeria. As universities, polytechnics and colleges make the transformation to learning organizations, academic libraries as constituents of their larger parent organizations are rethinking and exploring new ways to reposition themselves in the campus environment in view of higher expectations of their various stakeholders, pervasiveness of information technology, increased availability and focus on electronic resources and services, and the need to become learning and research centres to support a wide range of educational initiatives.

Library is an indispensable organization in every tertiary institution. It is the heart of a University or College that provides access to the various resources: print, non-print and digital. All the services rendered impose certain challenges on the library. Maintaining a balance between the technologies and the conservative role of libraries becomes expedient.

The traditional services rendered by the library include, readers’ services, reference services, reprographic services, current awareness services (CAS), selective dissemination of information (SDI), etc. However, the advent of ICT has expanded the scope of these services and the tools of information delivery. Today we have e-library and virtual library which provide access to electronic books and journals, online references, web-resources, web-catalogues etc. This “Web-eccentricity” poses a lot of challenges to librarians and information scientists as well as the traditional library users. The challenges are both operational and strategic. The attitudinal challenge is another dimension that needs to be addressed. The questions being asked are as follows; Are we e-ready in Nigeria? Are the youths which form about 40% (Ovia, 2008) of the population empowered to move into the information age? How about the future of library and librarianship in Nigeria? Where would library service be in the next 10 years?

Objectives

This paper examines the challenges faced by academic libraries in accessing electronic journals and internet resources in Nigeria.

DIGITAL AND ELECTRONIC RESOURCES

Digital resources are those resources whose deal with both digital and digitized materials which can either be accessible from library’s in house database or from the world wide web. Digitized materials means e-journal, e-newspapers, e-magazine (Academia.com, 2011). These files that can only be accessed by a computer. The files are generally kept as floppy diskettes. Other electronic resources storage formats include CD-ROM discs as well as internet resources (Aina, 2004).
Electronic resources include the followings:

- Online indexes
- Electronic books and texts
- Electronic journals
- Electronic catalogues (library catalogues)
- Reference sources
- Statistical sources
- Sound recordings
- Image databases (art, Maps, Medical etc).

E-resources can only be accessed via computers. The import of this is that, for a library to render e-resource service, it must have computer facilities and the infrastructure to support such. These include consistent electricity, air conditioned rooms/halls, Computer literate staff and library users, maintenance culture, fund for subscription, etc. But we all know some challenges are posed by all these requirements in present day Nigeria.

Another import is that, of all the types of libraries in Nigeria vis a vis e-services, it seems only the Academic libraries are moderately equipped to render e-services presently (Edem, 2008). This is due to the fact that academic libraries are well developed and staffed in Nigeria compared to either, the public, school, college, archives, special or preservation libraries. Research and foreign organization libraries like the International Council Library, United States Information Services (USIS), etc. have e-resources well deployed. Some private secondary schools are also well equipped with ICT facilities and internet accessibility.

**ELECTRONIC SERVICES PROVISION AND CHALLENGES FACED BY ACADEMIC LIBRARIES**

In the late 20th and early 21st centuries, library automation and the internet revolutionized information access and the library operation around the world. The effect on academic institutions has been profound. It enables users to access library resources from sites hundreds of thousands of miles away. Libraries in academic institutions can now provide information access to off-campus faculty and students wherever they are located.

To meet the ever increasing demands for information availability, academic libraries must now subscribe to electronic resources such as e-books, full text journals and online bibliographic databases in addition to the print formats. While the availability of these electronic resources enables remote access to needed information, concomitantly, they present issues and challenges.

Some of these issues and challenges are operational, strategic and attitudinal.

**Access control**

**Personnel and workload**

Overlapping coverage of the same title by multiple vendors

Town and Gown initiative

Cost implications of e-resource subscription and other Collection Development issue (Print and Digital)

Complexity of virtual library, e-resources computing facilities (Appropriate Hardware & Software)

Funding

All these are challenges and not impediments.

Simply defined, impediment is “a situation or event that makes it difficult or impossible for someone or something to succeed or make progress” (University of Chicago, 2009) While a challenge, according to the Longman Dictionary of Contemporary English, is “something that tests strength, skill or ability especially in a way that is interesting”.

Some of the challenges identified by the authors include:

1. **ACCESS CONTROL**

With traditional print journal subscriptions, libraries own the printed issues which they can bind and archive and any library user can come to the library building and use them. The library has total control of these printed materials and users access poses no significant problem except for copyright law which has to be respected. With electronic journals, however, users access becomes somewhat problematic. Since electronic materials are no longer physically located in the library, control of access to them is no longer under the dictates of the library but that of the providers, who are publishers, vendors and aggregators (Armstrong et. al., 2009). Library users expect to access all articles seamlessly and reading from all remote sites. Providing access to users is problematic because of the different ways providers allow access to their online material. Some electronic resources providers control access through:

1. **ID login and password**
2. **IP authentication**
3. **Licensing policies**

Unless the database is free, item 1 -3 above, pose inherent problems. The writers are aware of many librarians who have experienced wanting to access some sites and could not do so because of non-subscriptive right. That is, paying for right to access these sites. The issue of subscription and, its attendant challenges create a dilemma. For instance a collection development librarian in Nigeria would have to ask the following questions:

Do I pay for a database when an alternative one is free?

Do I emphasize acquisition of print materials and de-emphasize the digital resources since we are in a developing nation or more library users still request for print materials.
With scarce resources, is it not better to use the meager budget for the “physical” that the “virtual” or abstract? A conservative approach to things you would say. National University Commission (NUC) virtual library is an example of control over access. (No subscription, no access – NULIB, a consortium of University libraries in Nigeria is addressing this issue with regard to EBSCO host database via Eifinet)

(2) PERSONNEL AND WORKLOAD

The internet is now embedded in our everyday lives and most of us are accustomed to using search engines, communicating via e-mail, finding information, purchasing books and airline tickets online, using blogs, instant messaging or social networking and media sites connect. However, most of our colleagues, professional librarians and faculty counter-parts still think of the library as a physical entity. Physical use of libraries has not diminished. People still seem to appreciate the print formats over the digital formats.

With the advent of e-journals, comes a paradigm shift. An assumption is often made that providers take over the work previously done bye staff, and that less work from staff is required since everything is online. In reality, work is not reduced but shifted to new activities and responsibilities. Since e-journal collections are located on servers of the resource providers, library staff have to find new ways to track inventories. Journals have become elusive because they are no longer physical entities that can be held in the hand and placed in physical locations in library buildings. They are now tracked in some library system such as Online public access catalog, (OPAC), locally maintained spreadsheet or via online administrative modules made available by vendors.

With thousands of e-journals available online in academic libraries, a librarian’s role involves substantial investment in time and effort in:
- Establishing a gateway to providers’ servers
- Maintaining active and accurate links to journal titles.

Adding new journal titles.
- Tracking titles that provide electronic access with print subscriptions.
- Ensuring coverage changes and title changes are up-to-date.
- Updating URL changes.

Since information of this nature is rarely forthcoming from the providers themselves, library staff therefore need the skills and expertise to track down the information.

Apart from the challenges of e-journals, libraries continue to be under ever increasing pressure to enhance the technological capabilities in order to meet the academic demands and compete with alternative information providers for survival. This transition period of shifting to the modern librarianship from traditional librarianship is very crucial particularly to the librarians of developing countries as they are experiencing severe shortages in terms of funds, technical personnel and ICT experts.

In addition, there is an obvious reluctance towards the technology and new information media from the part of users as well as from the part of the library staff. The main reason for this divergence is the fear of technology due to lack of confidence. However, the situation is improving rapidly even here in Nigeria.

(3) OVERLAPPING OF COVERAGE OF SAME TITLES BY PROVIDERS

Libraries are trying to acquire quality information in the most efficient and effective means possible. To achieve this many are joining state, regional and national consortia for better group subscription discounts. Here in Nigeria, the NULIB Consults Nig. Ltd. is a consortium which the University libraries formed. (Further information on this is on www.nulib.net.)

Though the price per journal is lower when libraries subscribe to electronic journals through package deals, there are numerous overlaps in coverage of the same titles and libraries end up purchasing the same journals from different providers. Table 1 below shows this:

<table>
<thead>
<tr>
<th>Journal Title</th>
<th>Resource Provider</th>
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<tbody>
<tr>
<td>Journal of Animal Ecology</td>
<td>Eco, JSTOR, Synergy</td>
</tr>
<tr>
<td>Journal of Animal Science</td>
<td>Highwire, Pro Quest</td>
</tr>
<tr>
<td>Veterinary Microbiology</td>
<td>Ingenta, Science Direct</td>
</tr>
<tr>
<td>Veterinary Parasitology</td>
<td>Ingenta, Science Direct</td>
</tr>
</tbody>
</table>

Duplication of subscriptions to the same journal through different providers invalidates the lower price per journal of package deals. Besides this, overlapping creates confusion among library users because of their different user interfaces. This in turn creates challenges for reference and bibliographic instructions.
(4) TOWN AND GOWN INITIATIVE: THE MORAL DUTY AND RESPONSIBILITY TO EDUCATE OUR COMMUNITY VIA COMPUTER LITERACY DEMOCRACY.

The various universities owe their environments the responsibility to get the young ones who are the leaders of tomorrow educated on computers – computer literacy. Today’s digital society is characterized by e-education, or e-learning, e-commerce, e-registration, e-signature, e-library, e-mail, e-pals, etc.

Information age or Information revolution led to digital revolution Countries now fight over control of information, not natural resources – Switzerland perhaps the richest country in the world is a great and wealthy country today because of all the information they have there, not natural resources.

Youths between the age bracket of 10 and 25 account for about 40% of Nigerians population. By year 2012, it is expected that all schools, federal, state and private would be equipped with computers. The United Nation Development Project (UNDP) Human Development Report (2001) rated Nigeria low on Technology Achievement Index (TAI), largely as a result of poor human skills and technological capacity. The Computer Nigeria Initiative (CNI) would definitely remedy this poor rating.

Nigeria needs to become globally competitive looking at internet diffusion in Nigeria, the country still lags behind as it ranks below other African countries (See Table 2 below) such as South Africa, Egypt and Zimbabwe in internet penetration (Ovia, 2008).

Table 2: Internet diffusion in African countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Population</th>
<th>Internet users</th>
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<tbody>
<tr>
<td>South Africa</td>
<td>44m</td>
<td>3million</td>
</tr>
<tr>
<td>Egypt</td>
<td>71m</td>
<td>600,000</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>11m</td>
<td>500,000</td>
</tr>
<tr>
<td>Nigeria</td>
<td>120m</td>
<td>350,000</td>
</tr>
</tbody>
</table>

(Source: Ovia, 2008)

Internet Service Providers (ISP’s) in Nigeria has grown from 50 in 1996 to over 290 in 2008. For instance in the Lagos State University, almost all staff have PC’s in their offices connected to the internet. The ICT centre coordinates all computerization efforts on campus. The customized software for e-registration, e-payment, examinations and Records, and the Data processing unit is locally produced by young Lagos State University graduates working in the ICT centre. In essence, uneducated people do not produce new technologies. Our youths must be empowered knowledge – wise.

(5) COST IMPLICATIONS OF E-RESOURCES SUBSCRIPTION

Acquisition involves acquiring and securing ownership of electronic resources such as databases, e-books and journals through license. Subscribed electronic resources are stored on a remote server hosted by the vendor and made accessible to a target community after authentication and authorization. The shift from owning information resources to licensing information is a crucial policy change in collection development and acquisition. The e-collection comprising of free web-based, open access and fee-based resources which require acquiring and securing ownership of digital content through license should be carefully considered by libraries. Appendix A lists some free databases and open access sites for libraries in developing economies. The question is to pay or not to pay?

(6) COMPLEXITY OF VIRTUAL LIBRARY, E-RESOURCES, AND COMPUTING FACILITIES

Virtual library services and digital resources delivered over the internet which depends on network operating systems running on web server computers. The enabling technologies deployed in a virtual library are web-based technologies that include using Hypertext Markup Language (HTML), Extensible Markup Language (XML), cascading styles sheets (CSS), and web scripting languages such as Java script. Virtual library applications depend on relational databases for organization, storage and retrieval of information. Some popular relational database management systems include MySQL, Oracle, PostgreSQL, and Microsoft SQL server.

The computing facilities must be appropriate, and the hardware and software adequate. The bandwidth must be accommodating taking into consideration the population of users. Careful planning and well thought-out investment consideration are all it takes to have a good IT deployment. In corroboration of the above consideration, Burgstahler (2009) offers the following advice:

“Seek high level support within the library organization” and build on the expertise and experience of others”

(7) FUNDING

The issues of funding is becoming an over flogged issue. The need for provision of adequate funds was supported by Ibidapo-Obe (2009), founder, Computerize Nigeria Project (CPN), when he said:
“The CNP Arena would be huge investment that can only be rationalized by the value that the concept would add to the Nigerian economy. It would create more employment for Nigerians, it will also bring the potentials of IT nearer the Nigerian economy. It would create more employment be rationalized by the value that the concept would add to

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It is obvious from the nature of the learners and current developments in the educational sphere that a great challenge is before a library in this dispensation. Never has the library been confronted by a greater challenge than now. The “armchair” system where the library only consults or is consulted within its own four walls was the order of the day. The reality in this, old stereo typed order will only tag the library an “irrelevant organization” The least the library can do is to be productive, swift and responsive. As the new educational system is being redefined, reshaped and refocused, the library must move to new paradigm and strategic planning in the following ways:

- Partnership with faculties.
- Collaborative partnership among libraries i.e. pooling resources together.
- Application of ICT and deployment of same to learning and teaching (digital library service or virtual library – web accessible databases and online collections.)
- E-learning initiatives e.g. online teaching, interactive video conferencing, e-learning and other educational technologies.
- Workshops and Training courses on SMART classroom, PowerPoint, Web Design, Video conferencing, course tools and design. These could be organized by the library and the Multi Media Centre of our various Universities.
- Teaching Information literacy skills and computing skills impacted through adequate teaching and resource delivery.

CONCLUSION

The future of libraries is being shaped today by emerging technology that is transforming the way information is created and disseminated. One indicator of the future of libraries is that push to provide increasing amounts of information in electronic format. Traditional libraries are being and would continue to be converted into new flavours of digital or virtual libraries – we would now ask how much do I spend on print or electronic content products? In education, much scholarly communication contents are still prints only. In Government, there is a large aging workforce with an aversion to electronic resources. In Law, there is inadmissibility of electronic evidence, a lacunae under the evidence law of Nigeria. In all sectors, challenges abound.

At a session on the future of libraries held on Anaheim, California, during the 2008 ALA conference, Frye-Williams, the speaker had a lot to say about how libraries and Librarians can move forward.

“Libraries should be about relationships rather than that transactions and libraries should be more and more a
place to do stuff not just to find stuff, we need to stop being a grocery store and being a kitchen."

She says that libraries greatest challenges “come from within” Institution inertia and a lack of focus on trends and the future are also evident in libraries. She urged Libraries to keep a close eye on how businesses change and the power of blogging and says Libraries that embrace these ideas and attitudes will overcome the challenges of budget, limitations of space and mindset. Today, many look to Google, not the library when seeking information, Netflix when seeking movies, Amazon when looking for books. These and other online businesses have an insatiable appetite for personal data; privacy is often forfeited by the consumer, in exchange for the convenience of the service. What businesses do with personal data depends, but what libraries do is almost certain, they won’t divulge it, at least not without a fight. The more libraries outsource services and even products like e-books and what not, the more the data is potentially outside our ability to keep privately.

RECOMMENDATIONS

It is imperative that all library staff be web technology skilled, and adopt these new skills to assist library users in an ICT environment. In addition, librarians must be more assertive and confident in their professional duties. Training and retraining of staff i.e. all Professional and the supporting staff would go a long way in redressing this challenge.

Training of librarians would equip them with the knowledge of:
Knowing the criteria for setting up a digital library resource and the right attitude to choice of database services including e-books and journals.
Understanding how to manage a virtual library for efficient service delivery. (Note: if it is free – then someone somewhere is paying for it).
Acquiring adequate exposure to current database links and integration.
Combining librarianship and information technology to enhance competency at work.
Having knowledge of dominant databases and the vendor.
Maximizing the use of databases e.g. EBSCO, AGORA and others at our disposal.
Building their own databases e.g. digitizing projects, theses, staff publications etc.
Using appropriate database tools for SDI appreciation.

To alleviate this problem of overlapping of same titles by providers, libraries may need special software like SFX which is an article linking software program to list multiple resource providers for the same title in order of preference. In addition, librarians should try and locate providers which give FREE Access to e-journals to libraries in developing countries and maximize usage of these sources instead of paying for an alternate source – This way, scare resources are judiciously utilized.

Lastly, it is suggested that libraries should seek more grants and other sources of funding (e.g. Education Tax Fund (ETF), Petroleum Tax Development Fund(PTDF), etc) to establish necessary information infrastructure.

REFERENCES


APPENDIX A

EXAMPLES OF FREE E-RESOURCES AVAILABLE FOR DEVELOPING COUNTRIES

African Digital Library: - Provides free access (to anyone accessing from Africa) to full textbooks. If a “users” domain name can be identified as being in Africa, users are able to receive registrations immediately. (Library established by techno 5th Africa’s centre for lifelong learning and the association of African Universities in collaboration with net library, a Private American company [http://www.africandl.org.za/ejfl.net]. Electronic Info for libraries.

Global Development Network (Free Journal Access): - Offers scholars in developing countries free online access to thousands of full-text journals articles in Social Science Journals. GDN-NA connects developing country researchers with researchers in with AM. A project of center for GD.N and project MUSE of the John Hopkins University Press. [www.lgdn-na.org/journals]

IDEAL –Now Science Direct: - Offers reduced subscriptions to online Science, technology and medicine journals “to countries conforming to the World Bank Definition of “(on income countries) i.e. those with GDP per capital of us $760 or less. This group includes sub-Saharan African Countries. [http://www.info.sciencedirect.com]

Internet Bookmobile: - The book mobile is a mobile digital library capable of downloading public domain books from the internet via satellite and printing them anytime, anywhere for anyone. Read about visit to Bibliotheca Alexandrian in Egypt. [http://www.archive.org/texts/bookmobile.php]

JSTOR – Open Africa: - JSTOR’s digital library of full text academic journals is free for any academic on not-for-profit institution on the continent of Africa. JSTOR was established as independent not-for-profit org. in August 1995. [http://www.jstor.org/about/africa/openafrica.htm/]

Licensing Digital Information – Development Nations Initiatives: - to bring high quality, peer-reviewed sciences journals for free or very cheaply to developing nations. High wire press, WHO and Science Publishers (Blackwell, Elsevier Science, Springer verlag, John Wiley, wolters Kluwer Int’l) all provide free or nearly free access to a number of world’s peer – site hosted by Yale University. [http://www.library.yale.edu/license/develop.shtml]


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