Towards University Library Support for Cyber-Education

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This paper discusses the need for university libraries in Nigeria to support cyber-education or cyberscience. There is the move from the traditional print-based system to the automated system of library services. Most recently, the birth of digital environments has led to the introduction of virtual libraries and online services which enhance the output of libraries and meet the demands of users in places where they have been adopted. This paper encourages the support of cyber-science or cyber-education in Nigerian university libraries as a way to meet the changing needs of university communities. It highlights the transitions from the old to the new and recommends ways to fulfil the needs of all stakeholders in the university environment.

Introduction
The mission of the university library is positioned on the expectations and the functions of those it serves; the teachers, students and other members of the community. It is a subsystem in the university and invariably a system having some entities which work together to produce output (Kraft & Boyce, 1991). A system is dynamic and responds to its internal needs through evaluation and or feedback mechanism. The dynamism in the university environment is reflected on the change from the traditional teaching and learning methods of imparting knowledge to interactive learning (Iloeje, 2001) or cyber-education. Cyber-education involves teaching and learning process based on networked personal computers, electronic mail, internet work as well as on and off-line databases. World wide web (www) electronic publications, discussion lists, newsgroups, as well as electronic conferences, digital libraries and robotics are also part of it. It is therefore necessary that university libraries in Nigeria re-evaluate the current systems of operation vis-à-vis current needs for imparting knowledge.

Based on the foregoing, this paper is positioned to examine the traditional mission of the university library in Nigeria with the accompanying operations and skills. The changing trend in the university library is reflected in the inputs, operation and skills will be examined. And finally the implication of the changing trend to the university library and librarian will be noted.

The Traditional Mission of Nigerian University Library
The functions of Nigerian university whether of the conventional type (i.e. offering courses on Humanities, Social Sciences Sciences and Technology) or the specialized ones include teaching, learning, research and provision of community services. These functions are performed in order to actualize the four national requirements of higher education as indicated in the National Policy on Education (1981).

Thus the traditional mission of the university library outside the peculiarity of the
parent body include:

a. Teaching: Materials are acquired and processed for use by faculty members. Furthermore, the library provides bibliographic instruction on the use of library:

b. Research: Materials are also acquired and processed for research purpose while librarians are engaged in research to improve on their profession.

c. Information Dissemination: This is done through exhibition, current awareness services and selective dissemination of information and or periodical routing;

d. Manpower Development: In-house training is always organized. Staff are also engaged in continuing education through seminars, workshops and conferences to enable them serve the university with state of the art knowledge and skills.

e. Archival: University libraries serve as custodians of materials from within and outside the university;

f. Recreation: Light reading materials and other non-prints are provided apart from the materials needed for the course of study;

g. Extra-Institutional: Other services are provided for the development of humanity and Nigerian society (Anafulu, 1996).

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**Traditional Operations and Skills**

The functions enumerated earlier are achieved through the services of the university library. Pruett (1986) noted the services as acquisition of library materials, reference services, inter-library loan services and manual searching of published literature. Other services are compilation of bibliographies, abstracting and indexing services. Cataloguing and photocopying are also part of these services. Also included here are compilation of new acquisitions list, translation services, periodical routing and maintenance of files of audio-visual materials etc.

The services are provided under different operational mode depending on the management style of the library namely; Administration, Collections Development, Technical services and Public or Readers Services. Of a later development is the subject specialization operational mode. The skill a staff has acquired through formal education or developed in the course of his work determines his efficiency in the operational mode under which he serves.

Some of the traditional skills are:

A. Management skills: Personnel, finance/budgeting, public relation and other administrative skills;

B. Collection Development skills: Identifying of new publication in a subject field, refreshing of library stock through evaluation and weeding, judicious selection of new materials, budgeting and accountability etc;

C. Public services skills: Good rapport, communication, request
analysis, time consciousness, knowledge of library stock, speed and accuracy etc;

D. Technical services skills: knowledge of classification scheme, university subjects/courses, departments and schools/ faculties; filing/ alphabetisation, and library statistics etc.

The traditional university library materials are books, abstracts, indexes and serials. There are also pamphlets, maps, patents specifications and audiovisual materials. Also included in this group are projects/thesis/dissertations and other university documents. The setting in terms of operations and skills no doubt satisfies the traditional needs of the environment, which the university library serves.

The Changing Trend

From inception, university libraries in Nigeria operated under the traditional education environment handed down in the 1940s by the Colonial masters. Library materials, and of course, information materials at that point were basically prints.

In the 1980s with the introduction of personal computers came the automated libraries operating in automated environment. Library materials have transited from print forms to CDs, microforms, diskettes, etc. Just recently the NUC introduced the concept of Virtual Library in Nigeria and by so doing launched the Nigeria university into cyber-science (which is characterized by electronic research and publishing) as an environment for digital library. Many university libraries subscribe to both online and offline databases. There are the Essential Electronic Agricultural Library( TEEAL), Commonwealth university Document Online Services(CUDOS), Health Internetwork Access to Research Initiative (HINARI), Access to Global Online Research in Agriculture(AGORA) plus other bibliographic databases. Therefore university libraries in Nigeria can be seen to be undergoing various stages of metamorphoses from the traditional library system through the automated to the digital system (Fig. 1). The change is informed by the reformation in the university environment and the users they serve.

The implication of the change is not an outright change in the library mission but a modification in the operations and services aimed at empowering the libraries to fulfil their roles better. Hence the changing trends have brought the University libraries to the challenge of sharing the international cultural literacy; developing of comprehensive local collection and instructional service based partnerships (Raseroka, 1999). Such roles require that:

a. University library should not only serve the user with the available print but search for materials in other domains beating space and time;
b. Make the research output of faculty members available for use by other interest groups through networking;
c. Act as a switching center (Server) where the university teachers and students will interact thereby serving as an intermediary for any invisible college;
d. Act as a reference centre for any user from a remote environment. A university library aiming at any thing less than the foregoing may not stand the test of time.

Requirement for the Systems

For a university library to sustain its relevance in the changing educational environment, the library management should at any point in time examine the items that make up the university environment and entities of each library systems and update himself with the changing facilities. Such critical review will enable him understand the group he is serving with their immediate and future needs.

For ease of evaluation, a university library manager should see his library as
belonging to any of these three library system found in a given university environment. Fig.1. The first and initial environment of the university is the traditional education environment in which the traditional library system is found. The input in this system is the traditional skilled staff working with printed materials, bulletin boards and other traditional infrastructure. Finance is always recognized as an input in each system. The processes are the acquisition, catalogue, and classification, and then traditional card based public services. Library users refer to the catalogue or consult either through surface mails or face-to-face interaction. The control mechanism is through management report and evaluation which shows the inadequacy of such system in the modern trend. However some university libraries are still in that stage despite serving a group that require materials in the global environment.

Following the previous stage is the Automated library system, a consequence of a search for sufficient service. In this system staff are required to be skilled in the use of computer for library operations. Materials input includes offline databases while tools include bibliographic databases. Personal computers are in common use with the accompanying library software. The process in this type of system is regarded as computerized library operation (Drabenstott, 1994). The services require the use of computer to search databases, charge / discharge materials, and register users etc. Such library system is also referred to as computerized library. The control mechanism in this case is based on management information system (MIS).

The development and establishment of digital library system for university community became necessary in order to satisfy the need for shared information and the desire to access and publish the most recent research findings with dispatch. There was also a need for a new wave of education which is learner centred. Typical of this is the VIHEP (Virtual Institute for High Education Pedagogy) (www.nucvihep.net and some online and offline academic programmes. This type of system provide library function for the academics in the digital age. The age that requires presentation an analysis of research in the Internet (Cyber university). Nentwich (1999) provides the futures of cyberscience in a cyber-university. Such type of learning is found in the Compute Centre of the Federal University of Technolog, where students are programmed to attend their lectures via computer networks. For such Library system materials are accessed in digital form, and the internet is a gateway to satisfying user need (a paperless library). The library at this transformation stage (Morton 1991; Lynch 1993). The input into this system are librarian skilled in the creation of electronic pointers to resources in the Internet, (creation of portals); in the use, surfing and browsing of Internet; in finding resources available in the Internet and its evaluation. Such staff should also be skilled in publishing of local organization information on the Internet and handling of intellectual properties issues/ networked resources (Reich 1996). In this system the processes change to information access and information delivery in intellectual and physical access (Van Wahlde and Schiller, 1993).

In effect the line between process and output may not be visible. Both output and operation will be seen in the electronic mail, online conferences and Newsgroups. They will also be experienced in the form of electronic conferences, electronic transfer of resource and electronic tracking of events. Electronic journals, multimedia tutorial remote access, electronic document delivery and output could be delivered via the network to respective users in their offices, hostels or homes. In such system the library acts as a switching center.
Implication for University Libraries

The university libraries transition from the traditional system to digital system is motivated by the search for sufficient library services in the university. As earlier indicated in this paper, a library system must yield to either the external or the internal pressure. The external pressure emanating from the university environment is that of users desire to access other information source, interact with contemporaries beating space and time. On the other hand internal pressure implies that the traditional and automated system may run shot of required input and processes in form of library materials and processing tools. Such development jeopardizes the output and the satisfaction users derive from the library. Continuous resistance to change could result to unattractive library services, a driving force to users seeking alternative source of service.

For a sustainable relevance in the ever changing university environment, the university library management should critically analyse and redesign its system with reference to:

a. The current provisions (tools & techniques) for information services;

b. The personnel needed for such provisions and service; and

c. The consumers of such information services

The analysis of the tools and techniques will enable the university library management understand the materials, equipment, tools, techniques and infrastructure needed for the present operations. Personnel analysis will direct his focus on the training requirement for the staff in the library. Such training as shown by Anafulu (2001) should not loose sight of the traditional knowledge while accommodating the present information and communication technology. The last item should take cognisance of the need for the reorientation of information users in the university. Any plan for a new system which excludes the users, may not come off successfully.

In effect, the permissive group of library administrators who are afraid of the digital development should review their stand; the mediocre could be tolerated while the optimistic group bandwagon should be upheld.

Conclusion

The ever-consistent mission of Nigerian universities in a changing environment is supported by the role of its powerhouse or central organ the library. Though such role remains, the mode of operation keeps changing. The result is the move from the library that is predominately print to that with computer-based operation and latterly the all-electronic library system. The transition is motivated by the need of the parent organization. The members of the university community are no longer interested in turning pages of prints for information of earlier centuries; rather the interest is on the information of this minute. Satisfaction is provided by the use of information and communication technology facilities (ICT) which give rise to a changed external environment (university) a changed internal environment, the input, process and output. Where a library cannot provide the require output, users will by pass it for an alternative. Such a system will in no distant time remain irrelevant or cease to exist. To continue the offer of unflinching support, university libraries should examine their external environments for their present needs, evaluate the inputs, process and output of the internal environment and take a bold step towards the satisfaction of the concerned.
TRADITIONAL LIBRARY SYSTEM

INPUT
Traditional-Skilled staff
Print Materials
Infrastructure

PROCESS
Acquisition
Cat & Class
Public service

OUTPUT
Traditional service
to users using papers

CONTROL
Monthly, Quarterly and Annual Reports
Statistics

INSUFFICIENT SERVICE

AUTOMATED LIBRARY SYSTEM

INPUT
* Staffs skilled in the use of computerize operation
* Database
* PC
* Infrastructure
* Finance

PROCESS
* Computerized acquisition, cat & class public

OUTPUT
Services using PC, LAN

CONTROL
Management Information system

Teaching & Learning
Class Room with Chalk Board
Teaching & Learning
with AV materials
in the class room
Fig. 1: The three University Library systems

References


Cyber Education environment

Cyber Education environment

INPUT
- Hypertext database
- Staff skilled in Electronic pointing
- Digital Materials
- Internet Facilities
- Infrastructure

PROCESS
- Intellectual Information access
- Physical access information delivery

CONTROL
- Management information through interactive communication

OUTPUT
- Network services to office hostel

Interactive Learning

Fig. 1: The three University Library systems


