

Bridging the Digital Divide: Building Capacity for Database Creation in Nigerian University Libraries

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Abstract

Purpose: *The broad objective of this paper is to highlight ways of increasing African content in the internet and using the content to negotiate collaborative arrangement that will make information contents of the continent available to researcher in African universities without much cost. Specifically the work examined the methods of access creation to endogenous knowledge produced within Nigerian universities and to find out with policies are on ground to institutionalize standard methods of access creation.*

Design/Methodology/Approach: *The descriptive survey research method was adopted for this study. The population of the study comprised the nine (9) federal universities in the south east and south west geographical zones of Nigeria. The survey was designed to find out the actual situation on ground in these universities, therefore the questionnaire and structural interview methods were used to elicit information from the university librarians or any of their appointed representatives.*

Findings: *The paper found out that there was lack of capacity among the University Librarians to acquire endogenous knowledge products generated within the university environment. It also show the inability of librarians in these universities to create standard access to the endogenous materials acquired within the university environment.*

Practical implications: *The major concern of information and knowledge management in the ICT are is that of collaboration. To make collaboration fusible and hitch-free, the different participating units of he network must have something very vital to contribute. Because information and knowledge are no longer limited in time and space, it therefore, seem necessary that developing nations and institutions should seize this opportunity presented by ICT to narrow the information gap between them and developed nations of the west. If the professionals who are supposed to champion this opportunity are handicapped, it then means that these nations and institutions may throw away this golden opportunity. Consequently this information and knowledge gap will widen to the detriment of developing nations.*

Originality/Value: *The paper articulated strategies for developing capacity among library professional to create standard access to information and knowledge products in their universities which will untrue boost African content in the internet.*

Key words: *University Libraries, Database Creation, Digital Divide, ICT and globalization.*

Paper Type: *Empirical.*

Introduction

Sometimes in an individual's life there are moments when re-examinations are necessary. During such times a number of questions are asked, such as, who am I? What do I stand for in the society? Am I fulfilling my mission in society? If I am, what areas are my strengths so that I fortify them to remain relevant? If I am not what are the major problems and weaknesses that I have to take care of to become relevant to the society? To be

useful, needed and recognized by the society, positive answers have to be found to the above questions. If it is agreed that the above argument is true for an individual, we would then argue that it is of more importance to organizations, institutions and nations.

Hamelink (1985) argued that every society is characterized by the necessity to cope with its specific environment. In order to do this, human beings develop a series of direct and indirect relations with their environment, and these

relations constitute the cultural system of a society. He went further to argue that these systems comprise three types of indirect relations:

- Instrumental; the techniques human beings develop and apply
- Symbolic; the symbols through which human beings communicate and
- Social; the patterns of social interaction (Social formats) that people create.

He concluded by saying that coping involves the efforts not only to adapt to the environment but to shape it in a way that is adequate.

Development should be seen as changes in social advancement which meets the needs of the present without compromising the ability of the future generations to survive and flourish. Coping should be the ability to integrate the instrumental, symbolic and social to meet the needs of the present without compromising the future. This view does not differ very significantly from Berrigan's (1981) views on development. She argued that development is not a series of known stages through which each society passes towards pre-defined goal, but a phenomenon that has something to do with societal growth, experience and decision making that makes provision for societal improvement which gives opportunities for learning extended social and cultural environment.

World development have passed through many stages, prominent amongst them are the Stone Age, industrial revolution, technological revolution and the most recent information revolution. In all these Africa has always been left at the bottom wrung of the ladder always begging for help or the crumbs from the masters table. We do not believe that the North-South divide is the problem of those super endowed with good things of nature and those not endowed. We see it as a problem of a people who took advantage of the vicissitude of nature to build a solid background for social progress without compromising their future. We see a people who sacrificed time, money and even life to build a future full of hope for their generation against a people who failed to take the opportunities nature provided for them.

Globalization as occasioned by the information revolution has once more given Africa a chance to stamp their authority in the knowledge world and subsequently contribute as equals in world's

development. The theme of the conference "Managing Information in the digital era" could not have come at a better time; a time when information handling and management is not localized nor limited by time and space. The sub-theme "digital divide" reminds us of the age long inequalities between the "North and South" in terms of the development paradigm. It raises a very important question, what do we do in Africa to use the opportunity of globalization occasioned by Information and Communication Technologies to erase the long standing notion of a beggarly continent of the committee of nations? The title of this paper "Bridging the digital divide: building capacity for database creation" seems to be a soothing suggestion for the answers to the above question. In this time and age one needs to create a niche for him/her self which should be demanded by others. It is this need for the product that will make him/her relevant to the rest of the world.

The Problem

Nash (2005) noted the fact that "it is no longer possible for any one individual to be a leader in all branches of learning" (p652), arguing that the life of Leibniz who was the last universal scholar should be a warning rather than an example among scholars. This implies that knowledge creation should be compartmentalized. This has been the practice in the scholarly world. Universities and other academic centers are established centers of brainstorming activities between lecturers (teachers) and students to create knowledge based on the prevailing situation in the academic environment. These brainstorming activities result in rational and objective intellectual inquiry, which are recorded in terms of research results in journals, books, theses/dissertation reports, seminar and conference reports. To all intents and purposes, this should be based on national needs and aspirations. The ability of the students and faculty (teachers) to showcase and present these national aspirations at international fora as well as interpret international norms and development for local application determines the contribution of the University to world knowledge.

Libraries have two fundamental missions in the University Systems viz:

- acquire information/knowledge products generated within the University and also look beyond the University system(s) to other similar and unique institutions to acquire their information products to

enhance the quality of academic research,

- to sieve through the maze of the information product acquired to produce a sort of customized information to meet the needs of their users especially the faculty members.

If these missions are to be situated in today's globalized world, made possible by ICT and virtual library, it implies that libraries can source and acquire information from any part of the world by just pressing some key pads on the keyboard of their computers. With this means of acquisition in place collaborative practices (networking) is therefore the needed initiative among libraries. In collaboration Heinstorm (2005) noted two important points. The libraries or partners in collaboration must be predictable, in the sense that they will be expected to obey the same rules in other to arrive at the same or very closely related result. The libraries or partners in collaboration must be fair, in the sense that, if they decide to associate (co-operate) in any form none will fill cheated, marginalized or over exploited.

To make collaboration feasible and hitch free, the different participating units of the network must have something very vital that it must contribute to the whole. This argument is inherent in Ogunsola and Okusaga's (2006) assertion that the "mission of virtual library in developing countries should be to provide in an equitable, cooperative and cost effective manner, enhanced access to national and international library and information resources and for sharing locally – available resources with libraries all over the world using digital technology" (p.225). They noted in the process that virtual library provides a platform for sharing knowledge. It is not a one-way flow from resource-rich to resource –poor countries. Instead it is set to be a forum for the interchange of ideas. Consequently while Universities in Nigeria and other developing countries will take advantage of down loading materials from the developed world, such universities will have the opportunity of uploading output of research in the form of books, dissertation/theses and journals to the global network of virtual libraries.

The questions here are what sort of information is to be shared? Is it the same type of information that other libraries hold or information which is peculiar to a library, very

novel and needed by other libraries? Obviously the later is most preferable. This can only be possible through the development of what is termed endogenous knowledge. These are knowledge generated within the university systems through study, research and erudition. Laudable as these argument may be, the practicality depends on the number of universities in Africa that have evolved practicable plans to systematically manage their information content to be admired by other information producers and seekers. Therefore, this paper seeks to examine what university libraries do with endogenous knowledge generated in their universities.

Research Objectives and Questions

The broad objective of this paper therefore is to highlight ways of increasing African content in the internet and using this content to negotiate collaborative arrangement that will make information contents of other continents available to researchers in African universities without much cost. Specifically the work is designed to find out

- how many federal university libraries in the South-East and South West geopolitical zones of Nigeria collect research and other information materials generated within the university;
- the methods used by these universities in creating access to these materials;
- the views of these librarians in initiating and sustaining collaborative activities using these materials; and
- what policies are on the ground to institutionalize standard methods of access creation and collaborative activities.

These objectives will be achieved by attempting to find answers to the following research questions:

- a) What proportion of Nigerian federal university libraries in the South East and South West geopolitical zones collect research and other information materials generated within the university?
- b) What methods of access creation are used by these libraries in making the materials accessible to users?
- c) Are the libraries interested in using the materials for collaborative purposes?

- d) What institutional policies are on the ground in these university libraries to encourage standard methods of access creation and collaborative activities?

Review of Related Literature

This work will take its theoretical perspective from Gorman's (1997) description of a library. He described a library as consisting of its collections, its staff and the bibliographic structure that makes the collection accessible and enable the staff to provide the services and programmes that the library provides. This he refers to as the tripod on which library services stand, each leg being as important as the other. Elaborating on bibliographic structure he noted that it is the element that binds the collection and staff together to create the library community. Once that library community is created, it can reach out to and serve the wider academic community, the locality and the region of which the academic community is a part. Through cooperation and interaction with other libraries and sources of recorded knowledge and information, the original library community becomes part of and an element in the global community and thus plays its part in the presentation and advancement of civilization.

In this argument, Gorman has successfully given bibliographic control mechanism the pride of place it deserves in making access to information resources possible for the academic community. Hence there cannot be access without the creation of the database which is the bibliographic structure for access. It is therefore imperative for Nigerian libraries to take the issue of database creation using local content serious if they wish to contribute meaningfully to the global knowledge community.

In Gorman's perspective globalization of information and knowledge is a result of collaboration between individual libraries facilitated by information and communication technologies. This collaboration coalesces into a global database for which the internet serves as the hub. Omolayole et. al. (2005) argued that ICTs are tools for effective globalization of library services in Nigeria, to the extent that they ensure Nigeria's participation in the global information age and knowledge economy (as cited in Okocha et. al. 2008).

The effectiveness of each library's contribution to this global database is measured by the contents that originate from the cognate

members of this global database. Byrum (2001:) puts it clearly when he argues that while each institution (library) needs to establish its own priorities "including within its service plan a commitment to creating bibliographic records for electronic resources, individual efforts should coalesce into regional and national efforts to achieve database where a large number of bibliographic records are supported by standardized access points contributed by a large number of libraries, museums and archives" (p.2). Germane to this argument on standardization is the elimination of repetitive functions involved in an uncollaborated work. When each library specializes in an area of knowledge creation, preferably endogenous information generated within its academic environment, it will find market and ready collaborators in those who have specialties in other areas of knowledge creation. This is the essence of local content which reflects international standards.

Universities and research institutions are looked upon to produce new knowledge through research and consultancy, projects sponsored through both public and private funding. This much is acknowledged by the African Union (2006) when it argued that the attainment of the Millennium Development Goals (MDG) in Africa is dependent on the increasing role of knowledge, innovation in the world economy and the role of Higher Education (HE) as a core resource base. Therefore it decided to focus the second decade of Education for Africa on "promotion of original knowledge in higher education" with emphasis on the promotion of endogenous knowledge production.

As information specialist librarians are faced with the great challenge of making full contribution to the ongoing efforts at generating or creating African useable information content in the World Wide Web (internet). This is amidst the statement of Kofi Annan in 2001 as Secretary General of the United Nations. He urged African leaders to mould their economies to become active participants in the global economy by adopting ICTs. He emphasized that "unless African countries become full actors in the global information revolution, the gap between the haves and have-nots will widen, opening the possibility of increasing marginalization of the continent". On the other hand he continued, "participating in the information society offers tremendous

opportunities for Africa to leaping into the future” (as cited in Mchombu : 2007).

Discussing the issue of knowledge society and African content Britz et. al. (2006) argued that Africa has still a far way to go to become a true knowledge society. Their argument was based on what they termed as “four interrelated pillars of a knowledge society. These are ICT; usable content, infrastructure and deliverability and human intellectual capability. The issue of usable content as a basis for bridging the information and development gap between African continent and the more developed continents has attracted the attention of researchers. Mchombu (2007) identified six key challenges information specialists in Africa will face if they want to become part of the knowledge change process in the creation of local content. He argued that the challenge here is for information centers/libraries to learn how to produce their own information products and repackage information which is rich in local content, rather than perpetuating various forms of intellectual and cultural dependence. Arguing along this line Witten et. al. (2002) observed that developing the capability of creating information collection will allow developing counties to participate actively in the information society, rather than observing it from outside.

Discussing the potentials of African Knowledge and its contributions in the world knowledge through the internet Chiware (2004) noted that research generated from African universities and research institutions has the potential to lead in electronic publishing opportunities currently being made possible by the existence of the internet and other forms of electronic information dissemination. He therefore identified four major challenges facing African universities and research institutions in their quest to create content for the internet. These challenges which are very germane to the problem of African libraries include:

- Funding; he argued that the problem of ICT development in Africa is that it is heavily dependent on donor funding. The projects ceases when the funds stop.
- Internet capacity; he argued that the system of lease payment through national telecommunication authorities have to give way for a long-term development that will allow the creation of sustainable content development.
- Crisis in African universities’ research capacities; this crisis he noted is seen more in the capacity of African universities to create and sustain the level and quality of educational research that are essential to national development and autonomy. The factors that contribute to this crisis either include isolation of aspiring researchers whose institutions lack the means to support their research interests or participate in regional and international conferences and seminars where studies in progress and studies completed are considered. He concluded by arguing that the emergence of a community of African scholar is essential to the future of African universities’ capacity to create, develop and disseminate scientific and technological information through the internet. This capacity will definitely be enhanced by producing a cream of information professionals who will be able to create good knowledge/information surrogates that will help researchers to know what is available in their field to minimize the reinvention of the wheel.
- ICT policies that will enable African universities to freely publish on the internet.

The problem is having identified the issue of local content development as a panacea to bridging the information gap between the “information rich and information poor countries, what should constitute the materials that becomes the back bone of this local content. We are of the opinion that these should include, government documents, newspapers/magazines, journal articles, project/theses reports, patents, standard reviews etc. Most of these are locally produced and contains indigenous knowledge products. The task of indexers/cataloguers is not only organizing these information resources in the local library but making sure that they become part of the world’s information resources. Therefore the critical concern of the cataloguer/indexer, especially those in Africa is to develop or adopt cataloguing practices that will effectively mainstream their information resources into the global information network environment. This study on the indexing practices of Nigerian libraries is therefore necessary.

Methodology

The descriptive survey research method was adopted for this study. The population of the study comprised the nine (9) federal universities in the south east and south west geographical zones of Nigeria. The choice of the federal universities is largely because of their long years of operation, funding facilities and relative

advantage of operating standard university libraries and academic activities. The survey was designed to find out the actual situation on ground in these universities, therefore the questionnaire and structural interview methods were used to elicit information from the university librarians or any of their appointed representatives.

Result and Discussion

Table I: Availability of Knowledge Products

University library	Conference proceedings	Theses & dissertations	Seminar/conference & workshop papers	Newspapers & magazines
Michael Okpara University Umuahia	X	✓	x	✓
Federal University of Technology Owerri	X	✓	x	✓
Nnamdi Azikiwe University Awka	✓	✓	✓	✓
University of Nigeria, Nsukka	X	✓	x	✓
University of Lagos	✓	✓	✓	✓
University of Ibadan	X	✓	x	✓
Obafemi Awolowo University Ife	X	✓	x	✓
Federal University of Technology Akure	✓	✓	✓	✓
University of Agriculture Abeokuta	✓	✓	✓	✓

Data in table I shows that less than fifty (50%) percent of the university libraries studied make effort to acquire conference and workshop papers/proceedings presented at conferences organized in their universities. However, more than fifty percent of these libraries do not capture and store these very vital knowledge products. Since conference/workshop papers and proceedings are sources of researched primary information, its collection neglect by these university libraries is a serious lapse in knowledge generation and dissemination which should not be allowed to waste, if Nigerians libraries hope to generate serious academic content for the world knowledge pool. This finding is not at variance with Okocha's et. al. (2008) report that 65% of Nigerian libraries in

their survey has high preference for packaged databases. This development according to them may spell doom for Nigerian libraries digitization programmes, because while they endorse the relevance of virtual libraries they are not contributing to the development of the system by creating local databases with local contents.

All the libraries surveyed stock newspapers/magazines and students' final theses/dissertations. It is necessary to state that these materials as important as they are as knowledge products are obviously less important than conference/workshop proceeding in academic circles. It is safe to conclude that Nigerian libraries do not take the issue of generating knowledge product locally serious.

Table II: Organization of Knowledge Materials

<i>University library</i>	<i>Controlled Indexing</i>	<i>Free Indexing</i>	<i>Abstracting</i>	<i>Alphabetical Listing</i>	<i>Displaying</i>
<i>Michael Okpara University Umuahia</i>	X	✓	X	✓	✓
<i>Federal University of Technology Owerri</i>	X	✓	X	x	✓
<i>Nnamdi Azikiwe University Awka</i>	X	✓	✓	x	✓
<i>University of Nigeria, Nsukka</i>	X	✓	X	✓	✓
<i>University of Lagos</i>	X	✓	X	x	✓
<i>University of Ibadan</i>	X	✓	X	x	✓
<i>Obafemi Awolowo University Ife</i>	X	✓	X	✓	✓
<i>Federal University of Technology Akure</i>	X	✓	X	x	✓
<i>University of Agriculture Abeokuta</i>	X	✓	X	✓	✓

The result of the study in table II shows that the respondents were asked to indicate out of four types of access creating methods, controlled indexing, free indexing, alphabetical listing and displays, which one they use. The result showed that none of the university libraries surveyed use any standard controlled indexing languages to index their materials. They rather resort to any convention of style and language (i.e. free indexing language) for their indexing work. This result indicates that these university libraries are only indexing for local consumption. Standard information access creation is non-existent in these university libraries. This shows lack of capacity on the part of professional librarians in creating standard information access tools.

The survey also found out from structured interview questions that while these university libraries are enthused at the opportunity ICT offers for collaborative initiatives, they are however unanimous to the fact that the foundations for such initiatives have not been laid in the libraries. The interviews conducted also showed a total lack of policy initiative within these libraries for a sustained means of standard access creation for endogenous materials generated within these universities.

Conclusion and Recommendations

This study has shown the lack of capacity among university libraries in Nigeria to acquire endogenous knowledge products generated within the university environment. It also shows the inability of the professionals in these libraries to create access to the materials

acquired within these university environments using any known standard indexing languages. Therefore, the conclusion of authors like Britz et. al. (2006), Mchombu (2007), Witten et. al. (2002) and Chiware (2004), that the apparent problem of low content of African knowledge in the internet is verifiable. This is largely due to lack of capacity of librarians to scout, for and acquire, endogenous knowledge materials generated within their environment. Even when the materials are acquired, they equally lacked the capacity to produce standard catalogues and indexes to these materials which serve as authentic information surrogates to these knowledge.

It is therefore necessary that a number of steps be taken to remedy the situation. The proposed Wider Net African university library project in 2001 noted that its project personnel will work with participating universities to develop their capacity to digitize their collections and coach African librarians in the procurement of equipment, the use of hardware and software. This they claimed they will do through biannual workshops to demonstrate digitizing techniques as well as promote professional and inter-university collaboration (Missen, et. al. 2001). It is not clear if this took off. It is recommended that this proposal should be taken serious because it will help African university libraries make serious progress in the acquisition of ICT skills. We believe that digitization projects are going on considerably well in African universities, however WiderNet should intensify efforts towards sensitizing university libraries to

the need of local content creation using endogenous knowledge.

Chiware (2004) identified a number of initiatives in the area of electronic information dissemination, which include:

- The Electronic Publishing Trust (EPT)
- The Program for the Enhancement of Research Information (PERI)
- Database of African Theses and Dissertation (DTAD) and
- The American Association of the Advancement of Science (AAAS) African project.

These initiative good as they sound has not made recognizable impact on the enhancement of African content in the internet. Efforts should be geared towards strengthening such initiatives especially those that will help train African libraries and sensitize them to issues that boarder on content creation using endogenous materials.

African union since it decided to focus its second decade of Education for Africa on promotion of original knowledge in higher education with emphasis on the promotion of endogenous knowledge production should set up an organ that should be to study and proffer solution to the problem of low African knowledge content in the internet. We are optimistic that, if the political will is there, by the end of 2015 which will be the end of the decade considerable stride would have been made towards bridging the knowledge gap between Africa and other continents.

References

African Union (2006), *Second Decade of Education for Africa (2006-2015) Draft Plan of Action*. Department of Human Resources, Science & Technology.

Berrigan F.J. (1981) *Community Communication: The Role of Community Media in Development. Reports and Papers on Mass Communication No. 90*. Paris: UNESCO

Britz J.J; Lor, P.J; Coetzee I.E.M & Bester B.C. (2006), *Africa as a Knowledge Society: A Reality Check*.
<http://www.sceincedirect.com/science>.

Byrum, John D. (Jr) (2001?), *Challenges of Electronic Resources: State of the Art and Unresolved Issues. An Unpublished Paper*

Gorman Michael (1997), *What is the future of cataloguing and cataloguers?* IFLANET. Available at
<http://www.ifla.org/iv/ifla63/63gorm.htm>. (retrieved 8/8/2008).

Hamelink J. Cee (1985), *Towards a Binary Culture. Cultures 36* Paris: UNESCO 53-65.

Heinstrom Jannica (2005), *Fast Surfing, Broad Scanning and Deep Diving: The Influence of Personality and Study Approach on Students' Information Seeking Behaviour. Journal of Documentation Vol. 62(2), 228-247.*

Mchombu Kingo J. (2007), *Harnessing Knowledge Management for Africa's Transition to the 21st Century. Information Development vol. 23(1). 25-42.*

Missen Cliff, Ojoade, A.B, Paulos Afeworki, Akintunde Stephen, McCarthy Cavan, Ibrahim M.A. & D'Alessandro Michael P. (2001), *The African University Library Project. The WiderNet African University Library Project.ht*.

Nash Paul (2005), *Philosophies of the Branches of Knowledge. Encyclopaedia Britannica vol. 25. Chicago: Encyclopaedia Britannica Inc. 652-729.*

Ogunsola, L.A. & Okusaga, T.O. (2006), *Developing Countries and the Need for Virtual Libraries: Problems and Prospects. Journal of Social Science 13(3). 221-229.*

Okocha, K.F; Okoro Okee, Akanwa P. & Okafor V.N. (2008), *Problems and Prospects of Globalization for Nigerian Libraries: A Survey Report. Heartland Journal of Library and Information Science 2(1&2) 107-113.*

Witten, Lan H; Loots Michel; Trujillo, Maria F. & Bainbridge David (2002), *The Promise of Digital Libraries in Developing Countries. The Electronic Library Vol. 20(1) 7-13.*