

REPOSITIONING INFORMATION TECHNOLOGY FOR INFORMATION MANAGEMENT IN THE 3RD MILLENNIUM: THE PROBLEMS, CHALLENGES AND PROSPECTS IN NIGERIAN LIBRARIES

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Abstract

The paper discusses the role of information technology in educational development of Nigeria in the 3rd Millennium. Technology, in various forms, has always held forth the prospect of improving education. This promise can only be assured when deployment of IT tools is achieved in Nigeria libraries. That would mean computerizing their operations; forming networks for sharing resources; and taking advantage of the far-reaching benefits of IT, especially CD-ROM databases and the Internet. The paper reviews the scenario of Nigerian libraries in relation to IT application to information management. Major problems found to be mitigating IT application by Nigerian libraries include lack of commitment by Government and inadequate funding; undeveloped ICT infrastructure; shortage of technical manpower and high cost of IT equipment. Nigerian libraries, in spite of the bottlenecks, have challenges to efficiently and effectively manage information in the 3rd millennium, as to support teaching, learning, and research, as well as projects for undergraduates and graduate works. Considering the plans for improved economy, democratized polity, improved provision of information infrastructure, coupled with programs already on the ground in IT applications, especially in areas of networking, and Internet connectivity and use in Nigeria tertiary institutions, the paper established that the prospect are bright for Nigerian libraries to automate their information services in the 3rd millennium.

Introduction

The Third Millennium holds much hope - hope of political stability, hope of economic prosperity, hope of technological advancement, hope of enjoying the basic necessities of life: like food, shelter, Medicare, education, liberty and a host of other aspirations already taken for granted by the developed world.

Information is at present believed to be a fifth factor of production, which is by no means inferior to land, labour, capita! and the entrepreneur. In fact, Brandin and Harrison (1987), observe "information wealth is now a new type of capital described as knowledge capital". In the same vein, Drucker (1969), alerted us that, the systematic and purposeful acquisition of information rather than science and technology is emerging as the new foundation for work, productivity and effort throughout the world. In what sounds like a confirmation of Drucker's prediction, Bergdahl (1989), posits that, information has become such a precious resource that the fate of modern nations in all essentials is connected with their capacity to develop and exploit it. He further predicts that in future, countries that do not develop this capacity will be left behind in the cultural, scientific and economic development.

Present Trends in Information Management

In the past, libraries and information centres had to manually manage their information resources. The laboriousness of such practice, the attendant delay in information processing and delivery of services and the general ineffectiveness of information services at the time no doubt motivated serious research into better means of information management. The key achievement of the research outcome is the much cherished information technologies of the present day.

Furthermore, the fusion between computers and telecommunications has enhanced the development of information networks around the world, the highpoint of which is the Internet. The Internet can be conceived as a rich, multi-layered, complex, ever-changing textual environment. The Internet provides several opportunities for the academia. It is a mechanism for information dissemination and a medium for collaborative interaction between individuals and their computers without regards for geographic limitation of space (Leiner et al., 2000). The Internet is arguably one

of the most significant technological developments of the late 20th century.

First, and perhaps of greatest importance for many subscribers to online services, is e-mail. Computer connectivity between nations has allowed a new form of correspondence to evolve and this, though seldom noticed, has changed people's daily lives the world over. It is now possible to communicate easily and rapidly with people thousands of miles away.

There are now thousands of Internet 'home pages' which serve as information sources for institutions and organizations. Most universities, polytechnics and colleges of education throughout the world have established their presence on the Internet, thereby, making it possible for researchers to access past-and current research publications. Prospective students can also access information on courses being offered by Institutions and as well their admission requirements. The World Wide Web also provides very easy access to some government documents and legislative materials.

Journals, magazines, newspapers, books and archives provide another important avenue for the construction, publication and circulation of Internet texts. The only costs that readers incur are the standard internet connection fees and hourly rates. There are now hundreds of serials published via the Internet. These include informal newsletters constructed for small groups on individual personal computers to sophisticated, highly specialized, fully refereed academic journals. Hyper textual publications, incorporating 'live' or moving images and 'real' sounds as well as words defy easy classification, and multiple links to other documents and sites encourage new (hitherto impossible) patterns of reading activity (Jagboro, n.d.). It is arguable that the potential advantages of moving toward electronic publication for scholarly work far outweigh any possible disadvantages associated with such a move. With growing specialization and continuing pressure to publish, academics have been producing ever-greater numbers of articles and books every decade of the twentieth century.

Libraries, almost always short on both money and space, are forced to steadily reduce the proportion of purchased books and serials in almost every subject areas, making it hard for lecturers and students to obtain much needed information.

With the emergence of the Internet, the world has been truly reduced to a global information village. This worldwide network, though designed to serve the information needs and interests of all facets of the society, has provided a great boost to library services worldwide. It is now a well-known fact that Internet connectivity fosters an unparalleled degree of communication, collaboration, and resource sharing and information access. The electronic publishing of some important journals and other materials on the Internet has removed the need to physically acquire such materials by libraries. While this is a big boost to the libraries that have Internet access, all others, mostly in Nigeria and the Third World as a whole lose the benefit of making such electronically published works available to their users through the usual journal subscription channel. The implication of this development to a majority of Nigeria's libraries can be very grave.

With the numerous advantages of information technology widely discussed in the literature, e.g. by Cochrane (1992) and Henderson (1992), libraries are computerizing their services all over the world. To take advantage of the immense benefits in information management offered by IT, a library must first computerize its services. Despite this naked reality, the pace of library automation in Nigeria is still very slow and this should be a cause for serious concern.

Problems of Information Management in Nigerian Libraries

In managing the library's information resources, the librarian has to contend with both internal and external difficulties. The state of library development in Nigeria is reminiscent of the general climate of under-development in the Third World. It is in this socio-economic climate that libraries in Nigeria have to thrive. It is in the milieu that they are expected to be efficiently and effectively managed. In every society, the library is the most dependable source of information for development (Nwalo, 2000). Since the government is the prime mover of development in African countries, its support or apathy over library development will chart a path for the libraries, for better or for worse. It is well established that good information improves decision-making and enhances efficiency. The situation in Nigeria is somewhat bizarre. As the governments and their agencies hardly rely on hard information for their development activities. Consequently, the governments of Nigeria accord very low priority to serious information and so hardly see the need to strongly support and fund libraries. Apart from funding, and apathy of policy makers in Nigeria, some of the problems of information

management in Nigeria include:

Poor State of Information Infrastructure

Modern information management requires a fairly well developed information infrastructure especially electricity and the telephone. These basic infrastructures that are already taken for granted ' in the developed world are unfortunately poorly provided for in Nigeria. In Nigeria power supply is so erratic that it is generally believed that it is normal to have 'black out' and abnormal to have uninterrupted power supply for up to one hour. This is to say nothing the rural areas, which though harbour over 80% of the country's population are, in most cases, yet to be provided with electricity.

The sole electricity corporation, the Power Holding Company of Nigeria (PHCN) has dashed the hope of many, not just at industrialization but in the efficient management of hospitals, sports stadium, libraries and other such facilities requiring electricity to power their machines and other electrical and electronic devices.

Reports from the participants at the West African Conference on Library Association Management and Networking held in Ibadan from 11-13 October 1999 show that undependable state of electricity supply in the various countries in the sub-region is one of the most serious obstacles to library automation and networking in the area. This assertion has been confirmed by a recent survey which included Nigeria among eight other African countries. The result of the survey shows that in a checklist of ten items on hindrances to library automation, infrequent power supply and poor telephone facilities ranked among the top three. Thus, the twin problems of shortage of electricity supply and poor telephone facilities in Nigerian constitute a clog in the efforts to introduce modern information management techniques in the libraries and information centres.

Problems of Computer Hardware and Software

The application of computers to various human enterprises in Nigeria is still relatively new. This factor, coupled with the weakness of currency of Nigeria in the foreign exchange market has made the prices of computer hardware and software unaffordable by many libraries (Nwalo, 2000). For Nigerian libraries that are generally poorly funded, the high cost of acquiring computer hardware and software could be a deterrent to many who are thinking of automating their information management systems.

Shortage of Technical Manpower

Computer scientists, engineers and technologists are still very few in Nigeria relative to the demand. The result is that the cost of maintenance of automated library systems becomes prohibitive as libraries compete for the services of the very few maintenance personnel available in their localities. Many attempts at library automation in Nigeria are known to have failed because of system maintenance problems.

Challenges To Nigerian Libraries

In spite of the myriad of problems in the way of libraries in Nigeria to apply modern information management techniques, they are likely to have very little choice in this 21st Century. To meet the legitimate aspiration of the people for rapid socio-political and economic development, the libraries, being engines of development are faced with serious challenges. These include:

Technology Transfer

The libraries need to be at the vanguard of technology transfer from the developed world to the developing economies of Africa. To meet this expectation, the Nigerian libraries must provide a link between local researchers, teachers and scholars and their counterparts in other parts of the world. Internet connectivity, for example, is about the surest way of achieving this objective. All users of the Internet enjoy a whole range of services such as electronic mail.

Unfettered access to databases around the world through the Internet offers a- great opportunity for scientists and technologists in Nigeria to acquire knowledge from their colleagues elsewhere. The Internet could also afford Nigerian scientists and technologists the opportunity to collaborate with their counterparts around the world on research projects. Arunachalam (1999), calls

attention to the fact that, increasingly, research is carried out by multinational teams. According to him, there has been an enormous increase in recent years in the number of research papers resulting from international collaboration. Citing the National Science Foundation, Science and Engineering Indicators (1998) Arunachalam laments that whereas the number of papers with international co-authors rose by 200% from 1981 - 1995 more than 80% of such co-authored articles involved writers from the developed countries while only 1.8% involved authors from Nigeria.

For Nigerian researchers to be able to collaborate more significantly with their counterparts in other parts of the world, they need access to the Internet especially through their local libraries, it must be reiterated that such collaboration between researchers from Nigeria and their counterparts in developed countries is highly desirable as it can promote technology transfer.

Provision of Teaching and Research Facilities

To provide their users access to the best of teaching and research materials available in the world, timely, and at least cost, Nigerian libraries must automate their services and form networks. Most of the problems associated with acquisitions, collection and management of information in general would be over for Nigerian libraries once they are on the web.

Moreover, the CD-ROM technology affords libraries in Nigeria a unique opportunity to acquire information materials to meet the needs of their users. Ephraim (1991) and Ojo-Igbinobia (1993) have extolled the virtues of the CD-ROM and highlighted its potentials for researchers in

Nigeria. Apart from storage space economy, the CD-ROM provides access to information held by important databases without laying cables. This is very significant considering that lack of good telephone services in Nigeria.

Furthermore, Levy (1990) posits that full text compact discs might also prove more secure than print copy: it is impossible to mutilate them by cutting out pages to be taken home. I

Prospects for Information Management in Nigeria

The contributions at the West African Conference on Library Association Management and Networking recently held in Ibadan under the sponsorship of IFLA, Nigerian Section, tends to capture the enthusiasm and determination by the participants that there are high prospects of modern information management by Nigerian libraries in the 21st Century. Such prospects are predicated on several factors including:

Democratization in Nigeria

The military dictatorship that characterized most of Nigeria in the last century resulted in the wastage of national resources on activities and projects that were selfishly motivated. Presently, Nigeria has put the experience of military dictatorship behind her. With democratic government in the country, chances are that a systematic and more populist approach to development will be taken, in such a dispensation, more information will be sought for planning and so libraries are likely to receive "greater attention.

Improved Economy of Nigeria

With a stable polity, the economy of Nigeria is expected to greatly improve in the New Millennium. Already there are strong indications that the Western nations are more disposed to assist the young democracies¹ in Africa stabilize through comprehensive economic aid. The U.S., for example, has recently announced a comprehensive plan of economic assistance to countries in Africa. On the domestic front, the federal government appears to be determined more than ever before to take bold steps at economic reconstruction. Once the economies improve, many problems of library automation, like high cost of hardware acquisition and inadequate funding, everything being equal, will be reduced to the barest minimum.

Improved Information and Communication Infrastructure

The deplorable state of information and communication infrastructure in parts of Nigeria is known to be a major bottleneck to modern information management. Whereas the International Telephone Union (ITU) recommends one telephone to a hundred persons, the Nigerian telephone density by 1996 was only about 0.66 line per 100 inhabitants. For the same period, Japan's teledensity

was 64 per 100, USA 96 per 100, Taiwan 40.5 per hundred and Brazil, 10 per 100 persons respectively (Adeyinka, 1997). According to a March 1999 International Telecommunication Union (ITU) report, teledensity in many African countries is less than 0.05 per 100 inhabitants. This ugly situation, is however, expected to change for the better in the near future. The Nigerian Communication Commission, for example, has been taking bold steps to deregulate the telecommunications industry in the country. So far, over 35 firms have been licensed in different aspects of communication business, 11 of which are Internet Services providers.

Furthermore, the Nigerian government is seriously pursuing a programme of deregulation and privatization of its telecommunications and energy sectors.

Rejuvenation of National and Regional Library Associations

Reference has already been made in this paper to the West Nigerian Conference on Library Association Management and Networking held at Ibadan, from 11-13 October, 1999. Contributions by various participants at the conference showed that many national library associations in West Africa had ceased to be active because of one problem or the other. However, by the end of the conference, all participants most of whom are leaders in librarianship profession of their countries expressed their determination to give their country's Library Associations a new lease of life upon their return. Strong national library associations are necessary to promote high professionalism and act as a pressure group on the government of the day to lend active support to library development issues.

Progress in IT Application in Nigeria

Though the pace of IT application in Nigeria's libraries has not been encouraging, concerted effort is being made all over Nigeria to implement the technology. A significant number of the notable libraries in Nigeria especially the National Library of Nigeria and over 30 academic and special libraries have implemented IT to varying degrees- Many more plan to automate their services in the near future. The computerized libraries, among others, include:

- Kenneth Dike Library, University of Ibadan;
- University of Lagos Library;
- Hezekiah Oluwasanmi Library, Obafemi Awolowo University, Ile-Ife;
- Federal University of Technology, Owerri (FUTO) Library;
- Ahmadu Bello University Library, Zaria;

The rate of library automation in Nigeria is still relatively low, considering that the country has over 1000 libraries. However, the success recorded by the few that have automated their services is expected to motivate others to apply IT in the near future.

Manpower Development

Shortage of manpower for the implementation of IT programmes of libraries in Nigeria has been a big problem. Many attempts at library automation in Nigeria are known to have failed because of the high turnover of systems analysts and programmers who abandon the computerization programmes mid-stream in search of greener pastures. One of the findings of Adeniran (1997) is that out of the 18 libraries found to have computerized their services, only three (16.7%) had qualified library systems analysts in their establishment. The rest made use of external consultants for the computerization projects.

Conscious of the manpower problem, libraries all over Nigeria have been exposing their staff to computer literacy programmes. Some have also been sending selected staff to specialized training on computer information management locally and overseas. Kenneth Dike library, University of Ibadan has had cause to send two of its key automation staff to Britain for training at a very high cost.

Another good development is that library schools in Nigeria are bracing up to the challenge by revising their curricula to strongly accommodate practical education and training in IT. The Department of Library, Archival and Information Studies, University of Ibadan, for example, has recently acquired eight computers for teaching and practice purposes by the lecturers and students. Effort is also being made¹ to acquire more to meet the fairly high student population. The curricula at

both the undergraduate and post-graduate levels are also being overhauled to be strongly IT biased.

Accordingly, the National Conference on Library and Information Science Educators in Nigeria (NALISE) held at the University of Ibadan, from 4-7 August 1999 resolved that all the library schools should strongly teach IT to their students and provide facilities for computer practical. Once this type of resolution is widely implemented by library schools in Nigeria, the problem of manpower shortage for library automation programmes will be greatly reduced.

Development of Information Networks in Nigeria

Sanni (1999) discusses a number of network development efforts in Africa, among which are;

- **PADISNET** (Pan African Documentation Centre Network) - This is a project to interconnect centres performing research on planning of development in some Nigerian countries into a network for data and information exchange;
- * **OAUNet** (Obafemi Awolowo University Network). This is a joint research project between Obafemi Awolowo University, Ile-Ife, and (he Abdul Salaam International Centre for Theoretical Physics - OAU/ICTP Project. It is designed to remove the isolation suffered by researchers in Africa by integrating them via network with their counterparts in other parts of the globe and to create linkage among the researchers themselves.

Recommendations

With the prospect of improved economy in a stable polity, as highlighted in the foregoing, the Federal Government should increase funding of libraries to meet the challenges they face in the current Millennium. In addition, the following recommendations are pertinent; There should be increased pace of IT application to Nigeria libraries. In line with this trend, higher institutions should brace up to establishing virtual libraries with Internet connectivity.

The use of full text compact disk need be enhanced for more secure storage of information this will make stealing! or mutilation of print materials a thing of the past.

The IT infrastructure, notably telecommunication and energy sectors, should be fine-tuned beyond deregulation and privatizing. The bottom line should be provision of regular services at affordable rates.

Manpower development should be vigorously addressed, as this would be essential for successful IT implementation. Library schools nation-wide should enrich their curricular with intensive IT content.

Conclusion

Information for the development of any nation can be both indigenous and international. For Nigeria to harness information from local sources and overseas, the application of modern information management techniques is a sine qua non. The librarianship profession in Nigeria has not been lacking in the knowledge of the right steps to take in managing information for development. It has had to battle with, very unfavorable climate of information provision and management, a climate that must improve to give way to progress in the New Millennium. "Nigeria has much to offer to Africa just as the Africa has much to offer to Nigeria. One therefore expects state governments and federal government development agencies and institutions, as well as stake holders outside Nigeria, to do more in developing information infrastructure to assist the "Nigerian libraries in the 21st Century.

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