

# Libraries as Tools for ICT Development<sup>1</sup>

By

Stephen A. Akintunde, PhD  
Deputy University Librarian (Admin. & Systems)  
University of Jos  
PMB 2084  
Jos, Plateau State.  
[akintundes@widernet.org](mailto:akintundes@widernet.org)

## Introduction

Libraries, worldwide, since the last two decades, have undergone significant metamorphosis ó from a purely traditional modelled manual service delivery system to a more dynamic technologically driven system. In Nigeria, this change has become more manifest only in the new millennium. Like a cyclone, the technology-driven environment has enveloped the library and is taking it to unprecedented heights in knowledge acquisition, management, and communication. Even, the vocabulary of librarianship is changing: ñdisseminationø is being replaced by ñcommunicationø ñrepositoryø by ñdatabaseø ñliteratureø by ñknowledgeø ñsearchø by ñnavigationø etc. This reflects current approach to packaging and the tools used for managing knowledge. Knowledge itself has become more ubiquitous than was ever imagined twenty years ago.

However, in an apparent symbiotic relationship, whereas the new communication technology is giving shape to librarianship and libraries, the new librarianship is also shaping the architecture and design of information and telecommunications technology (ICT). Thus, providing us with a challenge to constantly review and adjust our skills, technologies, services, and methods of outreach to clients. These would be further examined under the following topics: Libraries: a Changing Concept? Libraries as Tools, What is ICT Development? Libraries as Tools for ICT Development, Libraries: The New Paradigm, Challenges for Librarians in Nigeria, Challenges for Nigerian Libraries, Challenges for the Nigerian Library Association, and Conclusion

## Libraries: a Changing Concept?

Libraries had, up till now, always served as a tangible structure where books, journals, magazines, and all types of documents are kept and retrieved for study. Both the librarian and client must be physically present in the library in order to exchange information. Librarians were custodians of knowledge. They were experts in the retrieval of knowledge. No library client could make any meaningful search of library resources without approaching the librarian. This could be the ñReferenceø Librarian, the ñCirculations Servicesø Librarian, the ñDocumentsø Librarian, or the ñSubjectø Librarian. But, all that has changed with the application of the dynamic ICT. The physical walls of libraries are collapsing like the collapsed Berlin Wall.

The ñcustodianø status of the librarian has also melted, giving way to a liberalised access to information without borders. However, contrary to fears of librarians in the early stages of the introduction of ICT, the librarian continues to be relevant, and, needed

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to manage the maze of data and drive the new technology forward. The librarian of today must be multi-skilled in the management of text, voice, and graphics in completely new media of storage and access. He must be flexible enough to update his skills with the ever-changing technology. For instance, storage devices have undergone several changes in the last ten years ó from magnetic tapes, to low memory hard disks, to 5<sup>1/4</sup> floppy diskettes, to 3<sup>1/2</sup> floppy diskettes, compact disks (e.g. Compact disk read only memory ó CD-ROM) to higher capacity hard disks, remote servers, and, now Universal Serial Bus (USB) hard and flash diskettes.

The library, today is therefore more conceptual than real. The library still exists ó albeit more virtual. The content has grown so much that it is almost running out of space and control. The format of the content of libraries is compulsively more digital than atom based. More significantly, the library has become globalised in terms of the actual sitting of, and access to, resources.

### **Libraries as Tools**

However, much as ICT has impacted on the library, the library has also become a tool for the incremental growth of ICT. The library had always served as tools. The traditional library was a tool for further and adult education. The library served as a social centre where didactic stories were told and culture was concretised. Traditions and cultural mores were promoted and passed on to the next generation. The library was a socializing agent for young adults and school leavers who found public libraries situational while reading for their examinations. Reading was highly promoted for life-long purposes.

National libraries served as custodians of the intellectual properties of nations. Anthropological and ethnological details were preserved in many national libraries. Such libraries have been used as centres of research in tracing and resolving genealogies and family history. Many land and other socio-cultural property documents in national libraries have served as tools for judges in resolving disputes between communities.

In the academia, libraries have been the centre of their intellectual environments. It is a convergence for both staff and students, especially those in tertiary institutions of learning. In Nigeria, the libraries of many tertiary institutions have either earned the institutions accreditation or failed them, because libraries are regarded as tools for academic excellence.

Whereas a good number of Nigerian secondary and primary schools do not have standard libraries, where they exist, they have been found to be tools for all round development of the child. The Abadina Media Resources Centre of the University of Ibadan, and the libraries of a number of private schools in the country are examples here. Where school libraries are not well stocked, the observance of library hours in most of the schools only upholds the significance of the library in the educational process.

The library therefore serves as a tool for the development of intellectual capabilities, as well as the promotion of cultural, and social integration. As a tool, the effectiveness of the library is dependent on the investment made into it by its proprietors ó private organizations, governments, and communities. It is also dependent on the awareness that the library public has of the resources available.

### What is ICT Development?

Information and Communications Technology (ICT) as a terminology has overtaken Information Technology (IT) because of its appropriateness, its utilitarianism. Whereas IT was used to describe the new technology in the mid-80s up to mid 690s, focusing on the computer, ICT since the beginning of this decade, is a new concept that emphasizes the use of technology for development. Information and Communications Technology emphasizes the uses of the computer and other technologies such as telephone to process, transport, and transfer voice and other data singularly or mixed with least interference or distortion of content.

Information and Communications Technology Development is therefore an attempt to improve on the various modules of the technology towards higher level of convergence, in order to respond more effectively to the need to communicate data or information. The improvement is more efficient if it involves both users and the industry. Users like librarians and their clients provide feedback to the industry on their products.

The appropriateness of different ICTs in various cultural settings is also considered under ICT Development. For instance, whereas real-time online Internet access is affordable and normative in more developed societies, societies like Nigeria do not yet have sufficient national and private infrastructural support for this. The support includes human and material resources such as skilled manpower, electricity, and telecommunications services. The awareness of ICT technology and resources also varies from culture to culture. So, ignoring the digital divide may only lead to frustration in ICT development.

However, ICT Development goes beyond the improvement of technology and providing necessary infrastructure. It includes the adaptation of ICT by librarians and other users in effectively and efficiently delivering services to clients. It also involves the training of clients in the effective utilisation of ICT resources. Thus, librarians and clients require training from time to time on current ICT technology and resources.

It involves research in every module of ICT with an expected outcome of improving the communication process. The research must be systematic and designed to be an integral part of ICT services. For example, in the library, where an Internet access is available, statistics of use of the facility would be taken for:

1. type of user
  - a. student, lecturer, other staff, researcher from outside the campus
  - b. gender of user
  - c. class/course level
2. type of use
  - a. literature search
  - b. on-line lecture
  - c. assignment
  - d. email
  - e. etc.
3. time of use
  - a. time spent by user in minutes and hours
4. cost
  - a. amount paid for browsing

Such data that assess the equipment are also needed:

1. when systems were purchased
2. when replaced
3. how many are in good order
4. what is the identifiable problem with any machine, and
5. which part was replaced in any system.

Generally, data is needed to assess:

1. Internet downtime
2. Cause of downtime
  - a. Electricity failure
  - b. Equipment failure
  - c. Server failure
  - d. Etc
3. Time of downtime, especially electricity.

The data obtained provides an empirical basis for the development of ICT capacity within the library.

Information and Communications Technology Development therefore encompasses both the human and material effects and counter effects of the deployment of ICT. It results in better adaptation and uses of the technology.

### **Libraries as Tools for ICT Development**

Libraries as tools for ICT Development therefore raise a number of critical issues. One of these is the role of the library in appropriating ICT. Another is the causative effect of the library's use of ICT.

The library uses ICT in several ways:

1. Management of Library Administration
2. Processing of library materials
3. Developing online resources
4. Accessing online resources
5. Developing offline resources
6. Accessing offline resources
7. Providing service to clients

These services require appropriate software as well as equipment. In the recent past, an increasing number of libraries in Nigeria have bought off the shelf software for cataloguing, circulation, and, even complete management of the library. Many of these software were developed outside the country but purchased from country representatives of the vendors. This is more a case of technology deployment than development. The problem with this approach is that skills in the maintenance of such software are not really developed. However, the training usually given to library staff to operate the software is a measure of skills development, even though the creative instinct is not essentially stimulated.

In accessing online resources skills of browsing and navigation are developed. Browsing is a general survey of sites/resources that are online ó usually Internet or

Intranet resources. Navigation is a more systematic assessment of online resources. Skills developed during these processes include the use of Universal Resources Locators (URLs) as well as Portals creation. Portals are most useful sites that have been aggregated into a folder or another site developed, such that easy access to the resources is enabled.

In the process of developing both online and offline resources, librarians learn to create and manage personal and subject web sites. This is a skill that is continuously required from librarians in the digital age. In the process of developing this skill, exposure to the different software and applications for developing web sites are acquired: such as dream weaver, html, FrontPage, java, and visual basic.

The ability of librarians to acquire these skills and deploy them in their jobs saves a lot of money for the institution because there would be no need to hire and pay a consultant to do the tasks. Furthermore, it is a human capacity building approach for the library. The skills can be transferred to other libraries through cooperative approaches. In other words, the entire library system gets developed in ICT in the process.

On the causative effect of the library's use of ICT, experiences like that of the University of Jos prove that awareness of ICT resources and the desire to access and utilise them by the library's clientele follow. The University of Jos library is a leading light in the use of ICT to deliver services on campus. The library's use of ICT ó computers, development and up loading of materials on the Intranet, attracted curiosity by lecturers and students. It stimulated the development of websites for every faculty and even administrative units on campus.

Librarians play a leadership role in navigating for literature on the web and have been adequately trained in the use of Microsoft Power Point for making presentations. They have also acquired adequate skills in digitisation. After in-house training, they can now take digital photographs and scan documents for the World Wide Web (WWW). This is a diffusion of ICT. The effect is that lecturers are particularly challenged that librarians could do these and many of the lecturers/Departments now call on the library to rain their staff.

One of the ICT facilities currently in use and being demonstrated to lecturers and students is the eGranary from the Widernet Project. The eGranary is a collection of over One and a Half Million documents ó full text journals, books with audio and graphics that have been downloaded from the www, with copyright permissions obtained. Information about the eGranary can be found at <http://www.egranary.org> or [www.widernet.org](http://www.widernet.org) It is a technological bridge across the digital divide between the more developed North and the underdeveloped South. In this process, we are able to access full texts in the various disciplines offered in the university. Library staff are involved in the development of eGranary, so it helps in sustainability. Demonstration of the technology is being done in the faculties and departments for awareness. The eGranary is on the Intranet, with a back up in the library.

The response of both lecturers and students to the eGranary has been very encouraging. It is a technology that other university libraries in Nigeria and other countries where there is poor infrastructure can benefit from. It saves the cost of bandwidth and Internet access, as well as down times, because eGranary is placed in the local Intranet. So, all those documents, which are as well current, can be accessed at practically no cost to the librarian, lecturer, or student. The quarterly updating of

eGranary makes it a very useful database. With the inability to subscribe to online books and journals, and poor funding for the purchase of hard copies, eGranary as an ICT tool form the library, has helped to promote not only the image of the library, but also ICT.

Libraries therefore play a significant role in the development of ICT. In the United Kingdom, for instance, the Durham Public Library has nearly 200 public access computers in libraries within its network See

<http://www.durham.gov.uk/durhamcc/usp.nsf/pws/libraries>. They offer free access to:

- The Internet
- Email facilities
- A range of software application including Microsoft Word, Access, excel, Power Point, Publisher and Photodraw
- Scanning facilities
- Video conferencing

The Leicester County Council has a similar programme through what it calls the peoples network. See

[http://www.leics.gov.uk/libraries/internet\\_services/peoples\\_network.htm](http://www.leics.gov.uk/libraries/internet_services/peoples_network.htm). The

Tonypandy libraries, on the other hand, have a project, which they describe as 'ICT for Learning Project'. See [http://www.rhondda-cynon-taff.gov.uk/libraries/whatson\\_ict\\_for\\_learning\\_project.htm](http://www.rhondda-cynon-taff.gov.uk/libraries/whatson_ict_for_learning_project.htm).

These three examples illustrate how even public libraries can be instrumental in the development of ICT by empowering their publics.

However, in the developing world, a number of key areas have been identified where ICT can further develop and enhance social development. According to Development Gateway, which focuses on uses of ICT for development (<http://topics.developmentgateway.org>), some of these areas include: capacity building and training, operation of community telecenters and cyber cafés, empowerment of women through ICT, ICT in education, health, governance and commerce, use of ICT for the development of indigenous skills, introduction and application of broadband, knowledge sharing, tourism, enforcement of intellectual property rights, etc.

While libraries can be instrumental to the development of ICT, and vice versa, it is important to also consider critical issues, especially in the deployment of ICT for educational development. After a study of both developed and developing countries, Robert Hawkins (2004) identified ten lessons, which are useful for our purposes too.

They are:

1. Computer labs in developing countries take time and money, but they work
2. Technical support cannot be overlooked
3. Noncompetitive telecommunications infrastructure, policies, and regulations impede connectivity and sustainability
4. Lose the wires (in other words, go wireless)
5. Get the community involved
6. Private-public sector partnerships are essential
7. Link ICT and education efforts to broader education reforms
8. Training, training, training
9. Technology empower girls
10. Technology motivates students and energizes classrooms.

Proper understanding and internalising of these lessons will significantly affect how libraries integrate and utilise ICT.

### **Libraries: The New Paradigm**

Libraries, from the foregoing, have imbibed a new paradigm of service. There has been a shift from being documentalists, archivists, to be a gateway to knowledge. The librarian has also shifted from being the ðall-knowingö custodian of knowledge to a ðguideö by the side. He guides clients on how to navigate effectively through www. He creates portals for his clients because of the mesh of data now readily available but quite meshy. The library today is a technologically driven one that uses the principles of traditional library services to organise knowledge and communicate same to clients in the global community.

The library today is no longer a fixed structure of stones and blocks. It is a mesh of wires and cables transporting data from one remote server to the other. Libraries today therefore necessarily have to move away from the traditional buildings without necessarily destroying the structures. The architecture for library buildings must take into consideration the provision of access points for computer networks, telecommunications facilities, and online resources. Libraries in Nigeria can only be a part of this global phenomenon as our poverty even makes linkage to, and use of ICT more essential.

### **Challenges for Librarians in Nigeria**

Librarians, on their part, do have a shift to make too as pointed out above. Some of the challenges librarians in Nigeria must face include that of:

1. accepting that ICT can no longer be divorced from the profile of the librarian
2. train in the use of computers and other ICT resources
3. retrain in the use of computers and other ICT resources
4. train and retrain users in the adaptation, exploration, and exploitation of ICT teaching and learning
5. consider and implement leadership and organisational change to meet up with present challenges

Since these issues go beyond library budgets, heads of libraries may have to focus more on fund raising and project management in order to be effective and efficient in delivering services (Nyerembe, 2001). Librarians will have to be more proactive in utilising ICT. Waiting for sponsorship before embarking on self-development will have to be re-considered. The good thing about ICT is that most of the resources also have ðhow tosö, so that the individual is never left blank about procedures for use.

### **Challenges for Nigerian Libraries**

Libraries in Nigeria have a most challenging environment to work with presently. The most immediate demand appears to be that of formulating ICT Policies that will drive the adaptation and adoption of ICT. In a recent workshop on ICT for Teaching, Learning and Research ó A Workshop for African Universities, organised by the Partnership for Higher Education ([http://www.foundation\\_partnership.org](http://www.foundation_partnership.org)), some of the conclusions on the place of ICT Policies are:

- ICT policies create an enabling environment for implementation
- They are required for optimal transformation

- They enable the long-term viability and sustainability of ICT use
- They raise awareness of ICT use in the institution.

The workshop went further to identify implementation issues as consisting of the following:

- Strategic and operational plans are cyclical and should be considered an ongoing process
- Setting realistic priorities is important
- ICT policies should be linked to other policies and strategies within the institution, including a change management strategy
- Mobilizing sufficient human and financial resources is imperative
- Piloting draft policies in advance of final implementation might help bring about consensus
- It is essential to have top management actively involved as ICT champions. But establishing an ICT Policy should not rely on a top-down approach. If all stakeholders are involved, they will feel a sense of ownership.

Another issue challenge for libraries in Nigeria is that of ICT budget. This has to be clearly stated as a separate budget head. Information and Communications Technology is a capital intensive investment. So, in budgeting, sustainability must be built into it. The formulation and implementation of ICT Policy provides a good background for funding issues.

The present funding situation of libraries in Nigeria will need to improve in order to adapt and adopt ICT. Fund raising involving external funders, collaborative activities and partnerships are therefore inevitable. These are critical issues to contend with if libraries in Nigeria will serve as tools for ICT development.

### **Challenges for the Nigerian Library Association**

The Nigerian Library Association has its own challenges as the leader that provides direction to the constituent members. Training and setting of standards appear to be the more critical issues. Training and retraining of heads of libraries as well as other library staff are needed. Standards are important for ICT development because most of the resources will eventually be shared either online or offline. There should be standards for minimum acceptable configuration of hardware, network accessories. These standards will facilitate the sharing of files. There is also a need for standard on the number of computers per library user, and the protocol for online communication.

The association also has an influence on the Library schools so that the curriculum of library schools in Nigeria will reflect the trend in the market. Collaborative schemes can also be worked out among library schools so that zoning of specialised ICT courses can be undertaken.

The Library Association can play a most significant role in consortium building as cost of software is very high. Individual libraries might not be able to pay for licenses of their library software. Apart from cost-saving, the platform of consortia can also be used to develop human capacity, which can be (co-) sponsored by external donors.



**Conclusion**

Libraries, from the discussion above, are ready tools for ICT development. There is a symbiotic relationship between the library and ICT, such that any development in ICT accelerates library development. In the same vein, any development in the library today, can only be through the deployment of ICT. Thus, it is imperative that librarians, and libraries in Nigeria in particular, would accept the paradigm shift that has confronted our traditional practice of librarianship. Libraries, more than ever before, have become an integral part of ICT in education, governance, health, and social services. Moreover, the status of librarians has soared because of their abilities and potential to organise knowledge and communicate this in most acceptable format to users.

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