ICT AND THE DEVELOPMENT OF LIBRARY AND INFORMATION SCIENCE

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Abstract:
This paper on ICT and the development of libraries and information science, begins with the introduction of what a library is. The key concepts of the topic such as ICT development and information science were defined. Brief history of the introduction of ICT in the library was given. It started in the library of Ibadan in 1984, from there, it spread to other libraries. The paper also discussed how ICT facilities are employed in acquisition, cataloguing, circulation, serials, etc. It is clear that the introduction of ICT in Nigerian Libraries improves the efficiency of library services in Nigeria. The paper concludes with some problems and recommendations.

The objectives of any library is to collect, organize, preserve and disseminate information to their particular users. It is usually presented by the use of appropriate Information and Communication Technology (ICT). Modern technologies in libraries create a new forum for global information access. The main objectives of this paper is to discuss about the ICT and the development of library and information science.

Key Concepts
The World Book Encyclopaedia (2004) defined library as “a collection of books, periodicals, films, recording, computer, databases and other materials”. Another authority Aguolus (2002) opined that libraries are social institutions founded to conserve knowledge, preserve the culture of the society, provide information, assist education and research and provide environment for recreation. He also defined libraries as the products of highly development societies embodying all that have been learnt, recorded, preserved and made available to present societies. Liverpool (2002) defined Information and Communication Technology (ICT) as a generic term referring to the technologies used in collecting, storing, editing and passing on informational various forms. Butcher (2003) citing Gunton (2002) defined ICT as electronic technology for collecting, storing, processing and communicating information. The Longman Dictionary of Contemporary English (1978) defined development as the gradual growth of something, so that it becomes bigger or more
advanced. Development is not one sided. It is all round. It is not growth. It is more than growth.

Information science is defined as a discipline, which investigates the characteristics of information and the nature of the information transfer process, while not losing sight of practical aspect of collecting, collation and evaluating information and organizing its dissemination through appropriated intellectual apparatus and technology.

ICT and the Development of Library and Information Science

The application of Information Communication Technologies in Nigeria dates back to 1980. Their introduction to library operations dates back to 1984 with International Institute of Tropical Agriculture (IITA) Library and Documentation Centre, Ibadan. The Library’s card catalogue was converted to an electronic format to create the information system named ALISTRA. This project was followed closely by Federal Institute of Industrial Research, (FIIRO) Oshodi library in 1988. Since then the application of information technologies has spread in Nigerian Libraries (Ayo, 2000).

Academic libraries (libraries in higher institutions of learning were equipped with TINLIB in the early 1990s. Some libraries of government parastatals and research institutions were introduced to computerized documentation system integrated set of information system (Micro CDs/SIS) software as early as 1988. Other organizations such as IITA, FIIRO and recent one, National Library of Nigeria (NLA) have organized training on CDs/ISIS at basic and advanced levels.

Some libraries according to Ayo (2000) are using information and communication technology (ICT) for database management Internet search, website management and general online service for their users.

Three major areas of library operations are particularly amenable to the application of ICT, the housekeeping function, CD-ROM and Networking. The range of possible ICT application in each area will now be described.

House Keeping Function

Oketunji (2001) classified library housekeeping functions into four systems namely: acquisition, cataloguing, circulation and serials.

a) Acquisition: This section concerned with the selection and acquisition of books and other materials by purchase, gift exchange and other means. Most of the functions of acquisition sections of the library are repetitive. The result is that there could be repetition in the ordering of the same material or multiple pay for the same thing. With the use of computer based acquisition such problems are eliminated. The computer can easily print order slips, produce reminders or cancellation notices as well as financial reports.
b) **Cataloguing:** One of the most important library operations is cataloguing. It is the traditionally most time consuming technical operations in libraries. The end products of cataloguing provide the much needed access to library collections. According to Oketunji (2001) automating the cataloguing section can facilitate the following:

- Establishment and maintenance of catalogue database, names of authority files, subject file and local authority lists.
- Online Public Access Catalogue (OPAC)
- Inventory control, establishment of shelf list control record, added copy control and inventory statistics.

One of the most important benefits of the application of computers to cataloguing that directly affects library users is Online Public Access Catalogues (OPAC).

c) **Circulation:** The use of computer in the circulation section of the library helps to eliminate some of the repetitive nature of manual work. Work in the circulation section of the library involves:

- Charging and discharging of books
- Writing of overdue notice
- Reservation of book and compilation of accession list of new arrivals.
- Recording of fines and keeping statistics of the libraries with the use of computer.

These jobs are performed faster, neater and with high level of accuracy.

d) **Serials:** The serial section handles publication issued in successive parts at regular and irregular intervals. Maintaining the operation of this section in a manual system or environment can be cumbersome. The situation is totally different in ICT. ICT enhances the following:

- Subscription control
- Information, storing and retrieval which entails Selective Dissemination of Information. (SDI).
- Services
- Management’s functions, which might cover areas like management of work or user service.

**User Services**

Service is at the heart of library operations, information and communication technology has played, is playing and will continue to play a major role in delivery of quality service to the users. Some of services are:

a) **Book Borrowing:** To the user the changes occurring in the library because of ICT become evident when a book is checked out. Bar codes and laser scanners have
replaced hand stamped cards, due date and patron fines are stored in a database not in file drawers.

b) **Library Service in the Home:** ICT made the provision of services a pleasant reality to the users patrons with terminal and modern in their home or place of business are able to search the online catalogue for a book, place a book on hold or reserve, and request an inter-library loan.

c) **CD-Rom Searching:** The compact Disc-Read only memory CD-Rom is an information technology with great potential for libraries in general, its potential lies in storage capacity, compactness, portability, reduced shelf space and durability. CD-Rom will continue to be relevant in our libraries because of its relatively cheap production and maintenance cost.

d) **CD-Writable:** The problem of database creation in libraries has been solved with CD-Writable accessories. It is now possible to write directly to CD. Newspapers database can be created in the library thereby reducing the space occupied by the old newspapers.

e) **Networks:** A network is a way of connecting computers so that they can communicate with each other and share resources like printer and storage space. The Internet is the biggest global computer network.

The Internet offers a wide range of services which can enhance library operations. These include electronic mail, electronic commerce, electronic banking, file transfer, remote logging, www (the worldwide web), teleconferencing, video conferencing, bibliographic services, etc.

a) **Electronic Mail (E-Mail):** Electronic mail is simple a way of sending text message to other people who have internet access. It is a fast, easy and inexpensive way to communicate with other internet users around the world. E-mail is an important tool in the library, inter-library loan service can be provided with it.

b) **E-Commerce:** Goods and services are advertised or purchased through the internet libraries are supposed to provide this service to their clients, acquisition of library materials can be done on the Internet.

c) **Bibliography Services:** These are known as information utilities and are essentially libraries on disk. Unlike the public libraries, which may be located some distance away and open only on a certain number of hours per week, bibliographic services are available virtually round the clock from any place where there is a computer with modern, through bibliography services hundreds of client can use the same materials at the same time.

d) **Wide Area Information Services (WAIS)** The internet wide area information services comprises standardized database where users can retrieve full text or multi-media documents. It is an information retrieval service which has database of information typically of bibliographies, textbooks, abstract, indexes and library catalogues.
e) **Telnet:** Telnet is a powerful internet tool that enable remote login to another computer. It was developed for the purpose of long distance. Computer scientists located at any remote location can have access to library information anywhere in the world. Libraries used it to offer electronic and catalogues services.

f) **The World Wide Web (WWW):** The WWW is today what is driving the internet. It allows all kinds of documents containing text, videos, sound and dynamic graphics or pictures to be hyperlinked together. The entire collection of these documents, stored in computers system (called web sites) around the work is what known as the www (Woheren, 2011). The effect of WWW access on libraries is enormous as acknowledged by Oketunji (1996:103):

> One can now search and display record from 18 different LC files, including the names and subject authority files by using the library of congress catalogue web page. One can also view the public access catalogues of other libraries from this site.

h) **Teleconferencing:** When group of people wishes to meet without all coming to the same location, they can do so by teleconferencing. Teleconferencing according to Brightman and Dimsdale (1986:26) is done electronically, by voice over radio or telephone conference call, by one-way or two-way, television or by computers. It is relatively inexpensive. There are no travel costs and time away from the office, for conference attendance is kept to a minimum.

h) **Video Conferencing:** Video conferencing is another innovation provided by information technology. A video conferencing can enhance the quality and intensity of communication, engender a sense of responsibility and involvement among individual who could not otherwise meet with each other and lead to articulation of policy, goals and objectives through consensual decision making. (Littman, 1995). It can also enhance remote collaboration, which has traditionally been limited by voice only (telephone) or text only (e-mail) interactions. Video conferencing according to Littman (1995:103):

> ... as a communication facilitator in an academic library can enable librarians to hold interactive sessions, regardless of location on such topic as internet access and use computer security, personal information and privacy, intellectual freedom and copyright.

The advantages associated with the incorporation of video-conferencing in libraries especially academic are numerous. Specific advantages are:

i) Reduced travel expenses
a) Effective use of time
b) Flexible communications
c) Creation of virtual workgroups i.e. dispersed work-group can be linked to optimize collaboration on such subjects as network services; user charges and the emerging role of the national information infrastructure.

d) Application sharing.

Video conferencing can reduce the isolation of librarians who telecommunicate the work from home and optimize time spent learning about new library development. It also supports direct instruction in the use of online information retrieval strategies and techniques to remote area so they can gain skills for conducting independent research.

Problems of the Use of ICT in our Libraries

- The ICT facilities are expensive and the resources allocated to the library are inadequate.
- ICT facilities need efficient supply of electricity which is not available in Nigeria.
- The ICT facilities need qualified personnel. Most Nigerian library staff are not skilled in handling ICT facilities.
- ICT facilities have to be imported from overseas.
- It therefore takes a long time to acquire.

Conclusion

This paper is on ICT and Development of Library and Information Science. It gives the definitions of library, ICT, development and information science. Then discussed the ICT and development of library and information science. Conclusively, the paper analysis the important and serious need of ICT in developing the Library and Information with reference to Nigeria’s content and provided the way forward.

Recommendations

- Sufficient money should be allocated to the library because library is the nerve centre of any educational institution.
- All Nigerian libraries should introduce ICT facilities as a policy.
- Librarian themselves should attend workshop and short courses on the use of ICT facilities.
- The existing facilities should be regularly maintained.
References

ALA World Encyclopaedia of Library and Information Services (1986).


