

# Application of ICT Facilities in Special Libraries: Impetus for Effective Information Services and Organizational Growth

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**Amaoge Dorathy Agbo**

Department of Library and Information Science Michael Okpara University of Agriculture, Umudike, Umuahia.  
E-mail:oge\_dorathy@yahoo.com

## **Abstract**

*The role of Information and Communication Technology in achieving institution's or organization's strategic goals can never be over emphasized. Most organizations and institutions are therefore employing it (ICT) as a tool for competitive advantage to support the accomplishment of their objectives. Special libraries are known to be attached to organizations that invariably need strong and steady strategic information to facilitate their steady expansion and growth. To realize this steady growth and competitive advantage, ICT not only has to be an additive to special libraries but a critical component towards supporting provision of effective information services to the parent organization. This research work therefore sought to take a look at the concept of ICT, overview of special libraries, ICT application in special libraries operations, benefits of ICT application in special libraries and factors affecting ICT application in special libraries. It concluded by giving recommendations on strategies for enhancing ICT application in special libraries.*

## **Key Words:**

Information and Communication Technology; Special Library; Information Services

## **1. Introduction**

The primary function of every special library is to provide facilities and up to date information services for research and development of the parent organization. Information and Communication Technology (ICT) has been found to be of tremendous important in improving the services provided by special libraries as a result of the inability of the existing traditional manual methods to cope effectively and efficiently with the increasing volume in the library, Ducombe and Heeks (1999) cited by Anyakoha (2004) defined ICT as the electronic means of capturing, processing, storing and disseminating information. According to Ige (2001) ICT implies processing, storage and retrieval of information in coded form and its transportation and/or exchange between sources/terminals electronically. Similarly, Ekpo (2001) noted that ICT have been used to simplify availability and access to information and they encompasses the following complementary technologies: telephone, software technologies for distribution of information process, web-browser and servers, multimedia systems, and peripherals. These technological tools and resource are used to communicate, create, process, disseminate, share, store and manage information.

ICT has established itself as an essential tool in information services

delivery (Ayodele, 2001). The essence of ICT is in its power to help individuals and societies achieve greater access to knowledge and ideas for the benefit of humanity. ICT has led to improvements in the operations and services in industries, administration, management, education and other services including libraries as it ensures speed, efficiency, accuracy in record keeping, provision of up to date information, access and improved services thereby bringing development and organizational growth. There various areas in which ICT can be applied in library services. Such areas include but not limited to resource sharing, digitized circulation system, current awareness services, information subscriptions and ordering, acquisition of information materials, creation and management of databases, electronic mail services, publications, selective dissemination of information and information storage.

## 2. Overview of Special Libraries

Knowledge is power and successful companies and organization have something in common, they are able to capitalize on timely information to gain a market advantage. Thus, they rely on a well-funded and well-staffed special library to give this information edge (Elin, 1995). The phrase “special libraries” encompasses an enormous range of library types which do not fit comfortably into other categories of libraries such as public library or academic library. Many special libraries are open to public, yet they are not considered to be public libraries because they do to contain general information covering a wide spectrum of subjects or topics.

Morley (1976) defined special library as a service organized to make available whatever knowledge and

experience to further the activities of a particular organization. Similarly, the international standards for library statistics (1970) defined special library as an independent library covering one discipline or particular field of knowledge or a special region interest. It noted that they include libraries primarily devoted to a specific form of document or libraries sponsored by an organization to serve its own work related objectives. On the other hand, Echelman (1976) presented a suggested definition which synthesizes the earlier and less general proposal by presenting the characteristics that make a special library distinct from other libraries. He posits that special libraries could be found in very many companies and organization. Secondly, they are tasked with the responsibility of providing education and information assistance to the parent organization. Bauer (2003) noted that they could be found in private and industrial organization such as Banks, Insurance Companies, Advertising agencies, public utilities, publishers, chemical and pharmaceutical manufacturers, petroleum producers, engineering firms, international and governmental organization etc.

Special libraries provide a client focused library and information service. Their staff obtain, organize, and provide access to selected, current and authoritative information sources for their organization. The library staff uses information resources and technology to facilitate effective and efficiency client access to information that support the goals and business of the organization. According to the guidelines for Australian special libraries (2010), special libraries provides value adding services such as:

- Building a dynamic collection of information resources base on a deep understanding of clients information needs.
- Training and assisting clients to effectively access information and use relevant technology.
- Gathering evidence to support decision making.
- Current awareness of emerging technologies and best practices in information and knowledge management.
- Competitive intelligence and market research for business development.

The guideline noted that information and data are essential for evidence, information and competitive advantage; hence special libraries play an important role in organizations' work in the information and knowledge age. Similarly, special library association guideline (2003) identified that special libraries should provide a range of quality and relevant services in alignment with the objectives of the organization, using relevant and current technology. It noted that their services include but not limited to the following:

- Marketing services: The special library is responsible for providing marketing strategies that should inform clients of the resources and services offered by the library. The strategy should be aimed at increasing awareness of the value of the library to the organization.
- Selective dissemination of information; The special library is responsible for evaluating, accessing and providing the most appropriate methods of

information dissemination to meet client's information needs.

- Resources sharing: The special library should develop and participate in cooperative networks to provide document delivery and facilitate resources sharing.
- Access: It is essential for the special library to facilitate clients' access to information within the library to enable them have access to information resources efficiently and effectively.

The uses of ICT in special libraries to enhance these services are self-evident and overwhelming. This is because the special library needs it in order to give efficient services to its users. Not only is the speed of its operation high, the volume of its output is correspondingly large. Olorunsola (1997) asserts that, the use of information technologies has had a far –reaching effect in special libraries in that the provision of information can be made more effective and efficient with the use of electronic information resources.

### **3. Application of ICT in Special library Operations**

The future of library and Information services is bound up closely with the development of ICT, as many of its activities and services can be enhanced and many new services developed using suitable ICT in an appropriate way. According to Anyakoha (2005) ICT revolution has taken librarianship to some dizzy heights, as tools that libraries used to serve their patrons have changed with the increasing application of modern technology. These tools and equipment can be utilized for the following library operation: resources sharing, digitized circulation services, current awareness

services, information subscription and ordering, acquisition of information materials, creation and management of databases, electronic mail services, publications, information storage, information analysis and design, information networking, selective dissemination of information, advisory services, bibliographic control services, lending and borrowing, website utility, research, online communication and information processing.

Both Oketunji, (2001) and Chiwetalu, (2003) identified an area of ICT application to library operations, which they called “housekeeping” operation. This is the day-to-day library functions, they include: ordering and acquisition, cataloguing, circulation control and serial control. One of the implications of use of ICT is that libraries can reach out globally to provide their services 24hours a day in very cost effective manner. ICT has enabled users to avail many services without any human intervention, it has also made it possible to have scholarly materials, websites, multimedia presentation, quantitative data, working papers etc. According to Chauhan (2004), the advent of computer, with their ability to process large amount of information and output in a variety of formats has finally brought the library to the customer, wherever he or she may be located.

Information services today can be provided through various electronic format whether offline (CDROM) or online, providing convenience of use, storage, timeliness and currency of information. According to Butterfield (2003) some of the important changes that developments in ICT have brought about in information services are:

- Changes in formats, contents and methods of production and

delivery of information products and a new business model for use of information products. This requires procedural and infrastructural change and cost implication in Libraries.

- Emergence of internet as the largest repository of information and knowledge.
- Extinction of significant transformation of some of the conventional information services such as press clippings consent pages, company information etc.
- Use of new tools and technologies for dissemination of information.
- Transformation of role of LIS professional as the subject specialist and end user etc directly involved in the information work and consequent need for new skills.
- Shift from physical to virtual services that offer convenience of time and location for access to services.

He added that computer storage and compression technologies have made it possible to store large amount of data and information on small digital and optical media, eliminating requirement for large space for holding the printed sources.

In references services, the internet has emerged as the largest repository of knowledge and information containing billions of documents, a major part of which is available free of cost. It means that the special library has access to more reference tool that are more up to date and cheaper. Compilation of bibliographic, reading lists and state of art reports are very parts of LIS work, particularly in special libraries. Browsing through the manual indexes and abstracts is a tedious and time consuming work and does not always produce up to date result.

Chauhan (2004) asserted that availability of databases in electronic form on CDROM or online, offers convenient, efficient and cost effective information retrieval.

Similarly, current Awareness Services (CAS) has been important means for keeping the users up to date in their areas of interest Cox and Mohammed (2001) observed that special libraries now compile current awareness bulletins using predefined search strategy and running on the database either on CDROM or online periodically and getting the desired output. They noted that subject to copyrights, the output can also be stored on a local system, and disseminated online (internet, intranet) and offline (print, CDROM, email). Arora (2001) added that table of contents of most journals are available free from the publishers' sites and some publishers even offer free email update of table of content

It is not possible for special libraries to have everything that its clients may need. Special libraries use document delivery services from other libraries and commercial organizations for copies of research papers etc not held by them. ICT has made the document delivery services very simple and reliable. As described earlier, no library can fulfill all the needs of its users from its collection. Resource sharing through inter-library loan is a necessity for special libraries. Access to the catalogue of partner libraries is crucial to inter-library lending. Chauhan (2004) identified that Union catalogues, standardization and machine readable catalogues are aimed at promoting resource sharing. He added that Librarians can now access catalogues of thousands of libraries across the world using internet.

Library and information science (LIS) being a service organization, customer services and sure training are important aspects of its activities. A continuous interaction with users for feedback and information is a must to maintain the standards of service. Rosenbalt, (1999) identified that while the conventional means of interaction such as meetings, suggestion box, surveys and interviews are still important, use of new means of communications such as email, web forms, bulletins boards, discussion forums and listserv are fast replacing these. Not only do these tools provide a fast, convenient and transparent and cost effective medium, but also offer scope for innovations and greater peer participation. Some of these tools can even be used by the special libraries to involve the users in book selection etc. LIS customer relations can be tremendously improved by innovative use of technology like virtual library tours, making interactive library maps and floor plan available on the library website.

#### **4. Benefits of ICT Application to Special Library Services**

Information and communication Technology (ICT) has demonstrated its impact on the library resources, systems, services and operations. It has provided one of the best innovations in the history of libraries, and it is changing the shape of libraries and the role of librarians at an unprecedented pace (Lewis, 2007). The essence of ICT is in its power to help individuals and societies achieve greater access to knowledge and ideas for the benefit of humanity (Ayo, 2001). Various writers (Okore, 2005; Nwachukwu, 2005; Madu, 2004) have identified the benefits of ICT in library operations to include; provision of speedy accurate and easy access to information; provision of remote access to users; provision of up-

to-date information; permanent storage of information; saves time as well as generating fund and enhancement of research. The application of computers in special library services has enhanced the rate at which information and data are sourced from the library. This is because the computer retrieves information stored in them as fast as possible thereby enhancing the services provided by the special library. Similarly, the application of ICT has enhanced accessibility to information from all over the world. Through the internet, wide range information materials are made available in different formats thereby increasing accessibility to information. This corresponds with the assertion of Rsamzan and Singh (2009) that ICT allows easy integration of various library activities, increases efficiency in acquisition, access to data, cataloguing, classification, information retrieval and dissemination. It eliminates uninteresting and repetitive work; helps avoid duplication of efforts; increases the range of services; provides marketing opportunities; facilitates cooperation and the formation of networks and resources sharing in libraries. Madu (2004) noted that the application of ICT in a special library can easily access the collection of other libraries in a network.

In addition, the application of ICT in special library operations also reduces the tedious and energy-sapping tasks associated with manual operations in the library. It enables special library staff to reduce repetition, drudgery and time consuming clerical activities such as typing, record-keeping and accounting. Madu (2004) observed that the result of applying ICT in special library operation is that the library staff will have more energy and time which can be used to attending to more library users and perform more professional duties. Also

Johnson (1991) commented on the issue of saving time, they noted that with the use of ICT, time of the user will be saved thereby enhancing and increasing patronage of the special library services. Similarly, CIT facilities can be used in storing information and archival materials and the library. Nkanu (2007) identified ICT facilities used in storing and providing information services in these libraries to include computers, microfilm, microfiche, CDROM, database, video tapes and audio tapes. The use of these facilities for storage and provision of library and information service according to him gives libraries better image as information depot and medium through which information is stored.

## **5. Problems Associated with ICT Application to Special Library Services.**

It is misleading to assume that the introduction of ICT in Library services provides a perfect and trouble-free information management possibilities. There are various problems encountered in the application of ICT in library operations, such problems include:

**5.1 Lack of funds:** ICT is a capital – intensive venture both in acquisition, installation, maintenance, training and sustainability. As a result, not all libraries do have funds to venture and sustain ICT on their own. Ani (2005) revealed that the level of funding of libraries and their ICT budgets in Nigeria is comparatively low. He identified that sixty percent (60%) of the libraries surveyed had no annual ICT budget. His study collaborated with the findings of Oketunji (2001) which also revealed that a larger percentage of libraries do not have regular budgetary provision for ICT. Omekwu (2004) pointed out that initial investment in system study, design implementation, procurement of hardware and software

could be very expensive. He added that even after full implementation of ICT, areas of further expenditure include system maintenance or replacement. Similarly, Edoka (2000) observed that the cost of installing and maintaining a computer is high and many libraries in developing countries cannot source funds; for this sort of purchase. In addition, Boiurgouin (2002) viewed available resources as one of the determinants of ICT implementation. He intimated that high cost of equipment and resources limits organizations ability to use ICT facilities.

### **5.2 Lack of adequate power supply:**

ICT equipment depends solely on electricity power supply for functionality and effective performance. In Nigeria, intermittent and frequent power outage, erratic and epileptic with an unending sign of improvement poses a serious threat to ICT application in libraries. Nnadozie (2007) stated that public power supply is unreliable and the alternative is expensive and out of the reach of these poorly funded libraries. Omekwu (2004) added that the epileptic power supply causes serious damage to the computer hardware and crashing of huge databases. This is one of the reasons why many information professionals are not enthusiastic about computer-based Library system. Pertinently, frequent power outages remain a problem in the country and constitute a serious problem to automation. This makes the cost of running power generating plants prohibitive for libraries.

**5.3 Lack of appropriate technical skills, education and training:** Presently there is a low level of ICT skills among information professionals in the country; most of them have little or no skills to work with computers, browsing and surfing the internet to access and retrieve

information. Oni (2004) identified that although information technology can yield benefits, effective implementation involves knowledge of recent technological trend which might be lacking among library staff, an analysis of Library specification and requirements, ongoing user education which is a major detriment for efficient and effective use of ICT tools in the Library. Jordan (2003) also submitted that inadequate ICT training in poorer countries arise from both lack of ICT literacy and the fact that many local library schools do to integrate ICT studies in their curriculum.

**5.4 The issue of phobia:** This has been of serious concern, more especially to the traditional librarians who show fear in handling computers and its associated equipment. This assertion was confirmed by Oketunji (2001) and Omekwu, (2004) who disclosed that the conservative disposition of library staff to the introduction and use of ICT in library operation and services pose a threat to their jobs.

### **5.5 Inadequate infrastructural facility:**

poor infrastructural facility portends a major constrain in the implementation of ICT. Information and Communication Technologies are a combination of both hardware and software to access, retrieve and disseminate information. Lack of adequate bandwidth size and the appropriate antivirus and other necessary software can deny both information professionals and users optimum utilization of the facilities on ground. Gbaje (2007) maintains that bandwidth connectivity and their providers are deployed using expensive technology like VSAT and radio. These connections are very slow and erratic to support the uploading and download of electronic resources. On the other hand, Steinmueller (2001) in a report of his experience of ICT in developing countries cautioned that its visibility among library operations is only possible where relevant facilities are available.

## 6. Conclusion and Recommendation

The future of library and information services is bound closely with the development of ICT, as many of its activities and services can be enhanced and many new services developed using suitable ICT in an appropriate way. This work on ICT application in special libraries has revealed that ICT is essential for effective information service delivery. Based on the articulated factors affecting ICT application in special libraries, the following recommendations were made:

- Adequate fund should be provided for the procurement of ICT facilities in the libraries to ensure better performance.
- There is need for the training of staff on ICT to enable them cope with the challenges of ICT application.
- Management should encourage the application of ICT in those areas in which ICT is not applied to meet up with the ever increasing demands of the clients.
- There is need to provide adequate infrastructural facilities necessary for easy and effective application of ICT in library services.
- There is need to apply caution in the choice of library software to avoid system collapse.
- Maintenance of ICT facilities is necessary to ensure constant functionality.

## REFERENCES

- [1.] Ani, E.O (2005). Evolution of virtual libraries in Nigeria: myth or reality. *Journal of Information Science*. 31(1) 67-70.
- [2.] Australian Library and information Association (2010). Statement on library and information services staff appointments. *Encyclopedia of library and information science*.
- [3.] Anyakoha, M.W. (2005). Information and communication Technology (ICT) in library and information service. *Coal city libraries* 2 (1&2) 1-2.
- [4.] Anyakoha, M.W. (2004). Information and Communication Technology (ICT) in Library and Information Services. Keynote address presented at the Annual Conference of the Nigeria Library Association, Enugu State chapter, 10-17 Dec.
- [5.] Ayo, T.A. (2001). Information and Communication Technologies and the Information age: The Nigeria perspective. A compendium of paper presented at the 39<sup>th</sup> Annual conference and AGM at Sam Mbakwe hall, Imo concord hotel, Owerri June 17-22.
- [6.] Arora, Jagdish (2001). Web-based digital resources and services: Trends and innovation. In creation and management of digital resources. Papers presented at the eight National convention for Automation of Libraries in education and Research Institutes (CALIBER-2001) March 15-16.



- [7.] Ayodele, A.O. (2001). Sustainability of Library automation projects. A paper presented at the cataloguing classification and indexing section of the Nigerian Library Association Seminar/workshop Akure October 22-27.
- [8.] Bauer, P. (2003). *An overview of special libraries*. New York: Neal-Schuman publishers.
- [9.] Bourgooin, F. (2002). Information communication technology and the potential of rural terrorism SMME development: the case study of wild coast. *Development Southern Africa*. 1(19): 7-14.
- [10.] Butterfield, K. (2003). *Online Public Access Catalogs*. Encyclopedia of Library and Information science, Marcel Dekker, 2268.
- [11.] Chaudhan B.P (2004). ICT Enabled Library and Information Services. Winter School on ICT Enabled Library and Information Services. Tiet Patiala.
- [12.] Chiweatalu, B.N. (2003). Effective utilization of information communication technology (ICT) resources for national development. *Nigerian Journal of Unity and development* 2 (1), 24-27.
- [13.] Cox, A. and Mohammed. H. (2001). E-books. London. Free print. on 15/09/10.
- [14.] Duncombe, R. and Heeks R. (1999). Information, ICT and Small Enterprises: Findings from Botswana Manchester: University of Manchester, institute for Development, policy and Management, working paper 7.
- [15.] Echelman S. (1976). Towards the new special library. *Library Journal*. 101(1):91-94
- [16.] Edoke, B.E. (2000). *Introduction to Library Science*. Onitsha: Palma publishing.
- [17.] Ekpo A.H. (2001). Developing the knowledge and skills on the new information technologies: a futuristic approach. Paper pretend at the international conference of human capital development and global opportunities in the national manpower board. Abuja. May, 14-16.
- [18.] Elin B.C. (1995). Special libraries: putting knowledge to work. *Library trend*. 25(1)399-416.
- [19.] Gbaje, E.S. (2007). Implementing a National virtual library for higher institution in Nigeria. *LIBRES*. 17(2). On 12 November, 2009.
- [20.] Ige, O. (2001). The policy, Legal and Institutional Framework for Rapid Expansion of ICT dividends in Nigeria.

- A paper presented at the International Conference on Human Capital Development and Development and Global Opportunities in communication industry, organized by the national Manpower board (NMB) Abuja, May 14-16, 2001.
- [21.] International Standardization of Library statistics (1970). Recommendation concerning the International Standardization of Library Statistics. UNESCO office of International Standards and Legal Affairs.
- [22.] Johnson, J.S. (1991). Computerizing information systems in developing countries: Keys to sustainable development. *Pakistan Library Bulletin*. 22:3, pp 22-30.
- [23.] Jordan, E. (2003). library skills in the tertiary environment: In-service education for librarians from developing countries. *Australian library journal* 52(1) 62-75.
- [24.] Lewis, D.L (2007). A strategy for academic libraries in the first quarter of the 21<sup>st</sup> century. *College and research libraries*. 1: 68 (5) 418-434.
- [25.] Madu, E.C. (2004). *Automation and Service provision in libraries and Information centre in developing countries*, in Madu e.C. (ed) technology for information management and services. Ibadan: Eni coleman publication
- [26.] Morley L.H. (1976). *Contribution towards a special library glossary*. 2<sup>nd</sup> ed. Special library association, New York.
- [27.] Nkanu, W.O. (2007). Availability and Utilization of information and communication technology facilities in Nigerian university libraries. *The information technologist*. 4(2) 56-62.
- [28.] Nnadozie, C.O. (2007). Current trends in ICT availability in south eastern Nigeria. *The information technologist*. 4(2) 39-55.
- [29.] Nwachukwu, V.N. (2005). Information Technologies appclaiton to libraries in devleping countries; the need for caution. *A Journal of Global Review of Library and Information Science I*. (1) 94-100.
- [30.] Oketunji, I. (2001). Computer Application to Librareis, in Librareis and Libareis: making a difference in the knwoeldge age. A compendium of paperas presented at the 39<sup>th</sup> Annual conference and AGM at Sam Mbakwe hall, Imo Concord Hotel Owerri, 17-22 June.
- [31.] Okore, M.I. (2005). The Challenges of Information Communication

- Technologies for Nigerian Academic Libraries. *A Journal of Global review of Library and Information Science*. 1(1) 84-93.
- [32.] Olorunsola R. (1997). Electronic delivery information in Nigeria. OCLC systems and services. *Library Philosophy and Practice*. 13(1): 12-16.
- [33.] Omekwu, C.O. (2004). *Planning for Library and Information Center computerization in Developing countries management and services*. Ibadan: Eni coleman publication.
- [34.] Oni, F.A. (2004). Enhancing the Performance of Library Operations through appropriate information Technology in Madu E.C. (ed) Technology for information Management and services. Ibadan: Eni coleman publication.
- [35.] Ramzan, M. and sign D. (2009). Status of information application in Pakistan libraries. *The electronic library*. 27(4) 573-587.
- [36.] Rosenbalt, S. (1999). Information Technology Investments in Research Libraries. *Education Review*, 34(4) source 29/09/10.
- [37.] Special Libraries Association (2003). Competencies for information professional of the 21<sup>st</sup> century.
- [38.] Steinmueller, W.E. (2001). ICTs and the possibilities for leap-frogging by developing countries: *International Labour Review*. 140(2)193-200.