



DEVELOPMENTS IN ICT: TRAINING NEEDS OF THE LIBRARY PROFESSIONALS

MAMATA. MESTRI

Assistant Librarian (Sr)
Gulbarga University , GULBARGA: Karnataka

Abstract:

The present paper explained about the techniques that have developed in Information Communication Technology and also described the applications of these techniques to libraries and information centres. The library professionals are in the state of confusion regarding the use and application of these technologies to their libraries. They need knowledge and skills so as to apply these techniques to their libraries. For this purpose, the paper listed different areas and techniques such as Library Automation, Computer Software, Computer networking, Information collection, storage and retrieval in digital format, Virtual Technology, electronic information services etc in which the present library professionals need training. The paper concluded with the emphasis to train the library professionals using appropriate methods depending the extent of use of ICT in their libraries.

KEY WORDS:

Training, Library Professionals, Information and Communication Technology.

INTRODUCTION:

The impact of Information and Communication Technology (ICT) developed library science techniques, tools and functions. Printed documents are of no use in the forthcoming years. In library, Card Catalogue will also become obsolete in future. The emergence of ICT developed its applications to library in the form of computer networks, digital storage formats, institutional repositories, subject gateways, online information services, web technology and search technology and so on.

APPLICATIONS OF ICT TECHNIQUES TO LIBRARIES:

The Information and Communication Technology is a dynamic and its techniques and applications are developing at a faster rate. Nadia Caidi¹ stated that “there are big changes. Five or ten years ago, libraries were traditional places to read materials, to get some information. Now they are places to find information, act more and more like gatekeepers. Society is changing well: the users think more and more of reading as other than for leisure. They need specific information and more leaders.

Developments in Information and Communication Technologies (ICTs), the libraries have been integrated at the electronic frontier to facilitate rapid transfer of information on a global scale. Advances in Computer Storage and Telecommunication methods, online access to databases, electronic journals, electronic knowledge banks, direct document delivery, teletext, teleconferences, bulletin boards, CD-ROMs, networks etc., have been the revolutionary developments in the last two/ three decades that have brought a great change in communication, storing and handling of information. The digital or electronic

Title : DEVELOPMENTS IN ICT: TRAINING NEEDS OF THE LIBRARY PROFESSIONALS
Source: Golden Research Thoughts [2231-5063] MAMATA. MESTRI yr:2013 vol:2 iss:7.

resources are dynamic in nature to share information globally and there has been an increased scope for automated delivery mechanism. Libraries today are termed as Digital Libraries and Hybrid Libraries. Knowledge preservation and dissemination have rapidly changed. Unlike simply providing access to holdings in print format, the electronic resources are procured to meet the information needs of the clientele. In the light of Information Bill 2002, it must be the fundamental professional concern of the Librarians to endeavour to predict, grasp, analyze and materialize such expectations and needs².

The ICT developments transformed and developed the library services as under:

- Automation and Mechanization of every function of the libraries;
- Compact Storage of Information, easy accessibility and faster communication;
- Subject databases particularly from academic institutions: Increasing number of institutions, especially academic and research institutes are making databases in their specialized subject made available;
- Automated Library Catalogue: Increasing numbers of libraries are making their Catalogue electronically available over the Internet which may extend the use of library resources.
- List Serves and discussion groups on a wide variety of topics. Participants have the opportunity to exchange and share current information;
- Document Delivery Services may be provided electronically using Internet Technology;
- Electronic Mails allow users to send messages or files to each other;
- Commercial Information databases are available on the internet include, DIALOG, Lexis-Nexis, Dow Jones News/Retrieval and many others;
- Telnet or remote login-allowing users to log into remote sites;
- File Transfer Protocol (FTP) and Hyper Text Transfer Protocol (HTTP) allowing users to access and retrieve files at remote sites;
- Gopher- a text only, non-graphic method to receive internet documents, which have largely been intergenerated into the World Wide Web;
- The World Wide Web allows users to jump from one resource to another in easier way, without going through gopher style menus;
- Video-conferencing and Teleconferencing involves linking more than two users, so that participants from different places over the world can see each other and view presentations;
- The Consortia like UGC-Infonet and INDEST provides the information through access to a large number of journals to academic libraries all over the India. Such services are enabled to economize the services from single platform, to avoid duplication of subscription, to strengthen the services of networking and encouraging research and development by providing information in easy accessible way.
- Development of Institutional Repositories and Virtual Libraries.

TRAINING NEEDS OF LIBRARY PROFESSIONALS:

The continually changing world of library and information management practices requires that modern library and information professionals continually update their skills through continuing education. Educators say that the skills developed from a Master of Library and Information Science degree remain relevant for approximately five years. With the seemingly endless wave of information and other new technologies to consider, how are library and information professionals to keep up once their formal education is completed? Learning generates greater community and a sense of confidence for the community's participants. The resulting strength of the community and its individuals yields advocates for change and experts in the value of the community³.

Considering the developments in ICT, Ramzan⁴ studied the IT applications in libraries in Pakistan and the knowledge of librarians on IT applications. According to him:

There is a need to provide sufficient hardware and software for library administration and user services and to subscribe to electronic databases for effective library services.

No library can function properly without an email and Internet connection in this information driven society.

Each graduating librarian must complete a certain period of internship before entering into the profession to gain necessary confidence and insight to the practical aspects of the librarianship.

A separate budget should be allocated for training whenever a new technology is acquired even if it is highly expensive. Librarians should initiate orientation programs for staff and users for newly implemented systems and technologies.

IT should be a core component of formal library education (in Pakistan). Library schools need to upgrade their syllabi regularly according to the job market and future requirements.

The need was also determined for librarians to document their experiences and to subscribe to professional magazines to update their knowledge, to take part in professional activities, and to participate in Internet discussion groups.

More emphasis should be placed on improving librarians' attitudes towards technology. Librarians' knowledge in IT, experience in computer use, level of awareness of technologies, recently in IT training are key factors impacting their attitudes towards IT. Library administrators need to address these factors while planning and implementing any IT based projects in Libraries.

Considering the large volume of information generated and communicated through the web, there is confusion of getting accurate information for a specific need of the users. There is frequent and faster change in technological applications in information sector. The high rate of technological change within the information and library sector, the constantly changing demands of users and the ever increasing amount of information available, means that the staff needs to update and develop their professional skills⁵.

The Training programmes and Continuing Education Programmes help the information professionals to cope up with technological convergence (change). The Training programmes are designed with the aims to develop the skills of the library and information professionals.

In developing skills for managing, creating and providing services in the digital environment, training and education will become ever more important. There will be increased need for educational organizations to inform students of the new realities and the new skills that they will need in the digital environment⁶.

TRAINING NEEDS OF THE LIBRARY PROFESSIONALS:

Based on the Information and Communication Technology developments and its applications to libraries, the following key areas, in which the working library professionals are, needed training:

1. Basic Computer and Networking Knowledge:

For working library professionals, who does not know about computer and information technology, there is need to know about basics of computers and networking. The course module covers fundamentals of computers, hardware, software, input, output devices, Linux (Red hat), software such as MS-Office, database management systems, Knowledge about LAN, MAN, WAN, INTERNET, Web publishing, Electronic Mail, etc.

2. Library Automation:

Computerization and automation of the library was started in the 1990s. There are many software packages and library automation packages developed by software vendors. To quote a few libsys, Alice, Librarian, Netlib, Libsoft, SOUL (Software of University Libraries) New Gen Lib etc. It is a problem for library professionals to choose an automation packages, which suit the needs of different libraries. For this purpose, there is need to study these packages and choose the best for their library needs. It is necessary to study the library automation package in detail with applications to different sections/activities/services of the library.

3. Strategic Management:

Strategic management is defined as the set of decisions and actions that result in the formulation and implementation of plans designed to achieve a library objectives. Managing Activities internal to the library in only part of the modern librarians, the modern librarians also must responds to the challenges posed by the library immediate and remote external environments. The immediate external environment includes competitors, suppliers, government agencies (state/central) and their ever more numerous regulations, and information seekers whose preferences often shift inexplicably, the remote external environment comprises economic and social conditions, management priorities, and technological developments all of which must be anticipated, monitored, assessed and incorporated in the librarians decision making⁷.

4. Digitization and Retrospective Conversion:

Now-a-days, many of the libraries are digitizing their printed collections. Digitization refers to the conversion of an item-be it printed text, manuscript, image, or sound, film and video recording-from one

format (usually print or analogue) into digital. The process basically involves taking a physical object and essentially making an 'electronic photograph' of it. An image of the physical object is captured-using a scanner or digital camera-and converted to digital format that can be stored electronically and accessed via a computer.⁸

It is necessary to have knowledge of conversion of documents to digital form, different types of scanners, cameras and processes of digitization for the library professionals.

5. Digital Libraries:

Wendy Lougee⁹ describes how libraries are changing, partly in response to new technologies and partly in anticipation of new opportunities for leadership that technology provides. Rather than being defined by its collections or the services that support them.

Digital library is system providing a community of users with coherent access to a large, organized repository of information and knowledge. The digital library is not just one entity, but multiple sources seamlessly integrated. The digital libraries endow with a structural and planned entrance to information stuffing in a dispersed environment and assist users in searching evaluating and utilizing resources irrespective of their format. Improved information retrieval and enhanced document delivery capabilities are widely acclaimed strength of digital library in a networked environment through internet and internet in library and information center.¹⁰

The US Association of Research Libraries Identified Five Elements Common to All Definitions of Digital Libraries:

The digital library is not a single entity;
The digital library requires technology to link the resources;
Linkages between digital libraries and information services are transparent;
Universal access to digital library must be a goal;
Digital library collections are restricted to document surrogates but include digital artifacts that have no printed equivalent.¹¹

It is essential for the library professionals to know about the concept of digital libraries, their architecture, models, digital library software, e-publications, multimedia applications, multimedia packages, portals.

6. Information Systems and Networks:

Information systems and networks plying an important role in collection, storage, retrieval communication and sharing of information in a specialized subject discipline. It is essential to know about different information systems and networks for the library professionals, so as to collect the information requirements from the systems through networks and provide the same to the needy users.

7. Information Collection, Storage and Retrieval:

The information here refers to the digital information. It is necessity of every library professional to know about collection, storage retrieval, sharing and communication of information. For these purpose, various software formats such as HTML, PDF, XML, TEXT and Images formats are used. Similarly for accessing the digital documents there is necessary to know software such as Adobe Acrobat Reader, Real Page Plug in HTML, PDF, and Text formats etc.

8. Information Management and Control Techniques:

Today every organization is built and maintaining and managing their own information system for their information needs. Best¹² defined Information Management as the economic, efficient and effective co-ordination of the production, control, storage and retrieval and dissemination of information from external and internal sources, in order to improve the performance of the organization.

Information Systems are becoming of ever greater interest in progressive and dynamic organizations. The need to obtain access conveniently, quickly and economically makes it imperative to devise procedures for the creation, management and utilization of databases in organizations.

It is necessary to know various modern techniques in digital information management such as Meta data harvesting, Preservation and Conservation of the Meta data, Bar-Coding, Radio Frequency Identification Devices, Smart cards, etc. Smart Cards and RFID tags also help to control the information by enabling security.

9. Organizational Change and related Issues:

The organizational change transformed the libraries and digital libraries and there are four areas in which the library professionals should be exploring new developments and opportunities. 'New patterns of library service, organization and management are being required by a number of factors, including: the variety, cost and numbers of publications; the changing face and the need of the library's clientele; closer scrutiny of library budgets; growing expectations to do more with less; and increasing diversity in our clientele... In fact, technology has been one of the key factors influencing the pace of change, often driving change itself while making it possible to do more with less, allowing the distribution of value added services to the users'¹³.

10. Digital Rights Management:

For information management, there is a necessary to know about different information sources. i.e., printed copyright Acts of different computers. To retrieve, collect, disseminate, share and communicate the information, there is a need to know about of copyright issues pertaining to these materials. Hence education and Knowledge about Digital Rights and Intellectual Property Rights is essential for library professionals.

11. Virtual Technology and Artificial Intelligence:

The developments in Information and Communication Technology applications transformed the Libraries into Electronic Library, Digital Library, Hybrid Library and Virtual Library. Depending on the level of ICT applications in the libraries these libraries were classified. Virtual Reality technology transformed the libraries into Virtual Libraries.

Sangam and Kulkarni¹⁴ stated that the terms Virtual Library, Electronic Library and Digital Library are used synonymously. But there is difference between these terms as under:

Electronic Library is a library that has wide spread use of computers and such other activities as online databases and automated record keeping and computer based decision making. Digital Libraries are libraries in which all information exists in digital format. The information itself may however reside on different storage media such as electronic memory magnetic or optical disks, but user will not necessarily perceive any difference between them. Virtual Libraries use the technologies of Virtual Reality (VR). This is known as tele-presence in its simplest form. In a Virtual environment, one would be able to browse without having to physically go to it. Using Virtual Reality equipment and facilities one would be able to enter virtual library, browse around its rooms and shelves, use index or catalogue, select a book (by pointing to it and touching it).

Virtual Reality is an oxymoron, where Virtual means the existing or resulting in essence or effect though not in actual fact, form or name and Reality means the quality or state being actual or true. i.e. both these are self-contradictory words. The term Virtual Reality refers to an environment or object simulated by computer hardware and software in such a way that the viewer experience the environment or object as though it were real. The virtual library exists independently of the amount or nature of the electronic information to which it provides access. There are no limits on the size, content or value of data in a virtual library. Its definition is shaped by individual or organizational need¹⁵.

Virtual library may be defined as "a library with little or no physical collection of books, periodicals, reading space or support staff, but one that disseminates selective information directly to distributed library, usually electronically"¹⁶. Virtual library is a library without walls, spread across the globe from where one is able to retrieve the whole world of information through a properly networked workstation. Here the user gets impression as if he is moving through a large library though library does not physically exist, yet the user is able to retrieve the information needed by him¹⁷.

According to Patterson¹⁸, Artificial Intelligence is a "branch of computer science with the study and creation of computer systems that exhibits some form of intelligence, system that can learn new concepts and tasks, systems that reasons and draw useful conclusions about the world around us, systems that can understand a natural language or perceive, comprehend a visual scene and systems that perform other types of facts that require human types of intelligence".

Artificial Intelligence techniques are attempting to create machines that can replace manual as well as mental power and intelligence of human beings. Artificial Intelligence has more success at intellectual tasks such as multilingual computing, game playing and theorem proving. The Artificial techniques included Natural Language Processing, Multi-lingual computing, Intelligent Retrieval from Databases, theorem proving, Expert Systems, Automatic Programming and Robotics. Now, many libraries in India have applied techniques of Artificial Intelligence such as Expert Systems, intelligent retrieval from databases etc to their libraries. Hence, there is need for the library professionals to know and learn the skills pertaining to Virtual Technology and Artificial Intelligence techniques.

12. ELECTRONIC SERVICES:

The Information and Communication Technologies (ICT) transformed and developed the library services. These applications have changed application, functions and services of the libraries as under:

Automation and Mechanization of every function of the libraries;
 Compact Storage of Information, easy accessibility and faster communication;
 Subject databases particularly from academic institutions: Increasing number of institutions, especially academic and research institutes are making databases in their specialized subject made available;
 Automated Library Catalogue: Increasing numbers of libraries are making their Catalogue electronically available over the Internet which may extend the use of library resources.
 List Serves and discussion groups on a wide variety of topics. Participants have the opportunity to exchange and share current information;
 Document Delivery Services may be provided electronically using Internet Technology;
 Electronic Mails allow users to send messages or files to each other;
 Commercial Information databases are available on the internet include, DIALOG, Lexis-Nexis, Dow Jones News/Retrieval and many others;
 Telnet or remote login-allowing users to log into remote sites;
 File Transfer Protocol (FTP) and Hyper Text Transfer Protocol (HTTP) allowing users to access and retrieve files at remote sites;
 Gopher- a text only, non-graphic method to receive internet documents, which have largely been inter-generated into the World Wide Web;
 The World Wide Web allows users to jump from one resource to another in easier way, without going through gopher style menus;
 Video-conferencing and Teleconferencing involves linking more than two users, so that participants from different places over the world can see each other and view presentations;
 The Consortia like UGC-Infonet provides the information through access to a large number of journals to academic libraries all over the India. Such services are enabled to economize the services from single platform, to avoid duplication of subscription, to strengthen the services of networking and encouraging research and development by providing information in easy accessible way.

Now it is necessary for the library professionals to know the different services which have to be provided in the digital era. For this purpose, there is need for the training and developmental activities in these areas.

CONCLUSION:

To develop and organize the library resources in the revolutionized change in the ICT era, there is a need of human resource development activities. Now, the different applications of ICT in libraries redefined the library services and transformed the library services. Hence, the users of the library are also expecting more mechanized services from the libraries. Further, there is also indication of competition and co-operation among the various libraries for providing advanced services so as to keep the present users with expectation of the new users. For this purpose, every library must have to develop and improve their functions and services according to the technological development. To achieve this, there is need for training of the library professionals to the key areas stated above.

REFERENCES:

1. Caidi, Nadia: Building "civilisational competence": a new role for libraries?. Journal of Documentation. Vol. 62. No. 2. 2006. P. 194-212.

2. Gaddagimath, R B and others: Transformation of Role of Librarian in the Web Environment. Dynamic Interoperable Web Based Information Systems. Proceedings of 4th International Convention CALIBER 2006, 2-4, February 2006, Gulbarga : University, 2-4, February 2006. p.710-715.
3. Lachance, Janice R: Learning, Community give library and Information Associations a bright future. Library Management. Vol.27. No.1/2, 2006. p. 6-13.
4. Ramzan, Muhammad: Effects of IT utilization and knowledge on librarians' IT attitudes. The Electronic Library. Vol. 22. No. 5. 2004. P. 440-447.
5. Doney, Elizabeth: Developing Opinions: the attitudes of ILS staff to continuing professional development. Library Management. Vol. 19. No.8. 1998. P.486-491.
6. Deegan, M and Tanner, S: Digital Librarians' new roles for the information Age. In Digital Futures: Strategies for the Information Age. London: Library Association, 2001. P.9.
7. Pearce II, John A and Robinson, Richard B: Strategic Management: Formulation, Implementation and Control. 9th Ed. New York: McGrawHill, 2005. P.18.
8. Parekh, Harsha and Bharati Sen: Introduction to digitization: A Librarian's Guide. Mumbai: SHPT School of library science, SNDT women's University, 2001. p.8.
9. Conway, Paul: Deep Infrastructure supports Digital Library Services. <http://syllabus.com/article.asp?id=9362> accessed on 25th December 2012.
10. Mishra, Rabin Narayan: Changing Scenerio of Library Services in Digital Arena. Responding to Users Need in Changing Information Landscapes: So Journal of Libraries from Palm-Leaf to Palm-Top. 49TH ILA All India Library Conference Jhansi: Bundelkhand University, 29 Dec 2003-01 Jan 2004.
11. Sinha, Manojkumar and others: Digital Library Initiatives in India for Open Access: An Overview. Dynamic Interoperable Web Based Information Systems. 4th International Convention CALIBER-2006, Gulbarga: Gulbarga University, 2-4 Feb 2006. P. 150.
12. Best, D.P. (1988), "The future of information management", International Journal of Information Management, Vol. 8 No.1, pp.13-24.
13. Rowley, Gordon and Black, William K: Consequences of Change: the evolution of collection development. Collection Building. Vol. 15. No. 2. 1996. P. 22-30.
14. Sangam, SL and Kulkarni, SR: Concept of Virtual Library. Papers of 47th All India Library Conference ILA Seminar. Warangal, 20-23 December 2001. P. 681-695.
15. Pacifici, Sabrina I: Virtual Library: Myth or Reality. <http://www.llrx.com/features/virtual.htm> accessed on 07th November 2012.
16. Powell, Alan: Management Models and Measurements in the Virtual Library. Special Library. Vol. 185. No. 4. Fall 1994. P. 260.
17. Murthy, SS: Library and Information Service in the Electronic Information era. Journal of Library and Information Science. Vol. No. 1. January 1999. P. 68-69.
18. Patterson, DW: Introduction to Artificial Intelligence and Expert Systems. Delhi: Prentice Hall of India, 1992. P.5.