

INFORMATION COMMUNICATION TECHNOLOGY IN ACADEMIC LIBRARIES

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Abstract: - *The paper observes the state of ICT in Academic and Special Libraries. With the breakthrough in digital technology and computerization of information services libraries have undergone lot of changes in terms of collection, organization and services. In spite of these changes most of the academic libraries still have traditional manual working system for library and information services. ICT in library services can definitely reduce the workload pressure to a great extent. Library staffs are protected from work stress and fatigue and ensuing health hazards. However, history of ICT, ICT and library services, role of computers in information units and prospects of ICT in academic libraries are discussed in the paper.*

Introduction

The libraries like IIT libraries which are highly automated and also totally manual libraries which are really restricting the speed of academic and research in the country.

Present generation is experiencing a Science and Technology Era. Due to advancement of Science and Technology, particularly Information Technology everything has gone a sea of change. Library is not an exception and has been drastically changed in terms of collection, organization and services. Simultaneously, user's demands, attitudes and information seeking behaviour have dynamically changed. They want relevant, authentic information at the click of a key within a single place at their hand. This

concept has posed challenges for library professionals for quick delivery of library and information services.

Modern society is characterized by an increasing need for specialized institutions in various fields of activity for the performance of their day to day functions as well as research and consultancy work. These institutions require speedy access to qualitative published information. Exposure, methods of storage and dissemination of information are changing fast, no library can store all published information and can provide efficient services with its old manual operations. Therefore, "ICT" is important and necessary to handle the vast amount of information and for

providing faster, accurate, precise, efficient and effective information and services as well.

In this era of computerization, traditional manual working system still exists in Indian libraries; Automation to a greater extent can reduce pressure of library workload and also shelters from work stress and fatigue. It not only offers efficient services and opens a new era in bibliographical control but provides access to required database in the country and abroad as well. Computerized library service is likely to be beset with technological, economic and attitudinal problems peculiar to most developing countries.

History of ICT :-

ICT is an acronym that stands for Information and Communications Technology. IT professional's responsibilities are data management, networking, database, software design, computer hardware, management and administration of whole system. IT (Information Technology) is combined word of computer and communications or "InfoTech". Information Technology illustrates any technology which helps to manufacture, manipulate, accumulate, communicate or broadcast information. Importantly, it is also concerned with the way these different uses can work with each other. For example, personal computers, digital television, email, robots.

The term "information technology" evolved in the 1970s. Its basic concept, however, can be traced to the World War II alliance of the military and industry in the development of electronics,

computers, and information theory. After the 1940s, the military remained the major source of research and development funding for the expansion of automation to replace manpower with machine power. Since the 1950s, four generations of computers have evolved. Each generation reflected a change to hardware of decreased size but increased capabilities to control computer operations. The first generation used vacuum tubes, the second used transistors, the third used integrated circuits, and the fourth used integrated circuits on a single computer chip. Advances in artificial intelligence that will minimize the need for complex programming characterize the fifth generation of computers, still in the experimental stage.

The first commercial computer was the UNIVAC I, developed by John Eckert and John W. Maichly in 1951. It was used by the Census Bureau to predict the outcome of the 1952 presidential election. For the next twenty-five years, mainframe computers were used in large corporations to do calculations and manipulate large amounts of information stored in databases. Supercomputers were used in science and engineering, for designing aircraft and nuclear reactors, and for predicting worldwide weather patterns. Minicomputers came on to the scene in the early 1980s in small businesses, manufacturing plants, and factories.

In 1975, the Massachusetts Institute of Technology developed microcomputers. In 1976, Tandy Corporation's first Radio Shack

microcomputer followed; the Apple microcomputer was introduced in 1977. The market for microcomputers increased dramatically when IBM introduced the first personal computer in the fall of 1981. Because of dramatic improvements in computer components and manufacturing, personal computers today do more than the largest computers of the mid-1960s at about a thousandth of the cost.

ICT and Library Services :-

The following library services can be rendered using information and communication technology (ICT) On-Line Public Access Catalogue (OPAC): ICT has revolutionized the practice of cataloguing in the library. Using OPAC users can see the holdings of the library collections. It reduces the cost of maintaining a library catalogue. It also eliminates pen and paperwork, along with it helps in the preparation of union-catalogue. OPAC is the easiest way to get the information of collection, weekly new arrivals and other recent addition to the libraries.

Reference/ ILL Service:- By using computer and internet technology, the reference service has become very simple. Various types of information resources like the encyclopedia, directories, dictionaries, databases, online library catalogues, maps, biographies, patents and online information resources are available on the internet which can be used to provide required information to the users. In the reference section, queries are

answered through the telephone. For ready reference service, library staff uses Internet and E-mail facility. The computer has provided a great promptness to reference section. The role of technology in reference services are as follows: • Library staffs fulfill the demands of the users through various electronic resources like database, library catalogue database, directories etc. • In reference service, services are also provided to the users regarding information available on the internet after getting delivered through the computer.

Reprographic Service:- Reprographic technology is used for the reproduction of the documents. Using technology, the photocopy and the reproduction of the documents has become very easy and accessible. In this technology, printed documents are converted into digital form, then photocopy is prepared

Selective Dissemination of Information (SDI) Services:- Hensley (1963) stated "SDI involves the use of the computer to select from a flow of new documents, those of interest to each of a number of users. This process may be thought of as the inverse of information retrieval. In information retrieval, a user precipitates a search of a file of documents. In SDI a document precipitates the search of a standing file of user interests". Through the computer, the profile and document of user are prepared and aligned. As per the need of the users or area of interest, various

online databases, electronic resources and other materials are viewed and selected;

finally required information is sent to library users.

Document Delivery Service:- It is difficult for the library to procure every type of resources published across the globe because of financial constraints

Bibliographic Service: Through the computer, bibliographic services have become convenient. Nowadays, libraries and publishers are providing bibliographic service to the library users. Bibliographic software such as End Note, Ref Works, Zotero and Mendely are very much helpful to compile the list of references for the research work.

Translation Service: Mechanical translation is carried out with the help of ICT. For this purpose, various online tools like Babble fish translator and Google translator can be used to make translation from foreign languages to English and vice-versa.

Database Search Guide:- At present, databases have become the central focus for exploration of varieties of the research problem. Researchers are using databases hugely for their research work. Searching and retrieving the online resources or data from the database has become very easy in the ICT environment.

Role of Computers in Information Units

The role of computers in information units has continued to develop at an ever increasing pace. Today, every information service relies directly or indirectly on the use of computers, and in the near future, integrated networks for computerized information are likely to become very common. Information systems often handle very large quantities of data for relatively simple and repetitive processing and, like other enterprises, must also deal with administrative tasks. For this type of work the computer is the most appropriate tool. The first computer applications were focused on information retrieval and the production of bibliographic bulletins and indexes, but their range has gradually extended to all technical and administrative operations and user services. It is now common to find fully or partially computerized systems for acquisition, cataloguing, indexing, file construction, information retrieval, documentary products (bulletins, indexes. SDI, etc.), loan operations, data retrieval and exploitation, and routine control and administrative operations. Computer systems, however, have to be designed, maintained, fed with information and used by people. In other words, they do not simply replace human beings but instead call for a high level of qualification and at least as much, though admittedly different, work for advantage to be taken of their enormous processing capacity. Another important point is that computer technology is making such rapid progress that price wise and in conditions of use it is now within the range of most organization-and

of individuals too-throughout the world. Having long ceased to be a luxury for powerful organizations, the computer is becoming a familiar object, and an understanding of how it works is nearly as important as knowing one's own language.

Prospects of ICT in Academic Libraries :-

Having talked about the problems and areas of applications let us talk about future prospects. I can definitely say that the things are changing for the good. Now University authorities are realizing that there is no way to escape library automation.

Information Communication Technology in academic libraries require vast knowledge in the areas of computer engineering, computer networking and software installation and training. By implications, these specialists are to be brought together and coordinated to ensure success at the end. One other big challenge is in the area of continue sustaining bandwidth subscription. It is a fact that Internet facilities can only be sustained through subscription to the appropriate band width size that could power the number of computers and the level of Internet usage. Therefore, the institution must be prepared to fund the facilities regardless of the revenue generation from there ICT facility is now a back bone for any meaningful research in academic environment.

Full scale library ICT cover the entire university would raise the intellectual development of staff and students and the university/Institution image in the academic world will be enhanced. The staff

will be able to support their teaching and research drive without their physical presence in the library.

Conclusion:-

The challenges in higher education are enormous in the 21st century. The traditional methods of teaching and learning are giving way to new order which is highly dynamic and likely to remain so in future ICT is a modern concept and information provider tool.

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