

Impact of Information and Communication Technology on Library Services

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Abstract

Digital libraries play a vital role in providing more appropriate information in less time with ease of access by being nearer to user's minds, and paving a bridge between the sea of information and users needs. The paper highlights the changing dimensions of library services due to the impact of ICT. The various aspects of digital library, its purpose and advantages are talked about. The most essential features such as infrastructure, staff support and budgetary aspects are also discussed.

1. Introduction

ICT has changed the traditional methods of library activities and services providing new dimensions for teaching and learning in higher educational institutions. With the help of ICT tools, it is possible to store, retrieve, disseminate and organize information and create databases. Information is now available both electronically and in print, making it accessible to users according to their demands.

2. ICT and Libraries

In the past libraries were considered as storehouses of knowledge. A Librarian's role was only to preserve the documents, whereas now libraries have a completely new look with the information technology era. The activities which were carried out manually in the libraries were time consuming and stressful. With the help of Information and Communication Technology library activities have taken a new turn with being carried out in minimum time, effort and more effectively.

3. Academic Libraries in ICT Era

School, College and University Libraries fall under this category the academic category. College and university libraries are not the exempt from the impact of Information and Communication Technology. University Grant Commission has started allotting funds to Universities and Colleges to install computers and library software. INFLIBNET is cooperating with universities and colleges and providing financial assistance, training, orientation, workshops and publications. This has made the college and university libraries equipped with ICT provide better library services to the students, teachers, and research scholars.

4. Changing Dimensions of Library Services

The application of ICT in the library has changed the new forms of library services to fulfill the demand of library users.

5. Digital Library

A digital library is a collection of digital documents or objects. In the digital library documents are stored, transferred via digital devices and networks. The digital library services are provided digitally over computer networks.

According to the Berkeley Digital Library Project, "the digital library is a collection of distributed information sources; producers of information make it available and consumers find it through the help of automated agents"

5.1 Purpose of digital library

The purpose of digital library is to facilitate access to electronic information, print material, and library services to ensure that the information needs of user community are met, regardless of their location. It enables libraries to deliver valuable information that already exists within library walls electronically to patrons outside those walls, to create new digital resources locally, and to integrate local digital resources with remote ones. The number of people accessing digital collections through the World Wide Web also shows explosive rates of growth. Finally, internationalization is making a "global information environment" a reality.

The purpose of a digital library is to provide:

Interaction with potential information users
Interaction with information resources
Mediation between information resources and users to add value during the information transfer process.

5.2 Advantage of digital library

Digital libraries bring significant benefits to the users through following features.

- I. Improved Access
- ii. Wider Access
- ii. Improved information sharing
- iv. Improved Preservation
- v. Space Advantages
- vi. Information retrieval.

5.3 Services of digital library : Some of the important services of the digital library are -

- i. Search Services
- ii. Reference and Question-answering Services
- iii. Filtering and Selective Dissemination of Information
- iv. Instructional Services

5.4 Requirement

For the successful implementation of digital library several resources are required:

- i. **Financial and management support** : Financial allocation is the main concern to any organization, the annual increases to the budget is essential to allow the planned growth of digital libraries.
- ii. **Acquisition of digital document** :The range and availability of digital content are expanding rapidly. Scholarly materials such as indexing and abstracting services are being linked to full text electronic journals, multimedia presentations, and digital copies of publications originally published in print are example of the types of resources which are readily available. In order for the digital library to become a reality, more electronic content is required, including full text resources from a variety of publishers covering a range of disciplines.
- iii. **Infrastructure support** : The Infrastructure constitutes provision of necessary hardware, software and communication channels.
- i. **Staff** :Staff should be trained properly to handle technical works. They should know about electronic publishing and electronic information technology to provide service to the users.
- ii. **Personnel** :Personnel are most important digital library's resources not only for creation and set up for digital library but also for its operation, maintenance and provision of services.
- iii. **Equipment Needed**:For the creation of digital library the following equipments are required:
 - i. **Server computer** : The server computer holds the digital library collection, runs the digital library software which provides the searching and processing applications. The server also handles the communication with the user over the network. The server needs to be reasonably powerful (typically measured in terms of processor speed, for example mega or giga hertz), have adequate main memory (RAM), have large amounts of hard disk storage and has good communication capability (network card and bandwidth).
 - ii. **Desktop computers** : Desktop computers will be required for staff handling various tasks related to the digital library collection. These include: Staff managing the digital library content (scanning, conversion, editing, cataloguing and quality checking); Programmers and Staff who administer and maintain the digital library server and website. Also consider desktop computer requirements for users, if public access is provided locally.
 - iii. **Capture devices** : These are digitization equipments needed for converting source material in physical/ analogue formats to digital formats. Digitization equipments include scanners for scanning print publications, video and audio capture cards for capture/conversion of digital video and audio files, and digital cameras for capture/production of video clips/still images. Requirements will be minimal if capture and conversion is largely outsourced.
 - iv. **Networking and location of the digital library server computer** : There are several

options to providing online access to your digital library collection via the Internet. If the organization already has the requisite network infrastructure (intranet and Internet connectivity) then they can take help from the network administrator to connect and configure the digital library collection server to be accessible over the Internet. If the digital library collection is relatively small and does not require a dedicated server, then it can be hosted on the library web server, if one exists, or on the institution web server, if this is permitted. If there is no network infrastructure in the organization and if the required resources are available, then a dedicated Internet connection to an ISP (Internet Service Provider) can be obtained- but this could prove to be expensive as this would require additional equipments like router, DNS and Proxy servers. Maintaining this infrastructure will require more resources. Another option is to locate the digital library server computer in a data centre or ISP, on rental. Or else another feasible option would be to hire storage space on a server computer owned by the ISP and host the digital library collection on this server. Several issues however need to be considered. Content updating may not be easy. Maintenance and troubleshooting the server or the collection may also be difficult. If computer storage is hired to host the collection, ISP may not provide the support for the digital library software that is need.

- v. **Other equipment** : Other equipments needed include CD Writer and label printing systems, laser printers, tape or CD-ROM backup systems, UPS support, local and offsite storage backup systems.

6. Learning Outcomes

- After going through this paper the desired capabilities will be
- i. Understand the meaning of Digital Library.
 - ii. Understanding the Services provided by Digital Libraries.
 - iii. Understand the Infrastructure required for creating Digital Libraries.

7. References

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