

# Application and Uses of Information Communication Technology (ICT) in Academic Libraries: An Overview

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**Abstract** Information is considered as fifth need of human in ranking. In this paper the study has been done a research for application of Information communication Technology (ICT) and uses of ICT tools in Academic Libraries, to find out the application of ICT skills in LIS Professionals and to modernize the Libraries, the study has been done in Engineering Colleges and Arts & Science Colleges, and How ICT tools are applied to provide innovative services to the users. Conclusion and recommendation is stated below.

**Keywords** Application of ICT, Academic Libraries, ICT Tools

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## 1. Introduction

Information is the key factor in any kind of Research and development. The information itself and way it is accessed have undergone changes owing to the development in information and communication technology. According to information it is considered as a fifth need of human after ranking air, water, food and shelter. Information technology entered into Libraries, especially Academic Libraries and research libraries during 1960s. Quick and easy access to every required information is a supreme importance especially in Academic Libraries. Information processing, storage, communication, dissemination of information automation etc, further origin of Internet and development of World Wide Web, revolutionized the information communication technology. Based on this the application of ICT in libraries become essential to provide the facilities of the user community.

## 2. Definition

Ebijuwa and ToAnyakoha (2005)[1,2] define ICT as “tools and as well as means used for collection, capture, process, storage, transmission and dissemination of information”. The American Library Association (1983)

defines IT as “the application of computers and other technologies to the acquisition, organization, storage, retrieval and dissemination of information. The computers used to process and store data, while telecommunications technology provides information communication tools. Which make it possible for users to access databases and link them other computer networks at different locations. “IT and ICT (Information and Communication Technologies) are used somewhat interchangeably.

## 3. Need for the Study

The study reveals the drawbacks of the information access through print media. It elucidates the wide growing gap in volume of consumption between print media and electronic media by contemporary professional and Non professional students of colleges studying in Chennai city. The study is confined to the impact of ICT information on the Access pattern of professional and Non professional students of colleges studying in Chennai city. The main aim of the study is to measure the respondents' ICT information needs and their information seeking behavior in collecting ICT resources. Further their attitudes towards ICT information also measured. It also proves how far ICT information make impact on the access pattern among the users of both professional and non professional and the extent of ICT information being increasingly used rather than print resources. In the Information Communication technological world, knowing the respondents' changing attitude towards ICT information is very essential. In this context the study is needed in the present scenario.

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## 4. Objectives of the Study

- ❖ To find out the applications of ICT skills in LIS professionals to modernize the libraries.
- ❖ To understand how ICT tools can be applied to provide, Innovative services to the users.
- ❖ To analyze the barriers in collection of e-resources in academic libraries.
- ❖ To know the practical opinion of the users and libraries about the application of ICT.
- ❖ To understand how conventional library and Information Services, can be delivered more efficiently and effectively by using ICT.
- ❖ To familiarize yourself with new skills of ICT, particularly with Web based environment.
- ❖ To find out the participation of LIS professionals in various ICT related activities.

## 5. Applications of ICT in Academic Libraries

Now a days there are several information communication technology for various housekeeping, management and administrative functions of the library, different electronic and digital media, computer aided electronic equipments, networks and internet has provided significant role in retrieval and dissemination of information and playing an vital role for modernization of libraries main of them are:

### 5.1. Library Automation

Library Automation is the concept of reducing the human intervention in all the library services so that any user can receive the desired information with the maximum comfort and at the lowest cost. Major areas of the automation can be classified into two-organization of all library database and all housekeeping operations of library.

### 5.2. Library Networking

Library networking means a group of Libraries and Information Centers are interconnected for some common pattern or design for information exchange and communication with a view to improve efficiency.

### 5.3. Library Management

Library Management includes the following activities which will certainly be geared up by the use of these fast ICT developments, Classification, Cataloging, Indexing, Database creation, Database Indexing.

### 5.4. Digital Library

A digital library is an assembled of digital computing, storage and communication machinery together with the content and software needed to reproduce, emulate and extend the services provided by conventional libraries based on paper and other material means of collecting, cataloging,

finding and disseminating information. A full service digital library must accomplish all essential services of traditional libraries and also exploit the well-known advantage of digital storage, searching and communication. It provides access to part of or all its collection, such as plain texts, images, graphics, audio and video materials and other library items that have been electronically converted, via the internet and www.

### 5.5. Technical Communication

Technical Communication consisting of technical writing, editing, publishing, DTP systems etc.[3]

## 6. ICT-Based User Services

Some library users are adopting electronic habits, making increasing use of the new ICT including computers, the Internet, the Web, Intranet, Extranet and other technologies. As a result, library users are placing new demands on their libraries. They require access to the latest information, updated information resources and access to ICT facilities that they could use in their work.

Use of ICT in libraries enhances users satisfaction. It provides numerous benefits to library users. Some of the benefits are:

- ❖ Provide speedy and easy access to information
- ❖ Provides remote access to users
- ❖ Provides round the clock access to users
- ❖ Provides access to unlimited information from different sources
- ❖ Provides information flexibility to be used by any individual according to his/her requirements
- ❖ Provides increased flexibility
- ❖ Facilitates the reformatting and combining of data from different sources

Libraries are also providing various ICT-based services to their user, including the following

- ❖ Provision of Web access to OPACs
- ❖ Electronic document delivery
- ❖ Networked information resources
- ❖ Delivery of information to user desktops
- ❖ Online instructions
- ❖ Online readers advisory services

## 7. Impact of ICT on Libraries and Librarians

Computer has brought in a new impact to the library and information usage. In libraries, information technology has assisted library professionals to provide value added quality information service and give more remote access to the inter-nationally available information resources. Today's highly sophisticated information technology to facilitate the storage of huge amounts of data or information in a very compact space. Information technologies promise fast

retrieval of stored information and revolutionize our concept of the functions of a traditional library and a modern information center. Recently technological developments have dramatically changed the mode of library operations and services

Modern ICT is impacting on various aspects of libraries and the information profession. Advancements in ICT and the wide spread use of ICT is resulting in digital information sources and digital media replacing and becoming the dominant form of information storage and retrieval. ICT also survives and makes true rules of Library Science 'Every reader his/her book/information', 'Save the time of the reader', 'Library is a growing organism'. ICT with its tremendous information sources, rapid transmission speed and easy access ensures the satisfaction of the user with complex demand, break down the distance barrier and shortened the time required and ensure the right information to the right reader at the right time. It also increases and solves the library's demand of collection development. It is really an excellent tool for the Library information centers.

## 8. Components of ICT in Libraries

Chisenga quoted that ICT came about as a result of the digital convergence of computer technologies, telecommunication technologies and other media communication technologies.

Patil, Kumbarand and Krishananda categorized the components of Information Technology (IT), which frequently used in Library and Information center are as follows:

- ❖ Computer Technology
- ❖ Communication Technology
- ❖ Reprographic, micrographic and printing technology.

Rehman stated that ICT is the fusion of two important technologies: electronic and communications. We can sum up of the components of ICT on the basis of the concept of Chisenga, Patil, Kumbarand and Rahuman and Krishnanda.

## 9. Methodology

The study is based on the Primary data collected from the selected Academic Libraries.

A Structured questionnaire was designed based on ICT applications the questionnaire was divided into seven major applications of ICT Tools. E-group, e-mail, fax, Internet, Intranet, Mobile Phone, Video Conference, 125 questionnaire was distributed among various Academic Libraries out of which 110 were respondent (88%).

## 10. Review of Literature

Walmiki and Ramakrishnegowda (2009)[4] studies ICT infrastructure in university libraries if Karnataka and found

that most of the libraries were U "lack sufficient hardware, software facilities and do not have adequate internet nodes and bandwidth". The campus LANs were not fully extended to exploit the benefits of digital information environment. Ahmad and Fatima (2009)[5] found that researchers use a variety of ICT products and services for research and further remarked that ICT products help "to find information, access information more easily". It was recommended that training be organized to increase the use of ICT-based products and services. Shafi-Ullah and Roberts (2010)[6] found that ICT infrastructure and recommended allocating funds for ICT infrastructure. K.S Sivakumaren, Dr V Geetha and B. Jeyaprakash (2011)[7] stated that The University Libraries must increase the numbers of computer available to enable the users to maximize the usage of ICT-based resources and services and it is found that no library was implemented digitization software. It is very useful to digitize rare collections such as older and out of print editions. Mhammed Ijas Mairaj, Widad Mustafa El-Hadi (2012)[8] found that Provision of hardware, standardized Library software, adequate financial resources, and proper training facilities for Medical libraries will help to strengthen ICT applications in Medical libraries of Lahore.

## 11. Types of Data Used

Both primary and secondary data were used for the present research. Primary data have been collected from the users of colleges and university library(Academic Libraries). The Secondary data were collected from the web sites and Prospectus of institutions, Research journals, Magazines, Reports and conference proceedings.

## 12. Data Analysis

The study was carried out in ten Academic Libraries the information to these respondents is shown in table 1.

**Table 1.** Information about Respondents

S. No.	Description	Total	Percentage
1	Engineering College	6	60%
2	Arts Colleges	4	40%
Total			100%

Seven major applications of ICT Tools, such as e-group, e-mail, fax, Internet, Intranet, Mobile Phone, Video Conference. Were identified for this study and same is shown in table 2.

The table and the figure shows all the respondent uses all the facilities but the highest is mobile phone with (90%) and e-mail (89.09), Intranet (86.36) and Internet with (81.81). The use of Mobile Phones is high due to its fast and easy way of communication.

**Table 2.** ICT tools for Academic Libraries

Sl. No.	Name of ICT Tool	No. of	Respondent in %	Rank
1	e-Group	86	78.18	5
2	e-Mail	98	89.09	2
3	Fax	40	36.36	6
4	Internet	90	81.81	4
5	Intranet	95	86.36	3
6	Mobile Phone	99	90.00	1
7	Video Conference	30	27.27	7

**Table 3.** Use of ICT Tools by Gender Wise

ICT Media	Male	Female	Total	Percentage (%)
e-Group	30	28	58	52.72
e-Mail	50	55	105	95.45
Fax	20	20	40	36.36
Internet	40	45	85	77.27
Intranet	14	16	30	27.27
Mobile Phone	53	55	108	98.18
Video Conference	15	13	28	25.45

Table 3 is a Cross tabulation of ICT Tools and gender and shows that female professionals are using mobile phones more than other media and female respondent uses live video Conference.

### 13. Conclusions and Recommendations

The application of ICT tools are increasing in Academic Libraries especially in Engineering College and Arts & Science colleges due to the development of technologies.

❖ According to the respondent ranking Mobile phone is in 1<sup>st</sup> position due to easy access at any time anywhere.

❖ There is a Lack of LAN facility in most of the Academic Libraries so the usage of Internet is less which was shown in the table 3.

❖ The Academic Libraries must increase the Video Conferencing facilities which enables the users to maximize the usage of ICT based activities and services.

❖ It has been observed that very few libraries are offering Video conferences it is due to fewer consortiums. If consortium with other libraries will increase the usage of Video conferencing will also increase.

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