USE OF INFORMATION TECHNOLOGY IN LIBRARY OF UTTAR PRADESH: AN ANALYTICAL STUDY

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Abstract

The objective of this paper is to know the rate and purpose of the use of e-resource by the scientists at pharmacopoeia libraries in India. Among other things, this study examined the preferences of the scientists toward printed books and journals, electronic information resources, and pattern of using e-resources. The world is undergoing a transition from print to a digital era. It is essential for any kind of library to take part in this changing environment which is equipped with strength of IT (Information Technology). Libraries are being encouraged to invest in their IT infrastructure so that they can participate in knowledge based online world for knowledge sharing and development. Advances in information technology have brought many changes in libraries. Information and communication technology (ICT) has provided libraries with new opportunities to improve their resources and services.

Key words : e-journals, Information Technology

Introduction

In the present information age, it is simply impossible to keep track with development activities in the absence of a dependable information system in the country. A workable information system is an essential pre-requisite for research and development in every field of study. Scientists and researchers need to know about the information tools and resources available for better utilization of information. Failure to provide accurate and adequate information to the scientists, researchers, planners and administrators may lead to faulty results which will, in turn, hinder national development. The solution lies in identifying the available information resources and ensuring quick dissemination of information to the concerned users through various channels of communication. In this regard libraries and information centers can be considered crucial media, which can play a dynamic role in the universal diffusion and advancement of knowledge and can provide right information to the right user at the right time.

IT has come to be a great blessing for the science and brought great revolutions in this world. Now a day IT application can be seen in almost each and every field of human life whether it is education, medical, banking, railway, communication, business, etc. Libraries have also been adopting various Information Technology applications for their better management and optimum use.

It is a comparatively new discipline that has developed from computer science. IT covers the more humanistic perspective of Computer Science whilst also incorporating some of the more technical aspects. It is a term that encompasses all forms (Business data, voice conversations, still images, motion picture, multimedia presentation and other forms including those not yet

conceived).

Information Technology can be defined as a collection of technologies that enable data and knowledge to be stored and exchanged, accessed, displayed and communicated and in some cases, synthesized and created. It incorporates variety of disciplines, Including Telecommunications, information systems, Software Development, Hypermedia and Multimedia publications, database Management System, Graphical and Visual Application and computer Modeling. It is ubiquitous through telecommunication networks, the Internet, mainframe computer, PC's palm device, smart appliances that talk to us etc.

In simple words, IT can be defined as the combination of computer and communication technology to process date into information. It's a convenient term for including both communication and computer technology in the same work. It is the technology that is driving what has often been called "the information revolution".

Background of IT application in libraries

In the early 1970's libraries began to adopt software applications to allow them to perform specified function more efficiently. These applications were frequently developed by the University or research institutions with some cooperation from commercial software and hardware firms in time. These system became more widespread and the benefit more evident. The next phase combined several library activates into one integrated system allowing libraries to perform almost all their functions online. This produced the turnkey systems commonly known as integrated Library system that subsequently dominated library management and service functions. Data entered once could be used in multiple ways, which increased the accuracy. These integrated software applications were introduced to the market place using minicomputers capable of processing of Machine readable Cataloguing (MARC) records. A standard record format in 1980s era of one way networking over communications networks were launched in the libraries. At this stage hardware operating systems and application software were proprietary and permitted find customization or sharing between libraries and their users. The transition from large scale computing technologies to microcomputers was well under way by the mid 1980s. This trend required re-education of library and systems IT staff, which added significant cost to libraries. Changes followed different library application providers, more powerful technologies and software application and networking configuration that were no longer developed in-house. Library and information carters of all type began utilizing new application systems to automate resource sharing. Union catalogs and Inter-Library Loan modules were developed to allowing cooperating institutions to combine their catalogues and allow patrons or one library to request and borrow materials from linked Institutions. These technologies fostered the growth of library consortia and the extension of offering beyond the organizational boundaries of individual libraries. It became key for Universities, research organizations and information centers to provide their campuses with communication technologies that wired libraries, classroom, laboratories, and dormitories. Networking of such Institutions was prerequisite for accessing local internet and external Internet database resources. Internets provided campus connectivity using TCP/TP communications standards. The

1980s saw a greater use of campus communication Infrastructures and then to deliver it from libraries and journal publishers became increasingly available to digital format - at first on CD-ROM, later via online services. Library services are transitioning from local traditional collections to global resources provided on demand via the most advanced networking technologies.

Need of IT application in libraries

IT has provided new media, new modes of storing and communicating information. The application of IT for various library operations and services has been increasingly steadily. Following are some factors, which have contributed for application of IT in libraries and information centers.

- **Information Explosion:** As a result of R&D, a huge amount of information is generated day today. And it is very problematic to manage such information using traditional system; information Technology cased these problems for betterment of libraries and information centers.

- **Rapid growth of information:** In this fast moving world information is being produced rapidly and within a small period it becomes outdated. Information technology helps to provide the latest and updated in right time.

- **Electronic publishing:** Large number of database, journals, periodical and other information resources are being published in the electronic form. In order to manage this type of information resources, libraries and information centers need computer and electro mechanical devices.

- **Quality Information Services:** To satisfy the users with quality of information services, libraries are providing them various kinds of computerized information services like SDI, CAS, Indexing, abstracting.

- **Time:** Researchers and Scientists are unable to spare much time for searching and filtering the information of their use due to their deep engagement in research activities. Therefore, librarians are using computerized storage and retrieval system and other services in IT environment so that users could get themselves updated with relevant information at their end without wasting the time.

- **Space/Storage:** Even for largest library of the world, it is impossible to manage the space to collect all material published in this world. But using computers storage devices has reduced the physical size of information resources. Online electronic publishing and resource sharing has also solved space problem to some extent.

- **Manpower:** Now a days job of libraries and information centers are not restricted up to acquiring and distribution of the books or information but becoming much more complex and difficult, if performed manually. Using computerized tools and techniques number of manpower may be reduced while efficiency can be increased.

- **Budget:** Cost of the information resources are hiking very much and budget of libraries are not adequate to acquire all relevant published information. Libraries are moving towards co-operative acquisition and resource sharing using networking and communication technology.

Information Technology in Libraries

- Library Automation software: Libraries themselves and commercial vendors are developing this type of software as per their requirement. Traditional integrated Library System (ILS) commonly includes the modules that perform acquisition, cataloguing, circulation, retrieval, serial control, etc. There have been lots of tremendous improvements on the capability of these library software's.

- Web Based OPAC: The OPAC has become more accessible to library patrons through web interface allowing them to access the library catalogue from any location. The most advanced OPACS today provide enriched content related to library holdings such as depictions of cover art tables of content summaries and reviews etc.

- Resource Sharing and Networked Database: Acquisition of all resources used for library patrons is not easy for a single library due to increasing cost and number of information resources. In order to promote optimum use of resources libraries and information centers are promoting the co-operative acquisition and resource sharing using networking software.

- Internet: Internet is the result of advancements in the field of information communication and networking technology. It is a big source of various kinds of information and supporting the libraries and information centers for getting electronically published information so as to provide better information services and quality information to their users.

- Broadcast Searching: Due to growth of vast amount of information resources particularly in the electronic from, it became a problem to identify the best resource to search the desired information. New broadcast search tools climate is the need for the user to make repetitive searches in different databases and present a single user interface for all searches. With a single query, library patron can search many different resources simultaneously.

- Digital Library: Keeping in view of the problem in managing traditional library with issue return of books from circulation counter and other services, mostly organization are developing digital library so that library patrons can access the information at their desktop. It has increased the quality of information saving the time of user. Digital library is not like a traditional library where information collected, processed and distributed to the users physical, but it is a network of multimedia systems and group of distributed repositories that users see as a single repository in digital form.

- Reference linking: reference linking software provide a means of intelligently navigating from one piece of information to other related information of interest. This saves the user time and allows discovery of more information related to a user interest.

- Portal of library and information centers: library are now developing there personal portal as a single interface consolidating almost all services, searches of bibliographical data bases, other information resources, online electronic data bases etc. There portals provide with the facility of authentication to validate the access permissions, ability to save searches results, ability to alert the user about new books or articles of their interest, ability to view the account information.

- IT based Reference Services: To save the precious time of the researches and scientists

involved in R&D work, librarians are providing them information services on their desktop. Use of E-mail, chatting helped the library patrons for putting the queries before the library staff and getting quick reply for their queries just sitting on their terminals in campus or outside.

- In this study an attempt has been made to examine various aspects and analyze the opinion and perceptions of library staff and users on IT applications in libraries and information centers in the Meerut and Ghaziabad. The study also attempts to discuss the present status of IT resource availability, changing pattern in providing library services and changing approaches of users of libraries and information centers in Ghaziabad and Meerut. It also covers the previous situation, present condition and future prospects of library services and functions of these libraries.

The findings and recommendations of this study should hopefully lead to a clarification of many problems in the adoption of IT tools and applications planning and policy making regarding overall management of library. It is assumed that it would help the librarians, policy makers and concerned authority to develop and implement suitable systems with effective use of IT and ICT based tools and applications for better services to the users and monitoring library resources for greater accessibility. However, all the possible investigations have been made to collect data related to the study in order to give a complete opinion. If the work is found useful to the planners, librarians and information specialists, the efforts undertaken would be successful.

Research Methodology

Research is a systematic study which comprises of several steps to reach at conclusion of a specific problem. Conducting a scientific study includes identifying the problem, framing objectives of the study, framing valid research hypothesis, collecting data, analyzing data using appropriate methods and finding the results and suggest the solutions to the problem. These steps make a study a scientific study. Kothari (2003) has described the research as a scientific investigation. Before starting the research, it is important to finalize all the tools and techniques involved in the various steps of the study. It will lead to smooth and hassle free research. All the steps, research methods, and tools & techniques used in the present study are elaborated in this chapter.

Present study is on the application of Information Technology in special libraries of Ghaziabad and Meerut. The study is focused to understand the IT application in the selected libraries and to understand the opinion and perception of library users and Library staff on application of Information Technology and other associated aspects. In view of the requirement of the study and the objectives framed for the study, researcher opted descriptive analytical method for the present study. Descriptive analytical method is concerned with existing conditions or relationships, opinions, ongoing processes, obvious effects, or developing trends (Best & Kahn, 2006). Best suited descriptive analytical method for this study was the survey method. Researcher has used several methods for conducting the survey. For smooth conductance of survey of the selected libraries, questionnaire was used to collect the data related to opinion and perceptions of the library staff as well as library users. To understand the views of the senior

level authorities and management of library, interview method was used. The number of libraries selected for this study was very small, hence, observation methods was used to assess the status of Information Technology in the selected libraries. To gather some additional information and to cross check the information provided by the respondents, some records of the libraries were also verified which provide solid support for data collection. In this study, there was a need to describe the various aspects of the Information Technology in Libraries, as such the descriptive research method was most suitable for this study.

Present study has adopted Descriptive-analytical method i.e. survey approach. Questionnaire method was chosen as the tool for survey. For conducting this study, two sets of the structured questionnaires were prepared and distributed for collecting the data. Before distributing the questionnaires, a pilot study was carried out to test the validity of the questionnaire. On the bases of the result of this study, some modification and correction were made in the questionnaires. Hence, both the questionnaires were duly pre-tested and finally structured keeping in view of the objectives of the study. For collecting the data, twenty (20) libraries were selected out of those nine (09) libraries were from Ghaziabad and eleven (11) libraries were from Meerut. One set was for library staff and another was for library users including students/scholars and faculty/staff. The first questionnaire (For Library staff) was distributed among seventy six (76) respondents including library professionals, IT professionals and non-professionals. Library staff in the level of peon and attendant was excluded. Out of the seventy six, only sixty two (62) respondents has returned filled in questionnaires. Another set of questionnaire (for library users) were distributed to 1750 library users, out of those 1114 users have responded the same with the response rate of 64%. Observation of the libraries were also carried out o understand various aspects related to IT applications in libraries. Collected data were tabulated and coded using MS excel. Further, the data were analyzed using SPSS and MS excel software. Most the figures and charts were prepared using MS Excel for interpretation of data. Statistical tools like frequency analysis, percentage, mean, ranking etc. were used for interpretation of data. MS Word was used for typing text to write the work.

Research Design

Before conducting any study, a preparation of research design is very important step. It works as map to reach the destination. This is the outlines of the study conducted which briefly describe research method of the study. It will also through the light on statement of problem, objectives, research hypothesis, scope and limitations of the research, definition of the major terms of the title of study, need & significance of the study etc.

Need and the significance of the study

IT trends are changing very fast and new developments in IT are taking place very rapidly. Due to enormous advantages of IT tools and equipments, it becomes indispensable to adopt in core activities of library and information centers. There are several aspects associated with the modernizing the libraries with the help of IT applications which need to be addressed while managing the information technology in libraries. Libraries and information centers are facing many challenging in applications of Information Technology. IT skills of library staff, their attitude and knowledge towards IT applications play an important role for development of IT

based library systems. Ultimate objective, of all initiatives taken for development of libraries is to provide best of the user oriented services with the increased level of satisfaction. Now a day, common man deals with the IT based system in day to day life, which increases his exposure of IT trends. Library users are also very competent to use computers, Internet and other IT related tools and equipment. Internet has also evolved as a major source of information of their need. As such, the expectation of the users from libraries has been increasing day by day for readymade, exhaustive, pin pointed and relevant information without wastage of time. To meet the demands for individual and collective information of the user community, the improvement of the IT infrastructure and professional performance of library staff is very crucial.

There are several studies conducted on the above issues related to IT applications in libraries in different areas which are also described in the literature review. Present study is focused the various issues related to applications of IT application in selected libraries of Ghaziabad and Meerut, because no specific study is conducted addressing the issues under the present study in this region. Understanding the issues under this study will help the authorities and decision makers to develop the ICT infrastructure, new user oriented services and to fill the gap by increasing the satisfaction level of library users.

Objectives of the study

Keeping that view in mind the researcher stated following objectives of the Study:

- To understand the conditions of Information Technology based infrastructure of the special libraries of Ghaziabad and Meerut.
- To suggest the way of modernizing the libraries with the help of application of Information Technology
- To understand the satisfaction level of the library users with the ICT based library services, resources and infrastructural facilities.
- To suggest the way of increasing the satisfaction level of the library users.
- To identify the problems being faced by the library users and suggest the methods to encounter these problems
- To understand the opinion and perception of library users on the various aspects of IT applications in the Special libraries of Ghaziabad & Meerut.
- To assess ICT skills of the library staff of the special libraries of Ghaziabad and Meerut.
- Formulate the guidelines for improving ICT skills of library staff
- To understand the opinion and perception of library staff on application of Information Technology in the special libraries of Ghaziabad and Meerut.
- To identify the problems being faced by the library staff in application of Information technology in Special Libraries of Ghaziabad and Meerut.
- To formulate the solutions to the problems being faced by the library staff in application of Information Technology

Research Hypotheses

The following hypotheses have been formulated for the present study:

- Library users are satisfied with the ICT based services, resources and facilities
- Library users have adequate ICT skills to access the ICT based services, resources and facilities
- Library staffs are adequately trained in managing ICT based library

Population of the study

When any research is conducted, it is on any specified population. Population means each and every entity which is to be covered under the study or the result of the research is meant for those. Population of a study may be the persons, organizations, objects, events, etc. In the present study, there are three categories of population i.e. Special libraries, their users and their library staff. Total populations of special libraries are 20, out of which 11 special libraries are of Meerut and 9 libraries are of Ghaziabad.

CONCLUSION

Shift from print to digital information has a high impact on all components of a library, especially the users, the services and the staff. Though information is considered as an important resource, the use of ICT tools to collect and disseminate information seems to be in a slow pace in majority of the libraries. This may be due to various factors like insufficient funds, inadequate trained staff, lack of IT infrastructure, administrative concerns, etc. Use of ICT relating to library systems and services has come into force at the present information age in most of the libraries in our country. Information technology has been adopted by in libraries of India in most of the sectors. The aims of the present study will be examine various applications of Information technology in the libraries and information centers from library staff perspectives. It will also help to understand the skills of library staff on these IT applications and their perception to evaluate the various aspects of these applications. Efforts were also made to understand the satisfaction level of library users and their skills to use the IT based services and facilities of libraries, and other aspects from users' point of view.

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