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## ABBREVIATIONS

<b>Abbreviation</b>	<b>Term</b>
A2A	Access to Archives
AAOU	Asian Association of Open Universities
ACU	Association of Commonwealth Universities
AI	Artificial Intelligence
AICTE	All India Council Technical Education
AIU	Association of Indian Universities
ALA	American Library Association
AMC	Annual Maintenance Contract
BARC	Bhabha Atomic Research Centre
CAS	Current Awareness Services
CCF	Common Communication Format
CDP	Collection Development Policy
CD-ROM	Compact Disk
CIFE	Central Institute of Fisheries Education
CME	College of Military Engineering
COL	Commonwealth of Learning
CONPOLIS	Committee on National policy on LIS
CSU	Colorado State University
DBSKKV	Dr Balasaheb Sawant Kokan Krishi Vidyapeeth
DIAT	Defence Institute of Armament Technology
DL	Digital Library
E- Journal	Electronic Journals
E-Books	Electronic Books
EDDS	Electronic Document Delivery Services
E-Mail	Electronic Mail

<b>Abbreviation</b>	<b>Term</b>
GIPE	Gokhale Institute of Politics and Economics
GOI	Government of India
ICT	Information Communication Technology
IGIDR	Indira Gandhi Institute of Development Research
IGNOU	Indira Gandhi National Open University
IIPS	International Institute of Population Science
IISERS	Indian Institute of Science Education & Research
ILL	Inter Library Loan
IM	Instant Messaging
INFLIBNET	Information of Library Network
ISO	International standard Organization
LAN	Local Area Network
LIS	Library & Information Science
LUPC	London Universities Purchasing Consortium
MAFSU	Maharashtra Animal Fishery science University
MBPTF	Metadata Best Practice Task Force
MGM	Mahatma Gandhi Mission
MHRD	Ministry of Human Resource Development
MOU	Memorandum of Understanding
MUHS	Maharashtra University of Health Science
NAAC	National Assessment and Accreditation Council
NKC	National Knowledge Commission
NMIMS	Narsee Monjee Institute of Management studies
NOFN	National Optical Fiber Network
OCLC	Online Computer Library Centre
OPAC	Online Public Access Catalogue
PDKU	Panjabrao Deshmukh Krishi University

<b>Abbreviation</b>	<b>Term</b>
QR	Quick Reference
R & D	Research and Development
RDM	Research Data Management
RFID	Radio Frequency Identification
RPDDS	Reference Point Document Delivery Service
RSS	<i>Really Simple Syndication</i>
S & T	Science & Technology
SDI	Selective Dissemination Information
SNDT	Smt. Nathibai Damodhar Thakracy University
SST	Self Service Technology
TOC	Table of Contents Services
UGC	University Grants Commission
Wi-Fi	Wireless Fidelity
WIT	Waterford Library Institute
YCMOU	Yashwantrao Chavan Maharashtra Open University

# STATUS OF LIBRARY SERVICES PROVIDED BY UNIVERSITY LIBRARIES USING DIFFERENT CURRENT TECHNOLOGIES: AN ANALYTICAL STUDY

Mr. Suryawanshi Sachin Shahaji

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## Abstract

The Function of Libraries are changing due to application of Information and Communication technology (ICT) especially in collection developments organization and services provided to users Today the information arena is witnessing an exciting plethora of technological advances, which has been quite responsible for immeasurable enhancement in human knowledge. Information is now seen as a valuable resource within an organization, and if properly managed organized and used it can stimulate for innovation, speed, product development, raises levels of productivity, ensure consistent standards of quality and through all these means, raises its relative level of competitiveness. Approaching the end of twentieth century, societies all over the world are changing and the information now plays an increasingly important part in economical, social, cultural and political life by creating a goal of achieving an information conscious society. In the era of information explosion the user felt the need of better information services to make them aware of information available in their area.

Hence libraries have to concentrate on library and information services to the users using ICT Higher Education sector has witnessed a growth and increase in the number of Universities visualized since independence. The number of Universities has been increased 34 times and witnessed growth from 20 in 1950 to 601 in 2012. Among 601 Universities functional at different levels 45 are Central Universities, 318 State universities, 185 state private universities, 129 are Deemed to be Universities. There are 51 Institutes of national importance established under Acts of Parliament under MHRD out of 51 institutes of national respect (Indian Institute of Technology's - 16, National Institutes of India – 30 and *Indian Institute of Science Education and Research (IISERs)* – 5) are established.

The higher education system in India recognizes its key responsibility in training teachers, in establishing links with teacher training institutions at other levels and in training teacher trainers. Efforts are being made to bring in teachers from the commercial and social sectors to facilitate interchange and build links with the education system. Higher education



has evolved in divergent and distinct streams with each stream monitored by an apex body. The system of higher education in India has undergone a remarkable transition from an elite system to mass system. The numbers of higher learning institutions who have played active role in the social transformation has increased rapidly after independence and the structure of governance and role of universities have also significantly changed.

It is needles to mention that for any research and developmental activities in the institutions of higher learning, current information is the basic resource for carrying out extensive research leading to better standard of living and prosperous development of the country and it's the library which acts as a heart of any institution whether it may be the university or colleges or research institute or research and development Laboratories or Corporate sector unit. Library and Information Centers now plays significant role in meeting the information needs of the user community.

Thus, academic libraries no longer restrict themselves to print services such as collection development, cataloguing and classification, circulation and reference services, current awareness, selective dissemination, and other bibliographic services, but have extended their efforts to interdisciplinary concepts of Information technological gadgets, management and psychology (Jange, 2015). This has led the investigator to study the extent of Library services provided by the University Libraries using different current technologies to their clientele with a view to understand the prospects, lacunae and thereby suggest suitable model for improving the existing library system in extending technology based information services in a University environment. As the University libraries are spread over India, the study has been confined to Maharashtra state only. This study becomes more relevant in the electronic era demanding to conduct research in order to explore the techno-based information services extended to the users in a university setup.

#### **IMPORTANCE OF THE SUBJECT OF THIS RESEARCH:**

Rapid advancement and diffusion of information and communication technology have altered the process of production, raised productivity and improved standard of living of society. It is needless to mention that advances in the information technology will be global, irreversible and affect every walk of our life. Prime Minister Narendra Modi's ambitious Digital India initiative aims to transform the country into a digital empowered society and knowledge economy. Idukki in Kerala is the first district in the country which has been connected to the National Optical Fiber Network (NOFN) under the Digital India initiative

and plans to connect 600 million rural citizens, the optical fiber network will be the largest of its kind. Today the government of India has spent millions of amount for modernizing the education system especially through universities, colleges and other institutions of higher learning.

Information technology has profound impact on all the sectors and subjects and Library and Information Science is not an exception. Information technology is now so wide spread that life without it can't be imagined. It is a boon to human kind. Information Technology must be fully harnessed and optimally utilized for the growth and development. In this direction, for the modernization of libraries in India, Information and Library Network Centre (INFLIBNET) – an Inter University Program of University Grants Commission was setup for linking libraries across the country and evolve a national network interconnecting various libraries and information centres in the country and to improve capability in information handling and service by providing technical, financial and manpower support to all the colleges and university libraries in the country.

In the process of institutional accreditation by *National Assessment and Accreditation Council* (NAAC), libraries have a crucial role as the services of the libraries have been expanding significantly and use and application of various technological gadgets in the library is desirable for providing innovative services to the users. More-over the users prefer to use electronic media than printed information sources and thus, the study to assess the use of technology based services in an academic and research environment occupies high significance and relevance today.

The rationale of adopting information technological gadgets in the library is to improve the efficiency of library services and satisfy the changing needs of users. Existing literature reveals that no studies is reported pertaining to use of different current technologies in University Libraries rendering various services in Maharashtra state. Hence the study is undertaken which is pertinent in the present Internet era, which will reveal the existing status of usage of various technologies in library services and identify the limitations with an objective to provide effective and efficient services to the users.

## **THE OBJECTIVE OF THE RESEARCH**

The main objectives of the study are

- To understand profile of universities in India and Maharashtra as special area

- To understand the trends and status of university libraries in Maharashtra
- To study the status of library automation and networking facilities in University libraries in Maharashtra,
- To study the information services offered to the users for university libraries
- To understand the implications of information and communication technology in university libraries.
- To suggest suitable measures for providing enhanced library services using different technologies and best practices

### **RESEARCH HYPOTHESES**

The hypothesis of the study is “There is need to enhance library services to users using ICT in Information explosion era”

### **RESEARCH METHODOLOGY**

Selection of research problem method depends on problem undertaken by researcher considering the element of study descriptive. Research method is used in which survey of universities form Maharashtra state is conducted. There are 42 Universities in Maharashtra and to collect the data understand status of services provide university libraries.

The research tool questionnaire is used and investigator has also conducted Interviews of same librarians to supplement questionnaire. The researcher used mainly descriptive method and sampling analysis method

### **THE RESEARCH THESIS**

Chapter I- Introduction - deals with Introduction introduce the concept and background of the research work, need of the study, objectives, methodology, hypothesis of the study and scope and limitations.

Chapter II – Review of Literature- reviews existing literature based on primary and secondary sources under four sub-headings i.e. Library services, Academic Libraries (University Libraries), Different existing technologies and upcoming technologies and Best Practices in academic libraries.

Chapter III -Status of University Libraries in Education system in Maharashtra -describes importance of academic libraries and library services providing the status of university education and library system in Maharashtra.

Chapter IV- Information Communication Technology (ICT) Based Library services- discusses on Current Trends in Information technologies in Libraries providing a glimpse of Innovative Services, Practices, Discovery Tools, Chatbot, RFID, 3M Security, Help Desks and other innovative technologies.

Chapter V – Best Practices in University Library- report's summary of findings, suggestions, future scope of research and conclusion.

Chapter VI-Data Analysis and Interpretation- deals with data analysis and interpretations of survey of library services from University Libraries in Maharashtra covering analysis on Profile of Universities, Library Collections, Budget, IT Infrastructure, Library Automation and Networking, services offered and ICT Based Library services, Implication of IT on Libraries and Best Practices in University Libraries.

Chapter VII – Findings, Suggestions and Conclusion report's summary of findings, suggestions, future scope of research and conclusion.

Bibliography, Questionnaire and List of Universities in Maharashtra are appended.

#### **FINDINGS:**

In this research researcher visit 36 libraries out of 42. As per the analysis of data the summary of finds are as follows:

- Mumbai University library in the oldest university library establishment in 1857 and then followed by Pune University (1949), Dr.BabasahebAmbedkarMarathwada University (1958) and Shivaji University (1962).
- Book collection is dominated by university of Mumbai (751837) followed by SavitribaiPhule Pune University (4426275), RashtrasantTukadojiMaharaj Nagpur University (398397) and Dr. BabashebAmbedkarMarthwad University (368347).
- Annual Budget when compared in all eighteen state university libraries in Maharashtra, the annual budget of SavitribaiPhule Pune University is the highest budget (7 Crore) and BabashebAmbekdar Technological University library is (Rs-1.36 Lakhs) and it is followed by DrPanjabraoDeshmukhKrishiVidyapeeth (1.25 lakhs),YashwantraoChavan Maharashtra Open University (Rs.1.11 lakhs) and Swami Ramanad Teeth Marathwada University (Rs.1.6 lakhs ) during 2013-14. When compared to annual budget of state

universities in 2011-12 to that of 2013-14, there is an increase in the library budget and minimum budget of Shivaji University is Rs.40 lakhs.

- Majority of the university libraries have fully automated its library activities and services using library software (58.%, N=21). However the remaining 15 Libraries have carried out partial automation (41.7%).
- 33 Universities have a campus wide area network (91.7%) and there is not much difference between state university and deemed university in campus wide area network.
- Home lending services (100%), Reading room services (100%) reference services (94.7%) and current awareness services (91.7%) are the popular services offered by the university libraries in Maharashtra state.
- 69.4% of university libraries are not extending remote access facility (N=25) which is desired from the perspective of users.
- Only 8 universities libraries (22.2%) are offering mobile services applications.
- Barcode is essentials for library automation and 91.7% of university libraries (N=33) are using barcode technology.
- Best practices adopted by the university libraries are inclusion of sufficient information about the library in the university prospects (97.2%) computerization of library using open source software (94.4%), Arranging information literacy program (91.7%), Organizing competitions annually (88.9%), career/ employment information services (86.1%), Suggestion box and timely response (86.1%), collection development policy - print and E- Resources (69.4%) and signage system (66.7%).

## **SUGGESTION**

Researcher goes through the various aspects of suggestion but some are highlighted here

### **Remote Access Facilities:-**

Remote Access Facility facilitates remote access to web-based licensed content of e-resources from library to the remote users and available for servers platform using either Linux (x86 and x86\_64), Solaris (SPARC and x86) and Windows (2000, 2003, 2008, XP and XP Professional). The screenshots of accessing e-resources from remote location using EZproxy are shown. On the other hand, Virtual Private Network (VPN) utilizes public telecommunications networks to conduct private data communications wherein Internet as the public infrastructure. It follows a client and server approach and facilitates VPN clients

authenticate users, encrypt data, and manage sessions with VPN servers utilizing a technique called tunneling. In an academic university environment, Post Graduate centres located in different places may use VPN network for accessing e-resources from the main campus library. VPN clients and VPN servers are typically used to support remote access to an intranet, and help to join networks between two organizations, forming an extranet. This would definitely promote the use of e-journals and databases available under UGC Infonet consortia or INDEST or CeRA consortia.

### **Campus network**

Taking into consideration the existing situation of network facilities and consortium facilities available and accessed in the university Libraries in Maharashtra, the first and foremost requirement is to have sound Information and Communication Technology infrastructure among each and every university Library.

Figure 1:-is on page 183 no depicts the proposed campus network of university library which needs to be established in every college for networking and resource sharing and this in turn leads to national network. The campus network should be connected to campus clinical blocks, Departments, Digital Library, Administrative blocks and Hostels by drawing Fiber optics using dedicated leased line which may range from 1 GBPS and above. Each block should have a terminated data switch for extra connectivity of nodes and CAT 6 cable may be used within the unit/ block. This will ensure smooth flow of data, effective communication, database management, e-governance and thereby contribute for establishing national network.

### **Best practices**

Best practices means way of doing something that is usual or expected way in a particular organization or situation, guidelines for good practices and these best practices in libraries reflect quality of high standard and excellence. *National Assessment and Accreditation Council (NAAC)* concerns for quality of library practices have to be best practices in academic libraries and these are tested in the survey of university libraries in Maharashtra and it was found that libraries have been in the process of adopting best practices but still there is a long way to go. Hence some of the best practices to be adopted by university libraries in Maharashtra are suggested below.

- Library Website incorporating all the information and links as one stop point for information to the users.
- Best Book Review Contest
- Book Talk Programme
- Best User of the Library
- Useful websites for Educationists and Researchers:
- Book Fairs and Exhibitions:
- Gold Card Facility for students who have scored more than 75% in semester exams are eligible to borrow one more additional book along with their regular borrowings.
- Training programme as a regular feature
- Best practices already practiced needs to be documented containing
  - Goal of the practice:
  - The process:
  - Impact of the practice:
  - Resources required:

## **CONCLUSION**

Developmental aspects of library are a continuous process to keep in tune with current developments in Information and Communication Technology and also changing user's information behavior. Efforts have to be made to incorporate and strengthen the existing library facilities and services. Innovation and creativity are the continuous drives of life and owing to technological developments and its obsolescing in a short period; there is a need to upgrade and improve the value added services to the users. With positive approach, librarians must facilitate users with desired information on time and provide the best possible information services and thereby strive to build the image of librarianship.

## **FUTURE AREAS OF RESEARCH**

The results of this research work gives direction for future researchers to be undertaken on the following research topics in pursuance of doctorate study.

- InfoTech Based Services of R & D Institutions in Maharashtra
- Library Website Analysis of universities/ Research Institutes in Maharashtra
- Design and Development of Social Networking Applications in University Libraries

- Users preference towards Technology based services in academic and Research Institutions in Maharashtra
- Evaluation of National Consortia among Research and Development Institutions
- Comparative study of Open Source Softwares used by academic and Research Institutions in Maharashtra
- Analytical study on Design and Development of Institutional repositories in Maharashtra