

Effect of Internet on Libraries: A Study

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ABSTRACT

The paper emphasizes the effect of internet on different processes and services in the library. Today the internet has revolutionized the conventional library practices viz material collection, digital preparation, dissemination, reference service, sharing of resources, distribution of documents, etc. Internet has become a must for the libraries in the new knowledge explosion world. It allows us enter the era of electronic media. Internet has been a resource for professionals in the library & information sector.

1. Introduction

A network of networks is called as internet, it connects millions of computers all over the world the internet allows computers to trade information using telephone lines, fibre-optic cables and satellite links in different modes of connection. As the internet grows ever larger, the sheer quantity of textual information continually creases in fact the basic text, in ASCII, HTML and PDF probably makes up the volumes of information that would animation facilities, equal opportunity for access to information and sharing any number of users at any time. The internet is a wonderful resource; it contains plenty of web sites dedicated to enormous topics of different subject fields. Knowing the types of search tools available and mastering over search tips can make it more profitable.

Internet is not only a medium for digital communication but also the world's largest repository of information. However, in developing country like India, the internet infra-structure poses a serious challenge to growth of ICT enabled services. The large segment of user groups may still be deprived of personal access to internet facility. The library and information centres therefore, provide free or paid access to internet depending upon the availability of users who can be given time slots for use of internet facilities. A few internet enabled terminals are provided in the university libraries that can be used by the academic communities for access to e-resources and services.

Universal Resource Locator (URL) facilitates smile widow access to various web enabled library services with some links to catalogue and external free and subscribed resources may clued advance features like interactive helps and value added services such as subject gateways, self-help tools, frequently asked questions and information about the library such as timings, calendar, rules etc. can be hosted on the library web site. Apart from the automated library system, the conventional services are making use of potential of internet and computing power to provide new and innovative services.

2. Internet tools and services

Networked tools and services have proved to be an important feature in all walks of our lives. Users get access to a

wide variety of bibliographic, full-text and multimedia databases through the intranets, extranets and the internet. The information and communication technology is available in different access points i.e., Workplace, home, library and internet cafe's to facilitate online services as e-banking, e-governance, e-lemma, and e-entertainment the number and types of information sources and services accessible through the internet are ever increasing. Billions of documents including text, pictures, sound, and video are readily available for both scholarly and every day uses. Many advanced tools and techniques have to be used to find out, filter, organize and summarize electronic information services, they are Archie, emails, FTP, discussion group/List forum, FAQ, IRC, ITR, PING, Search Engle, Semantic web, Social network, Telnet, Blogs, Web sites, WWW etc. Archie.

It is a collection of resource archiving tools (Archie servers) that provides an electronic directory service for locating information in and internet environment. Archie was first deployed in 1991 and currently it is often integrated to Gopher or WWW clients and activated when the user accesses an Archie server. Originally, it was created for tracking the contents by anybody. Archie servers contemn directory listings of all files updated on a monthly basis through a process of polling file servers. Archie provides a user definable number of file hits, as well as file names, server names and directory paths to access each listed file Archie provides specific search strings as the only limitation.

Discussion Group

A discussion group is an online forum for individuals to discuss various topics among each other. People add their comments by posting a block of text to the group. Others can then comment and respond. In the early days of the internet, Usenet was the most popular type of discussion group, but now discussions are mostly taking place over the WWW using some special server software. The term discussion group encompasses web-based forums, bulletin boards, listservs, mailing lists, and newsgroups.

E-mail

E-mail is a store and forward method of composing, sending, storing, and receiving messages over electronic

communication systems. The term email applies to both internet e-mail system which is based on Simple Mail Transfer Protocol (SMTP) and the intranet systems allowing users within one organization.

File Transfer Protocol (FTP)

The FTP is one of the oldest applications tool proposed in the year 1971. FTP is designed to do exactly that, transfer of files between a server and a client; there are much software which has been used to transfer the files between server and clients.

FAQ are listed questions and answers that is supposed to be commonly asked in specific subject as well as general topic. The first FAQ developed over several pre-web years starting from 1982 when information storage was expensive.

Gopher

Gopher is a protocol system, which is an advance of the WWW, it allows server based text files to be hierarchically organised and easily viewed by end users, who accessed the server using Gopher applications on remote computers. Initially Gopher browsers could only display text based files, before that the Hyper Gopher which were able to handle simple graphic formats.

Internet Message Access Protocol (IMAP)

The IMAP is one of the most prevalent internet standard protocols for email retrieval, the Post Office Protocol (POP) virtually used in modem e-mail clients and servers. The IMAP is an application layer internet protocol that allows an e-mail client to access e-mail on a remote mail server. It supports both on-line and off-line modes of operation.

Internet Relay Chat (IRC)

IRC is one of the most popular and most interactive services on the internet. It is a live chat area of the internet in which real-time conversations among two or more people can take place via special software like Yahoo chat, MSN and ICQ etc. IRC was invented in 1988. Client software is now available for every computer platform that supports internet access.

Internet Talk Radio (ITR)

ITR is an audio broadcasting service transmitted via the internet. In late 1994, the internet multicasting service was set to launch RTFM; Google Talk is a freeware Microsoft Windows instant messaging and voice over internet protocol (VoIP) client application offered by Google Inc.

Listservs

It's an internet mailing list, launched in 1986 and referred to as Listservs, a collection of e-mail messages that addresses specific topic or interests. Messages are collected at a single site and then mass e-mailed to users who subscribe to the particular lists. Listservs was the first electronic mailing list software application, consisting of a set of email addresses for a group in which the sender can send one email and it will reach a variety of people on the web.

Packet Internet Groper (Ping)

Ping is an application that tests host of responses over a network connection. Ping uses the network layer to send

packets to a remote address. Which will identify the network connectivity problems or the host has problems.

Search Engines

Search engine is a program ('robot' or 'spider') that generates an indexes of the web pages. The name search engine is a fascinating term just as a car engine having many parts. The first element is often called the spider or the crawler, which visits web pages and reads the information which is found. Next comes the index part, which is referred as the catalogue, which contains a copy of every page on the web which the spider has found (Sullivan, 2007).

Types of search engines

There are five types of search engines

- Free-Text Search Engines: Simply search for any single word, a number of words or in some cases phrases e.g. Lycos, AltaVista, Hotfoot and Northern Light etc.
- Index or Directory based Search Engines: Index based search engines are less useful when require a broad subject or are unfamiliar with a subject and its technical jargon e.g. Google, AltaVista, Yahoo, Magellan and Excite etc.
- Multi or Meta-Search Engines: search engine of search engine and they are also called Meta Crawlers or multi search engines, it does not crawl the web compiling their own searchable databases. It can search some other search engines e.g. Dogpile Meta search engine can explore the information.
- Natural-Language Search Engines', it can be very useful to finding the information on a specific problem e.g. Askers and Albert etc.
- Resource or site specific Search Engines: This type of search engines are perhaps the largest but paradoxically the least used, probably as a result of their diversity in nature like Bible, Dictionary, Encyclopaedia etc.

Semantic Web

The Semantic Web is a mesh of information linked up with easily process able machines. The Semantic Web was thought up by Tim Berners-Lee an inventor of the WWW, Unified Resource Identifiers (URI), HTTP and HTML. However, Semantic Web technologies are still very much in their infancies and future of the project appears to be bright, there seems to be little consensus about the likely direction and characteristics of the early Semantic Web.

Telnet (Remote Login)

Telecommunication Network (Telnet) or remote login is a utility program and a standard internet protocol that allows to connect one to another computer through network. After providing a username and password that login the remote computer, by using commands it can be executed by the terminal emulation program. For this, one must have familiarity with UNIX operating system software.

Usenet/Newsgroups

Unix User Network (Usenet) is a world-wide distributed discussion system. It consists of a set of 'newsgroups' with

names that are classified hierarchically by subject. 'Articles' or 'messages' are posted to these newsgroups by people on computers with the appropriate software. The articles or messages are then broadcast to other interconnected computer systems via networks. Newsgroups are similar to listservs.

Web Blogs

A blog is a type or part of a website. Blogs are usually maintained by an individual with regular entries of comments, descriptions of events, material such as graphics or video with related to specific topic. Entries are commonly displayed in reverse-chronological order. Most of the blogs are interactive, allowing visitors to leave comments and even message each other via widgets on the blogs and the interactivity that distinguishes from other static websites.

Web Browser

Web Browsers is a software application that enables a user to display and interact with text, images, and other information typically located on a web pages. The text, images and other objects on web page can contain hyperlinks at the same or different websites. Web browsers allow user too quickly and easily access information provided on web pages at many websites by traversing these links. The most popular internet browsing tools are Opera, Internet Explorer, Mozilla Firefox, Google chrome, safari, etc.

Web Site

The entire collection of web pages and other information (such as images, sound, and video files, etc.) are made available through what appears to users as a single web server. It is a collection of files that are arranged on the WWW under a common address and allows retrieval via a browser a web page is a document that contains text and graphical information that can be accessed through the internet through a web browser. Usually, web pages are stored in the HTML format on web server.

World Wide Web

WWW or W3 or the web system of internet servers that support specially formatted documents on the web the document format is usually in HTML language that links to other texts, graphics, and audio and video files formats. The documents can be accessed over the internet using a web browser.

3. Effect of internet on university libraries

The ICT developments are having profound effect on library and information sources and services in university environment. This advancement and adoption of ICT in handling information in teaching and research have led to the emergence of library and information services and products that could hardly exist without the use of internet. The University librarians need to play a renewed role in the digital world. The most profound technological development is that the internet connection to modern libraries is an unbroken chain around the world may alter the fundamental concept of the libraries in the 21st century. In the internet environment librarians would discover that 'libraries without walls' can imply the e libraries with new walls-technologically bounded, legally restricted and administratively hamstrung. Sometimes, the

library and information science professionals may fear that libraries are really in trouble and danger when important higher education officials say 'internet has made libraries obsolete'. But the same is not true as reading is Culture. If we want to save this culture of ours we really need to strike a blow for reading and above all need to change the notion that internet is a substitute of the library (Rocha, 2004).

4. Effect of internet on resources, functions and services in library

The internet is playing an important role in discharging the functions of university libraries. It is changing the ways in which the librarians have to organise, manage and disseminate the right information at right time to the right users. Today the library and information services from membership registration to document delivery can be offered through the internet. The important library services that can be offered through the internet are as follows:

E-Journals

Libraries have been exploring easy way to cope with the problems of ever increasing prices and time span of the journals. E-journals support for full text searching and downloading of articles. Many publishers of electronic journals offer their journals through consortia of libraries at much lower rates Indian Digital Library of Engineering, Science and Technology (INDEST), and INFLIBNET are two such consortia operating in India. Major advantage of electronic journals is that they are constantly updated and easy to access but breaching of copyright law is very easy. File formats are available as bitmaps, PostScript, PDF, ASCII, SGML and HTML.

E-Books

E-Book has been described as a text analogous to a book that is in digital form to be displayed on a computer screen E-books can be read just like a paper book, using dedicated E-Book reader such as 'Gemstar' and talking books in MP3 format. E-book offer advantages like portability, 24 hours access, text search, annotation, linking, multimedia and self-publishing possibilities. The development of e-book is still in the infancy stage and issues like compatibility, e-book readers, availability and intellectual property rights are to be addressed before it can be implemented on large scale.

E-Theses and Dissertations (ETD)

ETD produced at universities is an important source of information and knowledge for further research. A large number of universities have converted their theses and dissertation collection into digital libraries and have made it available on internet for global access. A number of universities have also implemented ETD programmes, whereas the researchers submit the theses in electronic format. Some initiatives have taken place such as Networked Digital Library of Dissertation and Theses (NDLTD) and the Shod Ganga Reservoirs of Indian Theses.

Acquisition

Internet has made simple and speedy purchase of information sources like books, journals and other electronic publications. It support to the acquisition process by easing the burden for pre-order checking because the application of these

technologies provide automatic checking of duplicates, eliminating the filling of order slips, monitoring orders and taking follow-up action such as assume claims and cancellations, generating purchase orders, maintaining statistics, producing reports and vendor performance statistics.

Classification

The electronic documents can be supplied to the users on demand. The internet has replaced the traditional classification system of our libraries several libraries and information centres have been adopting the Cyber Dewey Decimal Classification as a way to **organize** and navigate the resources on web.

Cataloguing

Reducing the amount of original cataloguing as copy cataloguing can be obtained from an external MARC database by eliminating a large amount of repetitive and time consuming work, such as duplicating catalogue cards i.e. sorting, checking and filing of the cards, typing of added entries will be generated automatically. The machine-readable catalogue has made it easy to manipulate the OPAC the popular online catalogues are World Cat (OCLC), Indicate (INFLIBNET) etc.

Circulation

The circulation system has dramatically changed in all types of library and information centres by using internet applications. Its playing an important role in cancellation section by reducing the time for membership, charging, discharging, preparing reminds, statistics and reports etc. which can be made automatically.

Collection Development

The effect of internet on collection developments in modern library and information centres has rapidly changed. The advantages of acquiring the e-resources like e-journals, e-books and so on significantly influenced acquisition, organization and dissemination of information to the users. Moreover, the resource sharing and consortia system has advantages in terms of license, data process, cost and efficiency towards moving more acquisitions Storage and budgetary demands are pressing libraries to collect, digitise, store and preserve collectively. Moreover, the data available to the user are also enriched as the collection strengths of libraries in relation to other libraries become more explicit.

There are several forms and types of electronic resources which are available on the internet, some of the popular ones that are gaining ground are the electronic journals, standards, technical specifications, reports, patents, full text articles, trade reports and hosts of other document sources.

Digital Libraries

A digital library is a collection of digital objects that is stored and accessed electronically. The seamless extension of the library that provides scholars with access to information in any format that has been evaluated, organized, archived, and preserved. The purpose of digital library is to provide a central location for accessing information on a particular topic and have a user interface for easy use.

Library Services

Today, the users may have access to variety of textual

information resources. There are different lands of web based information **services** such as online databases access, Web OPAC, ILL, DDS and CAS etc. Many library and information centres have been providing digital reference **service** through collaborative mode. The provision of these **services** is not constrained by the traditional opening hours. It can be offered on a 24-hour, seven-days-a-week basis known as 24/7.

Reference Services

A synchronous tools and **services** such as e-mail, subject gateways, FAQs, and e-library and interactive tools like chat rooms, virtual reference desk, and ask a librarian have been replacing the traditional methods of postal services, telephone and in-person reference queries. The major advancement made by ICT is the reference **services** in university libraries through on-line retrieval. The national and motivational database can be searched exhaustively and subject bibliography or reference tool can be made available with the application of these technologies.

Inter Library Loan (ILL)

To facilitate resource sharing among academic libraries they have been using ILL. The traditional inter-library loan operations are quite time consuming and labour intensive. With the advent of new technology, the electronic documents and various inter-library management tools such as software like Angel and Avis have facilitated the libraries to share their resources effectively and efficiently among member institutions.

Electronic Document Delivery (EDD)

EDD refers to the ability to 'create, distribute and view documents without ever touching a piece of paper'. The creases difficulty in acquiring the core journals and books caused by price increases and to create more space in the library play a significant role for the acceptability of EDD services. Articles requested through Document Delivery can be made available over the web. As a result, the articles can be viewed from any computer connected to the internet Online database services such as STN provides link to document delivery services of their own or a third party. Some of the commercial document delivery services are Intent, Biomed Net, OCLC, Science Direct and J-gate.

Bulletin Board Service (BBS)

The bulletin board is an electronic communication forum that hosts the messages and articles connected to a common subject; it allows users to retrieve the messages several libraries using bulletin boards for their web-based library services, interactive interface and make suggestions for further activities and services of libraries Current Awareness Services (CAS).

Current Awareness Services has been important for keeping the user's up to date in the areas of interest. The CAS may be as simple as copy of table of contents or a bulletin contain bibliographic records, the articles selected from the current issues of journals and other materials are usually organized by subjects. Libraries now compile current awareness bulletins using predefined search strategy and running on the database either on off-line or online periodically and getting the desired output. Some publishers even offer free

email update of table of contents. The increasing availability of publisher and vendor supplied really simple syndication (RSS) feeds provides another option for current awareness services.

Table of Contents (TOC)

Table of contents services are designed to keep up-to-date with information about the latest journal publications and internet based resources. In an effort to reduce the paper consumption, save money and time the libraries have been changed to the 'Table of Contents Service' to the users.

Online Public Access Catalogue (OPAC)

OPAC or Web OPAC is an important online service of automated library systems. It allows users to search for the bibliographic records contained the library collections now a day, some OPAC also provide access to e-resources and databases.

Online Database Access

The large collection of machine-readable data has been maintained by commercial agencies and is accessed through the online. Many libraries are subscribed them for easy access and use of current information in the respective subject area. The information cannot be accessed when the system is in offline e.g. Eid Compendia, SciFinder Scholar, Web of Science and Current Contents etc.

Selective Dissemination of Information (SDI)

SDI is a concept that originates in the roots of computer science H T Lehn presented the idea of SDI based on merest expressed in user profile. Users may subscribe to new references, which are searched and sent every time that the database is updated. The concept of SDI has also been associated with information filtering mechanisms on the internet Libraries have been a focal pot for implementing SDI systems, which have been used to provide users with updates of bibliographic information from technical journals.

Subject Gateways

Preparing the subject guides or path finders has been an intellectual activity for reference librarians. Such guides are normally prepared in consultation with the subject experts or by a subject librarian, who picks up the sources after careful evaluation. One of the most useful ways to discover quality resources in a particular subject area is the use of subject-based internet gateways and directories. A subject gateway thus is a facility that allows easier access to web based resources in a defined subject area e.g. Pranks, EEVL, SOSIG, OMNI and ADAM etc.

Communication

The internet has become the primary mode of communication among the users in university environment which carries more information in quick, economical and efficient than the others types of communication systems and services throughout the world. The modern libraries can use this facility extensively to communicate with the publishers, book sellers, vendors and other library products and services with scholars, librarians and users across the globe.

5. Resource sharing and library networks

Resource sharing through formal and informal partnership among the institutions, it helps libraries to deliver wider range of services. Technological advancements have offered new dimensions to resource sharing with shift from bibliographic information to full text e-resources. Most of the electronic publishers allow meter library loan where a libraries subscribing to a specific electronic resource in full text can take a printout and send it to the requesting library. With the advent of internet, major university libraries are now available on online through internet, directly accessible from any part of the world Librarians can have access to the catalogue of various libraries attached to the universities and colleges in the world, accordingly to place a request for then-users. The creams cost of documents for many disciplines in recent years, the librarians and information professionals are seeking alternative means of providing access to e-resources.

Networking is one of the most effective ways of sharing the resources, which are always scarce to internet the information needs of the users. The growth of Indian Library networks may be traced to the efforts made during the last four decades. The 1958 scientific policy resolution enabled the apartment of several committees and commissions have been looking to specific issues and produced recommendations in the Sinha Committee, report (1959), the Ranganathan report (1965), the Peter Layer report and the Kamala report (1972) to the UGC respectively. In the year 1984, the working group on the planning commission recommended to the government of India the need for modernization of library services, which has been implemented during the seventh five year plan (1985-1990). The ninth five year plan (1997-2002) working on the major library networks and the databases produced by different library networks.

There are many library networks throughout India that has been providing the information services to the academic and research institutions based on their objectives and activities of the centres like INFLIBNET, DELNET, ADINET, MALIBNET, PUNENET, BONET, CALIBNET, MYLIBNET etc. since the study is focused on University libraries and INFLIBNET network if university libraries, an attempt has been made to expand in detail the scope and activities of INFLIBNET.

INFLIBNET

Information and Library Network is an autonomous inter university centre of the UGC initiated in 1991 at Ahmadabad. INFLIBNET is involved in creating infrastructure, modernizing university libraries for sharing information among academic, information centres and R & D institutions in India and connecting them through a nation-wide high speed data network using the state-of-art technologies. To promote scholarly communication among academicians and researchers through computerization and automation of libraries and information centres to support modern information service, creation and augmentation of databases to support academic and research work, establishment of a cooperative communication network for linking libraries to make optimum use of the resources available at the national level. However, the centre provides up-skilling of existing library staff through regular training programmes, summers, workshops and conventions.

UGC-Info net

Academic institutions are required to upgrade their communication and network infrastructure to tap the **maximum** benefits from web-based electronic information resources that proliferate the web space. Indian education system is one of the largest and oldest education systems in the world consisting of more than 431 universities and 20,677 affiliated colleges. The universities and colleges put together accounts for 116,12 lakhs students enrolled in these institutions and 5,05 lakhs teachers UGC-Info net is an ambitious programme of UGC to interlink all the universities in the country with state-of-art technology. The UGC-info net mainly provides internet bandwidth, a prerequisite for delivery of scholarly content subscribed through the UGC-info net digital library consortium

UGC-info net e-Jamal's consortium initiative was undertaken by the UGC to facilitate free access to scholarly journals and databases in all fields and disciplines by the research and academic community across the country.

In conclusion the ICT has radically changed the academic library and information centres. The higher education institutions have started subscribing the electronic resources to internet the user's requirements. The **aim is** to understand the usage of internet by the research scholars and their experience with technology, aptitude and anticipation about internet resources and its effect on university libraries. The internet tools and **services is** playing pivotal role in revolutionising and enhancing the way in which the human

communication around the globe is taken place. The internet is a network of networks linked with computers allowing the participants to share information through the web. The investigator is putting an effort to find out the essential components of internet based tools for information, interaction and communication among the academic community by the means of research and developmental activities in universities. The internet tools are broadly categorize on the basis of characteristics of existing tools and functionalities, which are needed in order to support a broad class of distributed applications over the internet.

6. Conclusion

The Internet has become a must for the libraries in the new era of information explosion. Internet usage now promotes the position of librarians that should be a major concern to the profession. The libraries' use of internet resources and facilities is improving library growth overall. Libraries use the internet mainly for purposes of collection, cataloguing, and search. Librarians can improve library users through the delivery of useful library keeping information through the internet. Finally, staff should be given basic training. To run the libraries smoothly libraries will take the lead in supplying the users with the best resources and making the internet an important part of the network of the library. And every and everyone will be connected to the internet.

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