

Internet: Importance and Usage for Library and Information Professionals

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Abstract

The paper focuses on the impact of Internet on various library processes, services and products. It also emphasises the challenging role of librarians and information professionals in the present Internet era. Today the Internet has revolutionised the traditional library activities viz document acquisition, technical processing, circulation, reference service, resource sharing, document delivery, etc. The paper also emphasises the crucial role of librarians and information professionals in designing and maintaining libraries' web page/website leading to increase in library efficiency.

1. INTRODUCTION

One of the most significant achievement in the information and communication sector is the introduction of advanced communication network i.e., the Internet, the technology connecting a computer with millions of computers in the network. The Internet today has become one of the most important mode of communication and its services are being exploited by people in every walk of life such as business, education, defence, medicine, etc. In the field of library and information science, the Internet has become one of the most popular and talked about subject. In fact the library profession is one that has been most intensely affected by the challenges of Internet and the World Wide Web (WWW). The shift from collection management to information management, from ownership to access, and the change in nature, boundaries and structure of information all call for a change in mind set of library professionals.

The library professionals need to position themselves as leaders not only in information field but also in the field of information technology. One can do it by information organisation and management on Internet and

by designing and maintaining library website. Libraries can also project their collections and activities on the site and supplement their services by exploiting the Internet. The scope is unlimited, all that is required is selective and imaginative applications to library activities.

Before we see the opportunities the Internet and the WWW offer to the library and information professionals, it is better to have brief about what Internet is.

2. WHAT IS INTERNET

The term Internet has been coined from a concept inter-networking that denotes interaction between networking of computers. It is an umbrella under which different networks, small and big, freely exchange information across the globe. Internet, thus, can broadly be defined as world wide network of computers communicating via an agreed upon protocol (rules for exchange of information). It provides access to the most diversified source of information hosted by individuals and various organisation world wide on a vast network of servers.¹

Internet gives on to the world web, the interconnections to thousands of servers

created by various organisations, commercial establishments, industrial units, academic establishments, various groups, individuals. The web pages loaded on various servers provide variety of information in the form of text, graphics, animation, multimedia, etc. either free of cost or for a modest fee.

The main characteristic of Internet and the WWW are:

- (a) Users across the world can connect or access information irrespective of time and space factor.
- (b) Point to point communication, rather than one to many broadcast communication.
- (c) Provides access to large number of databases.
- (d) The facility of hyper linking from one server to another by clicking on a highlighted word which enables the user to directly switch to another data source, on the other side of the world.
- (e) Instant and interactive community creation on a global base.

The Internet therefore, is a vast electronic library made up of millions of pages of information stored in hundreds of thousands of linked computers a the globe. The Web has brought to the desk top, not only metadata sources like bibliographic databases and table of contents, but also full text of journals, preprints, technical reports, patents, courseware, etc.

3. IMPORTANCE OF INTERNET TO LIBRARIES

Internet has become a part of library environment today. It has added a great value to the library and information services. According to Gryez, "with the expansion of Internet a new class of electronic document has emerged, it was at once promising and attractive for its obvious advantage of speed and transmissibility and profoundly elusive and confounding to the library community because of its intangibility and malleability. Within the last ten years, the Internet has become global and ubiquitous. It reaches in hundreds of countries of all continents and is featured daily in the business sections of all major news papers."²

Internet is playing an important role in transforming the library system and the way in which we view the library resources and the library services. With the help of web based library services in developed countries, users are attended round the clock. Internet provides links to various library sites, specializing in almost every topic and they can be accessed directly from any part of the world. As the libraries are going web based more and more libraries' are becoming accessible via libraries' web pages. With an Internet connection, a student in any university of India can browse through the documents in computers of US National libraries or else where in the globe. The Net therefore, provides instant access to billions of information sources which include books, reports, journals, video films, sound recording and wide variety of other sources. The library and information professionals have a vital role to play in organising the information and bridging the information gap. Internet has created some of the following new and different service operations:

- (a) By designing clearly organised, easily accessible and well published library web sites librarians can extend the traditional librarianship to the use of information technology and seize a leadership role in both fields.
- (b) The libraries can initiate Bulletin Board Service which gives complete information regarding services, products, and various events organised by them.
- (c) Ready reference service can be provided with greater speed and in much shorter time.
- (d) Books and journals can be ordered online, technical processing of the documents too can be done without much effort.
- (e) E-mail services can be used for delivering information to the users and communicating with the fellow information professionals.
- (f) E- SDI services can be used for delivering information to the users.
- (g) Access to various databases and OPAC of other libraries located in remote areas can be provided.

Internet has thus integrated nearly all library activities e-mail, discussion through listserves,

support reference service through search of remote databases, exploiting the catalogue of other institutions, participation in inter-library loan (ILL), ordering books and journals, inter-library loan establishing home page, etc.

Under these circumstances resource sharing and cooperative functioning of the libraries through Internet has also become vital. The utilisation of facilities by them largely depend on getting Internet connection and exploiting its services and resources for providing better access to global information. The scope is unlimited or rather limited to the imagination of library professionals.

4. NEED OF LIBRARY PROFESSIONALS IN THE INTERNET ERA

Librarians acting as custodians of information have gone through a dramatic change and from providing document to their clientele have switched to be information providers. The role of librarian as information organiser and a navigator has gained importance in the Internet era.

The library professionals need to focus and seize new opportunities and demonstrate how the tools of Internet can be gainfully harnessed for improving library services.

Internet can be viewed as the biggest library in the world in which information is not properly structured and organised, there are no standardised rules of classification or access. Recent/current literature shows that the best search engines on the Internet allows access to only approximately 30% of the information corresponding to search. This underlines the inadequate methods used to access information despite the best available search engines.³

Moreover, there is no guarantee that same query expressed in the same language using various search engines will give same results. The information on the Internet is stored in an unstructured way with innumerable databases, each having its own searching interface, also the volatile nature of sites, lack of information on these sites will come in the way of accessing the Internet.⁴ Taking into account the current and foreseeable increase in the number of

documents or the web sites on the Internet, these issues will become the crucial problems in access to information. It is therefore, important to seek a definition of catalogue, indexes and thesauri and help of library professional which would provide homogenous access to information and data.

Internet has many other drawbacks like lack of comprehensiveness, coverage, the inability to distinguish between popular material and research work, lack of controlled vocabulary and also a casual approach of the web page designer often makes the web databases more difficult to search. In addition to this, according to a latest report, a search engine covers only 15% of the total database available on the Internet.⁵

Librarians can play a greater role in identification, listing, and classifying information sources and providing systematic approach to accessing the required information. This way they can take rightful place as human agent along side the search engine in searching the Internet. In the due course of time the librarians will have to develop new indexing methods and evaluation techniques to tap information from the Internet and also establish the classification modes in a open way to allow for those addition of new categories of document that may differ from original priorities. Hence, the uncertainties raised by some people that Internet may be a threat to library and library science profession is no longer true.

5. ROLE OF INTERNET IN DISCHARGING LIBRARY FUNCTIONS

Internet is playing an important role in discharging the functions of libraries. It is changing the ways, the librarians organise, manage and disseminate information. With more and more documents getting published electronically and Internet resources growing at 18% a month, libraries of 21st century will have to shift towards electronic means of acquiring, processing and disseminating information.⁶

Today all sorts of library services from membership registration to document delivery can be offered through the Internet. The trend is quite evident from the web sites of American

Business School Libraries that are quite advanced in library and information services arena.

Some of the important library services that can be offered through the Internet are as follows:

5.1 Acquisition of Documents

Internet has made simple and speedy purchase of information sources/documents like books, journals and electronic publications. A number of commercial databases are available for the librarians to exploit viz the CAB abstracts, Agricola, Medline, Agris, Biological Abstracts, Compendex, etc. of Dialog and BRS Information Technology.

Most of the publishers and booksellers have their web sites on the Internet and place their regular catalogue and leaflets of new publications. Some of the publishers of primary journals like American Chemical Society, IEEE (USA), Elsevier Science publishers are providing their journals online. The IDRC, Canada is providing books on research and development that can be ordered online through the URL <http://www.idrc.ca/bookhque>. IDRC also publishes its best reports online which are available at web site <http://www.idrc.ca>. CAB Publishing has recently launched a series of subject specific online communities catering to the needs of librarians and researchers, each community will feature a comprehensive abstract databases with 25 years archive.

Examples of some of the useful set of links available through the Internet for acquisition are:

1. Association of learned and professional society publishers
<http://www.alsp.org.uk/member.html>
2. Ingentia journals, provides access to bibliographical information from more than 550 journals from Academic Press, Royal Geographical Society, White House Press and Harwood Academic, etc. and can be searched without restriction
<http://www.ingentia.com>
3. ARL Directory of Electronics Journals produced by Association of Research Libraries gives Information on electronic

journals and newsletters along with details of the subscription.

4. Britannica Online offers the world's first online encyclopaedia. The libraries can provide access to the readers by paying some registration fee. The Britannica Online has advantage of accessing articles not yet in print, and Britannica Book of the Year
<http://www.eb.com/>
5. Amazon.com books web site provides access to greater selection of books with over one million title which is searchable by keywords, author, title or subject. The site also has provision for purchase, via Netscape's secure commerce server or over the phone.
<http://www.amazon.com>

The library and information professionals can easily browse through the current publications available on various web sites in their area of interest, confirm the prices, etc. and place orders online. Any discrepancy in the invoices or bills, edition of books, printing, etc., can be clarified within minutes through e-mail and much of the paper work is reduced. It is estimated that within the next 5-6 years the Internet will become the mechanism for distribution of three fourth of the specialised journals and also the major medium for transfer of research information.⁷

The librarians will thus need to change their attitude towards collection development, as the technology advances in future, it will encourage access to document rather than ownership. In future, virtual libraries may replace traditional libraries which means there would be purchase of access to information rather than the source. This trend will generate many questions about values of libraries.

5.2 Technical Processing/ Classification & Cataloguing

Preparing standard catalogue without much effort has become possible due to Internet and the (WWW). Librarians can check the catalogues of other libraries like that of Library of Congress and confirm the information required for a record which can be easily ascertained from the original document. The library professionals can also access Internet

resources for verification and downloading bibliographical information from other institutions. OPACs via Internet have become a popular source of bibliographic information. Libraries can use of other institutions by OPACs to get information they need to organise knowledge. Databases of bibliographic utilities will become more comprehensive source of information than has been so far possible by their present catalogues. With advance information retrieval facilities, the libraries in future will have added value by using catalogue of journal articles.

The librarians can provide the bibliographical data through Internet access via OPACs of other libraries in the world. The electronic documents can be supplied to the users on demand through the network. According to Schmidt, "access to OPACs will be increasing from outside the library. The boundaries between the cataloguing of libraries holding and cataloguing of information will be more difficult than today, in my opinion they will vanish completely when networks have reached a certain technical capacity." ⁸

Internet has also affected the traditional classification system of our libraries. Several libraries are opting the Cyber Dewey Decimal Classification Summaries as a way to organize and navigate resources on the WWW. The Cyber Dewey website includes alphabetical index to Dewey. The Dewey home page (<http://www.oclc.org/pp>) division contains links to some of these systems. According to the editor of DDC, Joan Mitchell, "it is exciting time to be Dewey user because we have a commitment to keep pace with knowledge to help our users classify efficiently and help our users extend from the shelves of their libraries into the electronic environment."⁹

5.3 Circulation

The Internet has made the circulation of in house document much easier. After the technical processing, the new books documents can be placed in the OPAC on the day of acquisition itself and readers with Internet connection at home or at university can browse and reserve the books sitting right at their

offices or at home, within seconds after arrival of the book in the library.

Further libraries subscribing to electronic journals need not necessarily provide access to it in the library. Since each subscription is provided with a user ID. The reader by enquiring the user ID from the circulation section can access the journals from their departments or offices without taking pain of visiting the library.

Through Internet, the libraries can also provide bibliographical databases via OPACs from libraries of other institutions world wide. The OPACs may be searched from a terminal within the originating library or from a terminal located at a remote place. Some of the examples of online catalogues are:

1. Library of Congress.
locis.loc.gov
2. Catalogues-Catalogue Guide to several OPACs
<ftp://funet.fi> path:/pus/doc/library
3. Library, University of Southampton.
<http://www.soton.ac.uk/library>
4. University Library, University of Newcastle.
<http://www.ncl.ac.uk/library>

The electronic documents required by the readers can also be supplied on demand through the network.

5.4 Reference and Information Service

Internet for reference work in the library is gaining popularity. Reference librarians use a multitude of information sources to answer the question they are asked, these are called ready reference collection. The Internet can be successfully utilised for providing short-range and long-range reference service because various primary and secondary sources of information are available online from many sites. Several sites like <http://kiz.at.ymas.edu.irre.html> provides alphabetical listing of a full text resources data suitable for ready reference.

The URL <http://www.refdesk.com/> exposes the librarian to an excellent virtual library for reference source known as 'My Virtual Reference Desk'. Similarly India World

<http://www.india.com>, is a comprehensive reference service on the net. The IFLA World Directory of National Union Catalogue is now available on IFLANET, at <http://www.ifla.org/vl/2/du>, this is a complete listing of all known current national union catalogues, including monographs, serials and general union catalogue and a hot link is also included for direct access for catalogue which are available on the Internet.¹⁹

Some of the general reference sources available for the reference librarians are given in the Annexure. Though Internet is useful in providing reference service it may not provide answer to every reference enquiry. Sometimes it may also take a long time to locate the information, in such cases the librarians have to keep useful supplementary sources of information in the library.

However, the Internet can be useful in finding certain types of information such as social, economic, statistical data, censuses information, daily exchange rates, government budget and reports, etc. including current news, calendar events, employers' profile and other career information.

According to Sara Ryan, certain type of information most likely to be found on the Internet are: the computers and the people who use them; scientific and technical information, popular culture and entertainment, PR type of company information, historical and humanities information.¹¹ The librarians have to keep guide to the Internet resources or guide to various web sites available to the users interest for example <ftp://unahh.lib.urlich.edu>. (Path: *inetdirs*) is an important resource guide. The University of Michigan also has a number of subject guides to Internet resources. Although Internet is a wonderful resource, the authoritativeness of the information is quite concerning. Most of the information available online is being supplied by the volunteers.

Though we can often trust them, they can also occasionally contain inaccurate and misleading information. Hence the reference librarians have to double check the facts before giving it to the users.

5.5 Communication

Internet has become the primary mode of communication which carries more than the combined total of the postal services of all countries in the world put together by the turn of the century. It is an important means of communication which provides a cheap and efficient means of mail transfer. Libraries can use this facility extensively to communicate with the publishers, book sellers and vendors of the other library products and services with scholars librarians and users across the globe. The most popular means of communication on the Internet is e-mail. Like the regular mail, there are also mailing lists to address groups of people. These mailing lists often called listservs, can serve a valuable resource for the librarians. A more public electronic forum for discussion on the Internet is called the Usenet News. Usenet provides large numbers of news groups or conference that have open participation which can be used by the library users and library professionals.

5.6 Resource Sharing and the Internet

With the advent of Internet, major libraries are now available online through Internet and hence 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 and accordingly place a request for their users. The increase in the cost of documents for many disciplines in recent years has meant that the libraries have been able to provide less and less access to research literature through their in-house collection. Also with the financial constraints, the librarians and information professionals are seeking alternative means of providing access to journals. The problem of print journals and the concomitant development of computers and communication technologies have led to the development of electronic alternatives to print journals, i.e., in various forms of electronic journals.

Recently a number of publishers have agreed to offer their journals electronically to libraries through First Search Electronic Collection Online. This enables the libraries to

subscribe a large collection of academic journals from many publishers from a single WWW interface that support cross journal searching and extensive browsing. According to Rick Noble,¹² Vice President of OCLC reference service, "First Search Electronic Collection Online is one of the first online system to address the key issues necessary to make the transaction from paper to electronic journals. The system can accommodate thousands of journals and libraries can choose the journals they want to include in their electronic collection and journals will be loaded in their entirety on or before their publication date." Libraries using Electronic Collection Online will be able to access them remotely through WWW. The users will be able to search and browse citation from journals, abstracts and complete articles from journals subscribed by their libraries. Further this service combines the cost benefit associated with remote access to data with the advantage of local collection management. It will reduce information cost for libraries by centralising storage access. In addition, the electronic collection online offers libraries a number of value added features, including print quality article representation, usage statistics, technology migration, technical and product support, etc. To make use of such collection, the Internet plays a crucial role and its impact on library services and process is quite obvious.¹³

5.6 Inter-Library Loan (ILL)

To facilitate resource sharing, many libraries 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 Ariel and Avis have facilitated the libraries to share their resources effectively and efficiently.¹³

Ariel software opens the window on Internet document transmission. The Ariel workstation has been developed by Research Libraries Group. In US, several university libraries were heavily involved in testing it. Ariel lets users send and receive crisp clear copies of document over the Internet with speed and ease of fax. Avis is another Canadian product

developed at the University of Waterloo and refined with the cooperation of interlibrary loan practitioners in libraries across Canada and USA. Avis is PC based software designed to manage all aspect of inter-library loan process. The inter-library loan office can network multiple Avis workstation on local area network. It offers the following benefits:

- (a) Single comprehensive solution for the management of all ILL activities
- (b) Effective management of the paper work and record keeping acquired in borrowing and lending an item
- (c) Status tracking of request at all stages of the ILL process
- (d) Integration of bibliographic and location information from CD-ROM catalogue and online union catalogue
- (e) Transparent electronic transmission of requests and messages through the Internet.

Thus with the help of these software inter-library loan over the Internet has become of great help in the inter-library lending and borrowing. Retrieval has become easier and transaction much quicker as the request can be sent through e-mails.

6. DESIGNING AND MAINTAINING LIBRARY WEB SITE

Libraries can play an important role in disseminating information by creating their web site. Through their sites they can inform about various services, products, events, and courses offered by them.

For academic librarians the most important users includes the faculty, students and other librarians. However, depending on the type of library the primary audience may vary. The most important point for libraries in designing a web site is to consider primary audience and provide information relevant to their needs not readily available elsewhere. Since most information is generally available in other sites, the librarians role get emphasised in organising the information in their web pages by providing links utility as they save time over the print volume and money over the online databases. In essence, combining information or links to other information in ways not previously done

can add value to the information and consequently to the library web site.

To provide easy access to the libraries' websites the librarians need to heed on some of the following basic rules.¹⁴

6.1 Subject-Specific URL

The Uniform Resource Locator (URL) of the website should be related to the subject content, easy to remember.

6.2 File Size

The files should be short to ensure fast loading. The web pages often load slowly because the file is too large or contain too many pages in this case the file may be split into multiple files to give easy access to the file.

6.3 Clarity of Information

The information in the web pages should be categorised for clarity using headings, breaks, paragraphs, etc. which can be done by using HTML codes. To ensure the audience to quickly ascertain what specific information the library web pages provide, the pages must be provided with the explanatory notes.

6.4 Information About Content

The librarians also need to provide brief, clear and informative statement regarding the content of their web pages in the web site so that effective hyperlink can be provided.

Librarians while designing their web pages should try to provide as much original material as possible. Although web pages provide list of hypertext link to remote or documents located on other servers can be dangerous as servers may crash or there may be a change of address. Under this situation the users may receive 'file not found'. If there are too many concurrent users on the distant server the audience will have to wait longer to access the file. Unfortunately placing a hypertext link in a page implies to the audience that they will access particular document by following that link. If they follow the hypertext link but experience problems accessing the document they may perceive the web site as problematic. To avoid these frustrations and misunderstanding the librarian should try to provide as much original

information as possible. Original material refers to the text file containing hypertext documents located on their own server. More the material the librarians own, the less they will have to depend on other servers. To house material on the libraries server, it has to be either typed, scanned or copied, then converted into hypertext format. Having too many full text documents the server could also creates traffic congestion because the individuals will access the server for longer period of time. This will make it difficult for other members to access the library site and in essence create the access problems the library is trying to avoid.

The librarians should strive to provide a mixture of hypertext links to documents owned by others and full text documents located on one's server. This mixture gives the web pages more credibility and adds value to the information while decreasing the frustration resulting from too much reliance on other websites.

6.5 Interactive Sites

Librarians should also provide mechanisms for communicating with their users and moving them between their web pages, generally when individuals read books they often have question such as when it was written how to contact the authors, whether new editions are forthcoming or where other similar books are located. This can be done by providing the hypertext links.

The librarians can also monitor the usage of their server and particular files by placing a Counter software in the home page. Counter software monitors traffic on the server, and provides periodic statistical reports summarising which file are being accessed most and redefine their web page to meet the readers needs and strategically place administrative links on highly used pages. Similarly the audience response and statistical feedback enable the librarians to create new titles and include statements like date of modifications and like 'What's New' and date of last modified hypertext links. Date last modified gives credibility to the web files. To keep the audience aware of new material, librarians may include links to those materials at the top of the home page and other heavily used pages. This

provides greater access to new materials and allow promotion of continued growth of web sites.

Once the links are placed, the library professionals should also consider the aesthetic appearance of the web pages since the colour, text, hypertext links and background, etc. generally influence the use of the web site.

Finally the library professionals need to effectively publicize their web site through forums to which the users pay particular attention. Newsletter and electronic discussion groups may be used for this purpose.

For publicising the web site to diverse audience/users, librarians can register their web sites URL with major search engines like Yahoo, Lycos, etc. and providing brief descriptions of their contents.

7. CONCLUSION

The Internet has thus integrated nearly all aspects of the library activities, the librarians can now use the Internet for exploiting the catalogue of the other institutions, ordering books and journals online, participate in ILL, use e-mail, and discuss through listserves, support reference service through remote databases and most important of all establish library/home pages to project their collection and services on the site.

The scope is only limited to the imagination of library professionals. All that is required by the today's professionals is a through understanding of change in concept of librarianship and psychological willingness to look upon the Internet and the WWW as an opportunity and respond to the challenges of information resource management and information infrastructure development for harnessing the benefit of the much talked about Internet technology in context of the libraries.

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List of Important Uniform Resource Locators (URLs)

A list of URLs which are useful in reference work for librarians are enumerated below:

1. **Martindale's The Reference Desk:** It is a trove of more than 4600 reference works including online calculators to dictionaries and science tables and databases.
<http://www-sci.lib.uci.edu/martindale/Ref.html>
2. **My Virtual Reference Desk:** For a quick access to the basics including current news, calendar of events and links to reference and search aids which provide access to over 11000 other sites, online encyclopaedias search engine information, and weather links are also provided.
<http://www.refdesk.com>
3. **The 2000 World Factbook:** It is a very detailed reference resource for countries, oceans, economics, geographic, population of the world, etc.
<http://www.odci.gov/cia/publications/pubs.html>
4. **The Periodic Table Site at Sheffield:** In this site, one can click on an element in the table to access essential information (symbol, atomic number and weight group number and CAS registry ID).
<http://www.shf.ac.uk/uni/academic/AC/chem/>
5. **Weights and Measures Tables:** This is static site which lists scientific notations metric conversions, their interrelationships and US equivalents.
<http://alabanza.com/kabacoff/inter-links/misc/weights.html>
6. **Windweaver Search Pages:** Maintained by Tracy Marks, this site has links to about 250 of the Net search directories and search engines. This includes quick search short cuts to companies on the web, personalised news online books, and manuals, computer resource centres, newspapers and magazines. The site is being updated regularly and also has a search helper.
<http://www.windweaver.com>
7. **Career Magazine:** This online magazine features searchable listing of current job opening, resumes on file, employers profile, other career information and US immigration information.
<http://www.careermag.com/careermag>
8. **Indian Census Data:** This site gives annual crop and production data.
<ftp://cwmills.umd.edu/pub/India>
9. **Statistical Abstracts:** The 2000 Statistical and graph on social, economic and International subjects.
<http://www.census.gov/prod/www/statistical-abstracts-us.html>
10. **Hypertext Dictionary-The hypertext Webster interface:** It is an online dictionary. The dictionary is linked to thesaurus and the entries are also hyperlinked to more definitions. This is an excellent reference tool.
<http://c.gp.cs.cmu.edu:5103/prog/webster>
11. **World Health Organisation Home page.**
<http://www.who.int>
12. **University of Virginia Internet Library Reference shelf.** It provides an index of Internet resources arranged by subject.
<http://www.lib.virginia.edu/reference.html>
13. **The Internet Resource Guide**
<ftp://una.hh.lib.umich.edu>

14. The whole Internet catalogue.
<http://www.avloncity.com/info/tprefect/matrix/whole.htm>
15. Big Web India: A directory of Indian corporate and business related sites on the Internet
<http://www.bigwebIndia.com>
16. Booklist: It contains reference book bulletin
<http://www.ala.org/booklist>
17. Index of Online Directories.
<http://www.bucknell.edu/directories>
18. Information Pleases Almanac
www.infoplease.com
19. Book Review.
<ftp://csn.org/>
[path: pub/alt.book.reviews](ftp://pub.alt.book.reviews)
20. Directory of electronic journals, Newsletters and Academic Discussion List: Association of Research libraries, USA
<http://arl.cni.org/scommm/edir>