

Growth and Development of Electronic Journals: An Outline

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ABSTRACT

The libraries are the soul of any academic institution. They are accessed for variety of information from factual data to empirical data. The advent of computers in mid 20th century and their application in the library is supposed to be the milestone for the changed nature of services provided by the libraries. Not only that, the catalogs which are supposed to be the most basic and important part of library services also got sea changes in their structure and format from card form to online OPAC form. In India the use of computers begin in 1978. The microcomputer evolution took place in 1980s and thereby the increased use of floppies and diskettes for large amount of data storage. Subsequently the advent of www by Tim Burners- Lee in 1990 has changed the concept of traditional libraries confined to the four walls to those crossing the world boundaries. Consortia play a major role in acquisition, processing, archiving and providing access to information to the users with the help of e-resources. The timely publication, ease in delivery, incorporation of multimedia contents, hyper-linking and federated search facilities are the features that have made e-resources more reliable and accessible by the academicians, and researchers. Consortia form of organization of e-resources are very helpful in this recessing world which is observing shrinking budget as the main hindrance in the use of e-resources. As the time passes the forms of e-resources have also changed from born digital to converted digital. Whatever may be the form of resources the motto behind is to provide accessibility to the information to the users and to fulfill the need of the users and this will certainly be done by the e-resources crossing the boundaries of the space with help of various technologies.

Keywords: Electronic journal, E-journals.

Introduction

The journal has played a major role in the creation and transmission of knowledge as the primary medium of formal scholarly communication and has remained essentially unchanged in form and function for more than three centuries. During the 1990s the somewhat diverse phenomena variously termed electronic journals, electronic serials, or electronic publishing rapidly evolved. Though it may sound trite, the electronic journal may fundamentally transform serials management in libraries. The electronic journals concept covers a wide variety of diverse phenomena. It has been applied to networked publications available on the internet through such technological means as e-mail, list servers, anonymous File Transfer Protocol, gophers, and the World Wide Web (WWW) as well as through such offline technologies as floppy disks, disk cartridges, magnetic tape, or CD-ROM. In 2012 electronic journals on the Internet were available in 23 different data formats, including American Standard code for Information Interchange, HTML, and PostScript. Some electronic journals are sent to the library through Electronic mail or list serve, but others must be accessed from remote sites. An electronic journal can be free or fee-based through subscription, licensing, or pay for use. Some can only be purchased as part of a multi-journals package. The term electronic journal has been applied to

- An electronic version of an established print journal.
- An electronic only journal.
- A journal that is issued in both electronic and print format.

Many established print based journals now also publish an electronic version. Some primarily electronic journals, such as *New Astronomy*, issue a paper version for archiving purposes. Theoretically, an established journal could abandon print and transform to an electronic-only format, or vice versa. Serial types available in electronic format include journals, magazines, newspapers, newsletters and Zings. In this chapter the term electronic journal is used for all these categories. The term electronic publishing likewise covers many different things. In regard to serials, indexing information, abstracts, tables of content, partial text, full text, text and graphics, and such value-added features as keyword searching capacity can be available in an electronic format. Some electronic journals group their content using the traditional approach of volumes and issues; other disseminates articles separately. Academic conferences or discussion lists, organized around a particular theme, are a major form of electronic publication that does not easily fit into traditional and serial classification schemes. Electronic publishing also covers non-serial items such as electronic books or other types of text. Publisher and journal home pages and preprint servers on the WWW are also significant pieces of the electronic mosaic.

A fairly extensive literature on electronic journals already exists, testifying to the profession's interest in the topic. Through April 24, 1997, 428 items had been published on electronic journals, based on a search of Library Literature on CD-ROM. Nevertheless, only a minute portion of these items present empirical based research. In this paragraph focuses on the management of electronic journals in libraries but also addresses the internet and www and their uses in serials management, electronic full text collections, and the electronic journal's role in the scholarly communication

process. However, the myriad of technological details involved in creating and disseminating an electronic journal are beyond the scope of this analysis.

Definition:

Electronic journals are sometimes, referred to as “E-serials”, “On-line Journals”, “Web Journals”, “Electronic periodical”. But what actually is an electronic journal?

McMillan defined it as any serial produced, published, and distributed nationally or internationally via electronic network such as internet.

According to Harrods Librarian’s glossary, an electronic journals for which the full end product is available on the disc, over the network or in any other electronic form-strictly a journal in which all the process is carried out electronically. In other words electronic journal is one where the writing, edition, referring and distribution of item are carried out without and paper intermediaries.”

The encyclopedia Dictionary of Computer Science (1989) defines: “The electronic Journal, in its simplest form, is the all electronic counterpart of a conventional print on paper scholarly journal. The concept originated in experiments based on computer conferencing system the approach currently envisaged is based on a large main frame computer, which acts as a central store”.

“A journal created for the electronic medium and available only in this medium.” (Lancaster 219)

Darrel Ince. [A Dictionary of the internet] defines “Electronic journal is an academic journal which is only published on the world wide web. It carries out all its activities including peer review and publishing using net technologies such as conferencing, email, and the use of web sites. Such journals pride themselves on the rapid publication of articles and are often referred to as e-journals”. (khushpreet 245). Reitz, J. M defines: “a digital version of a print journal, or a journal-like electronic publication with no print counterpart, made available via the Web, e-mail, or other means of Internet access. Some web based electronic journals are graphically modeled on the print version. The rising cost of print journal subscriptions has led many academic libraries to explore electronic alternatives.”(khushpreet 245)

Types of E-journals

The electronic journals are categorized in many types according to the purpose. On the basis of distribution methods the following types of e-journals have be identified:

- **Internet application e-journals:** These e-journals are available through internet applications, which are also known as classic electronic journals. Originally they were distributed via the e-mail but now have been available on the web and only announcements regarding issues are distributed by e-mail.
- **Parallel e-journals:** These types of journals are published simultaneously in both forms: Print and electronic. The online version may include the full text of journal, selected articles or only the table of contents. The website provides previews and excerpts of issues. The electronic version is always available much more quickly than its print counterpart.

- **Database Model:** Another type of e-journal is called database mode. It is also known as the software model. Here articles reside in centralized database and the publishers and subscribers are given permission to access the database and use search software on the central computer to locate and download articles. The database model provides a piece of software that runs on an internet connected computer which connects to the database of the journal's central computer.
- **CD-ROM Journal:** Commercial publishers have also made journal titles available through the CD-ROM. The full text of journals and other serial publications have been made available by the means of a CD-ROM.

On the basis of accessibility, e-journals are divided into two categories

- **Commercial E-Journals:** These e-journals are not available freely. Readers and libraries have to pay for the subscription of these e-journals. Many big publishers publish commercial e-journals.
- **Open access e-journals:** Open access journals are those which use a funding model that does not charge reader or their institutions for access. Open access provides users the right to "read, download, copy, distribute, print, search, or link to the full texts of these articles" as mandatory for a journal to be included in the directory.

Feature of Electronic journals

Electronic composition and transmission have led to fast production, distribution and reviewing of the product, thus, users can access a particular article or the entire issue of the journals within no time. Large collections can be searched and retrieved simultaneously and instantly. User interest profile can be created. The system notifies the user as and when any new publication relevant and useful to the person is added into the database automatically. The production mode of e-journals offers opportunities to establish network communication among the authors, editors and referees. Therefore, they are quite cost effective as compared to the printed version. The publisher, research groups, authors, and so on can be easily contacted, if needed, via electronic mail links. Hence, users have more creative ways to have their information queries answered. Feeko stated that it is possible to make use of hyperlinks not internally and to other publications, thus can retrieve articles directly through links from indexing and abstracting databases. He further states that e-journals can facilitate multimedia and graphics in color at marginal cost and the content can be reproduced, forwarded and modified according to the requirements.

Electronic Journal and types of Access

The access to E-journal through internet is gaining prominence because of the inherent advantages of the Net over other media such as CD-ROMs and advancement in web technology. The most significant advantage is of wide access and currency of information on the Net. However, the types of access are in itself not uniform. The publishers provide the following different types of access mechanism.

- Free access: on subscribing to the print version of the journal, some publisher provides free access to the same electronic version of the journal.
- Exclusive subscription: institutions can obtain complete access to all the e-journals brought out by the publisher without subscribing to the print counterparts. However, the subscription charges in this case are very high, i.e. Approximately 90 percent of the print subscription.
- Selective access: the subscriber chooses a few e-journals from the publisher and pays for them as per agreed terms and conditions. This type of access is not favored by the publishers because of the difficulties in its administration.
- Fee based access:
 - This is one of the most referred access mechanisms by both the subscriber and the publisher. On the payment of an access fee, which is certain percentage of the cost of the print journals being subscribed, the publisher provides access to its complete e-holdings. The subscriber will have to maintain the period of agreement. The access fee percentage in such cases depends on the quantum of print level subscription of the participating institutions. Generally the higher the quantum of print level subscription, the less the access fee.
- Institution Vs consortium access: Institutional access to e-journal is expensive and not many institutions and organization can afford to subscribe to e-journals, particularly in developing countries. However, through consortia access is cheaper as institution that has common interest and requirements can form consortia for e-journals access. This would be an economic model for wider accessibility and develop a stronger information base.
- Consortium based access model: In the near future, the electronic journals are likely to overwhelm print journals. Extrapolating from the success of e-journal that are currently published, it is clear that the electronic media will capture a large share of scholarly publications in the next five years and that the printed media will not be competitive in journal publication beyond a few more decades.

In the context of emerging electronic information environment dominated by internet and electronic publishing, the consortium based access model of information management is relatively more relevant, viable and sustainable, in the consortium based access model the member institution need not subscribe to journals on ownership basis, is far less as compared to the subscription cost of journals, Generally, the larger the size of subscription order the less the access fee. Hence, the consortium based access model is suitable and economical for developing countries. In the field of science and technology, approximately 10, 000 core periodical are being published globally. Procurement of these 10, 000 periodical by any organization is impossible due to various factors. Realizing the situation, the Council of Scientific and Industrial Research has planned to strengthen its information base by having access to about 4, 500 e-journals being published by different publisher. Currently, CSIR laboratories together subscriber to 3, 3556 print journal where in 2, 500 are unique titles. So, having consortia access to 4, 500 e-journals, there will be a strong information base to meet the information requirement of scientist and R& D staff or CSIR.

Archiving issues of E-journals

One of the major issue raised in e-journal subscription is of archival and preservation. In the case of e-journal subscription, libraries tend to depend on a single archival mechanism based on the publisher's choice. Keeping in view the dynamic character of digital formats, it will not be safe to archive e-journals through a single mechanism, it will not be safe to archive e-journals through a single mechanism. Therefore, the following multiple form to archive e-journal are suggested.

- Decide on a foolproof archival mode at the agreement stage.
- The Nodal organization should be responsible for archiving
- Members would be allowed for selective archiving.
- Providing print copies of the journals to the nodal agency.

Early History

The electronic journal's historical evolution has been traced to a 1960 UNESCO report that advocated use of computer technology to help solve the problems of traditional journal publishing. *Mental Workload* - dealing with human-machine interactions in complex systems, has been identified as the first full- fledged electronic journal. It was issued in 1980 at the New Jersey Institute of technology and funded by the National Science Foundation. *Mental workload* was referred, edited and copyrighted the same as a print journal. However, article wise separately became available as soon as they were published. An author-title index and article abstracts were available online, and readers could print the full text of an article. The editors planned to attach reader's commentary to articles, although this idea was apparently never implemented. According to Margo Sasse and B. Jean Winkler, its relatively quick failure can be attributed to software problems, the reluctance of scholars to submit manuscripts, and the fact it was distribute only in the United States due to a disagreement with British Post Office concerning transatlantic telecommunications. This experiment is sometimes called the electronic Information Exchange system project after the computer conferencing system at the New Jersey Institute of Technology on which it was published.

The Birmingham Loughborough Electronic Network Development project, a transatlantic counterpart to EIES, took place in the United Kingdom during the early 1980s. the project-a cooperative venture between the University of Loughborough and the University Birmingham- produced a journal entitle computer Human Factors, which was' designed to accept, referee, edit and archive articles electronically. The BLEND project resulted in two issues of Computer Human Factors, each containing two refereed articles. However, it failed for essentially the same reasons that lead to the demise of *Mental Workload*. Both the EIES and BLEND projects illustrated the importance of "human factors" (i.e., although the electronic medium allowed more rapid edition and refereeing, there were still: human delays in getting down to work").

In 1982, based on the EIES project experience, Murray Turoff and Starr Roxanne Hiltz outlined four potential forms for the electronic journal of the future:

- An informal newsletter
- A non-refereed "Paper Fair" to which any member of an electronic conference

system can submit a paper that can be read and commented upon by other members.

- An electronic form of the traditional print journal; and
- “A highly inquiry-response system” in which member of an electronic network submits an “inquiry”, receives “response” from other members, and compiles the response into a “brief” for distribution with other members.

Fifteen years later, apparently all four of these forms evolved to some degree. Electronic newsletters and equivalents of traditional print journals now abound. The ‘Paper Fair’ is quite Fifteen years later, apparently all four of these forms evolved to some degree. Electronic newsletters and equivalents of traditional print journals now abound. The “paper Fair” is quite similar to a contemporary preprint server, and “a highly structured inquiry-response system” bears a remarkable resemblance to what often takes place on a listserv or electronic conference.

In the mid- 1980s, *Electronic Social Psychology*, covering a wide range of social psychology topics, was described in the literature. Subscribers to this fee-based journal required a modern and membership in the Source, a commercial computer network that maintained ESP on a mainframe computer. Subscribers also received electronic mail (e-mail) services, access to a bulletin board and a computer conference, and the opportunity to communicate with each other through the source’s chat service. ESP was not refereed, but readers rated each article on a one to nine scale and added a single line of commentary. A printed version was distributed to subscribers twice a year for archival purposes.

New Horizons in Adult Education, a refereed electronic journal, was first issued in fall 1987. Initiated and run by Syracuse University graduate students, it was distributed for free on a BITNET listserv. This title was recently called the first widely recognized scholarly electronic journal”.

Several electronic journals-some of which are now quite well know began publication in 1990. These early generation journals often used e-mail or list serves to send issues to subscribers. The *Public-Access Computer Systems Review*, a free, non peer-reviewed journal, was first published by the University of Houston Libraries in January 1990, and the second issue appeared in June. The table of contents for each of the three yearly issues was sent to members of PACS-L, a BITNET computer conference established by the University of Houston Libraries in 1989, as well as other subscribers. They would then issue appropriate commands to obtain specific articles by file transfer. A companion volume focusing on vendor releases and current news items, the *public-Access computer system news*, began publication in March 1990. The first issue of the *Journal of the International Academy of Hospitality Research*, a peer-reviewed publication in hotel, restaurant, and institutional management and tourism, was released via listserv over BITNET and the Internet on November 26, 1990, with the second on February 20, 2007. This subscription-based title was published by the scholarly communications project of Virginia Polytechnic Institute and State University. Each issue consisted of a single article.

Also founded in 1990, at North Carolina State University, was the now well-known journal *Postmodern Culture*. Dealing with contemporary literature and culture,

this journal's table of contents was distributed via e-mail three times a year. Subscribers could then issue listserv commands to receive one or more article or the entire issue free of charge. For a subscription price, the journal was also available on a computer disk or microfiche. E-journal, which addressed the implications of electronic publishing for an audience of humanists, was first published at the State University of New York at Albany in spring 2007 using listserv technology. Current Cites, composed of citations to recent articles dealing with information technology, began electronic distribution through the University of California's MELVYL system I February 2007 and through PACS-L in fall 2007. The online journal of Current Clinical Trials (OJCCT), sponsored jointly by the American society for the advancement of science (AAAS) and OCLC online Computer Library Centre was founded, among other reasons, in response to the need for the rapid dissemination of information in clinical medicine. OJCCT, launched on July 1, 2009 a subscription to OJCCT cost \$110 per year. This was the beginning of OCLC's electronic journals online program, which included online Journal of Knowledge Synthesis for Nursing, Applied Physics Letters Online, and Immunology today Online.

Developments during the early 1990s testify to the burgeoning interest in electronic journals, the first meeting of the Association of electronic scholarly journals took place in October 1990 at North Carolina State University. VPIEJ-L, an online discussion group devoted to electronic journals was founded in the mid 1990s at the Virginia Polytechnics Institute and State University. Also during the early 1990s, some seminars or conferences devoted to electronic journals were organized. Typical examples include a seminar at Bond University in Many 2008, sponsored by the Australian serials Special Interest Group and the Australian council of Libraries and Information Services, or the "International conference on Refereed electronic Journals, ' held at the University of Manitoba in Winnipeg, Manitoba, Canada, during October 2009. By the late 1990s, too many conferences to enumerate had been held on the topic of electronic journals.

Perhaps the best-known electronic journal within the discipline of library and information science is the Newsletter on serials pricing issues, whose history has been chronicled by its editor, Marcia Tuttle. The newsletter was first issued on February 27, 1989, in both paper and electronic format. Due to the high cost of producing the paper copy as well as its "lack of timeliness," the paper format was discontinued at the end of 1989, and the Newsletter on serials Pricing Issues converted to an electronic-only format with number 14 in 1990. Of considerable relevance to this thesis subject is the Serials in Libraries discussion Forum (SERIALST), founded in October 1990 at the University of Vermont. It is devoted to almost all topics pertinent to serials management in libraries. On November 25, 2007, SERIALST converted from an un-moderated to a moderated forum. Also worth nothing is New Jour, a moderated discussion list for announcing "newly planned, newly issued, or revised" electronic journals or newsletters. It also covers new electronic versions of previously established print periodicals. New ours, administered by the ARL, was founded in august 2009.

Further Growth and Development of Electronic Journal

A major trend beginning in the mid 1990s has been for commercial and university presses to offer simultaneous electronic versions of their established print journals. For example, during the summer and fall of 2009, John Hopkins University press, the Johns Hopkins University library, and the Johns Hopkins University Computing Center instigated Project Muse to market on the www electronic versions of the press's 42 scholarly journals, mostly in the humanities and social sciences. Subscribers are offered a print subscription, an electronic subscription, or both. A prototype providing free access to four sample issues was mounted on the www in early 2010. As of July 2013, the web site contained sample electronic issues and other information for all titles in the project, although access to the full text was restricted to individuals associated with subscribing institutions. By the early 1990s, commercial online computer information services were providing full text from popular magazines to end users. For example, in 199 American online offered 22 magazines, including the Atlantic Monthly, Consumer Reports, National Geographic, and Time; Campus Serve provided 16, including U.S News & World Report; and prodigy offers 9, among which was Kiplinger's Personal Finance Magazine.

New, Multimedia magazines were beginning to appear in CD-ROM format by the mid-1990s. Newsweek Interactive, issued quarterly on CD-ROM, included, among other items, the complex text of Newsweek for the last three months as well as 200 recent Washington Post articles. First issued in 2010 were Media Magazine, a monthly that included movie clips, children's games, audio CD reviews, and associated press dispatches; substance digitize, a quarterly focusing on books, movies, music, and technology for "twenty-something's", and Blender, a monthly "youth oriented pop culture journal." Launch, aimed at the "computer-literate 18 to 34 year olds" and launched in May 2011, was described by the New York Times as "a CD-ROM magazine with a difference: more ads." Ulrich's International Periodicals Directory, 1988-89 noted 84 serials or periodicals available on CD-ROM, but the 1998 Ulrich's listed 2, 240.

A significant trend during the last half of the 1990s was the creation of Web-Based electronic journals. The 2010 directory of Electronic journals, Newsletters and Academic discussion List listed approximately 35 electronic publications "created for Web reading/distribution"-a number that had increased to about 140 in the 2011 directory. Counting publications is also available through Web link in 2011. Reportedly the initial refereed library and information science journal on the WWW was The Olive tree, published by the School of Library Science at the University of Arizona and first issued in January 2011. The number of scholarly, peer-reviewed journals also increased in the 1990s. Sasses and Winkler estimated there were more than 30 scholarly electronic journals published in 2008. At the end of 2011, Stephen P. Harter and Hak Joon Kim identified 77 scholarly, peer-reviewed electronic journals.

By the mid-1990s, authorities were distinguishing between first-generation and second-generation electronic journals. In 2011 Ellen Duranceau and colleagues used the following generalizations to characterize the first-generation:

- Based on ASCII text files and used a simple file structure.

- Published by individuals or groups of scholars rather than commercial or university press.
- Copyright restrictions waived by the publishers
- Because of “small file sizes. ASCII text format, and lack of access restrictions, ” local library storage cost relatively little in file space and staff time.
- “uncertainty about server and archive stability”

In contrast to the first generation, second –generation electronic journals are more likely to:

- Be based on HTML or “specially formatted files” for distribution on the www rather than on ASCII text,
- Have more compiled file structures(especially for multimedia)
- Require more storage space
- To fee based rather than free and thus concerned with copyright,
- Not use e-mail for delivery
- Be difficult to check-in-due to links to other sources on the internet, and
- Be published by university presses or commercial publishers rather than individuals or group of scholars.

The number of electronic journals grew rapidly throughout the early and mid-1990s. The 1989-90 Ulrich’s listed 2, 131 serials in an online format (either exclusively online or simultaneously with a print version), the 1998 edition contained 8, 762. IN December 2009 time magazine estimated 2, 500 electronic newsletters and 5, 000 discussion groups were available on the internet. On August 1, 1997, William Miller estimated the number of electronic journals “available to scholars worldwide” as approaching 4, 000. The number of items listed in the Directory of electronic Journals, Newsletter and Academic discussion Lists annual editions, summarized in table, and illustrates the growth of these phenomena. Journals and newsletters increased from 110 in 2007 to 1, 1689 in 2012, and the number of discussion lists rose from 517 in 2007 to 3, 118 by 2012.

Growth of electronic publication listed in the Directory of electronic journals, Newsletter and academic discussion lists.

Development of E-journal

Table 1: Year wise development of e-journals

S. No.	Year	Journal and Newsletter	Discussion List
1.	2007	110	517
2.	2008	133	769
3.	2009	240	1, 152
4.	2010	443	1, 785
5.	2011	675	2, 480
6.	2012	1, 689	3, 118

These figures may partially reflect the Directory's expanded coverage rather than the absolute number of electronic journals and discussion groups. Although the genuine growth in their numbers is indisputable. In summary, the history of electronic journals is undeniably in its early stages. One can easily imagine there will be third, fourth and later generation electronic journals.

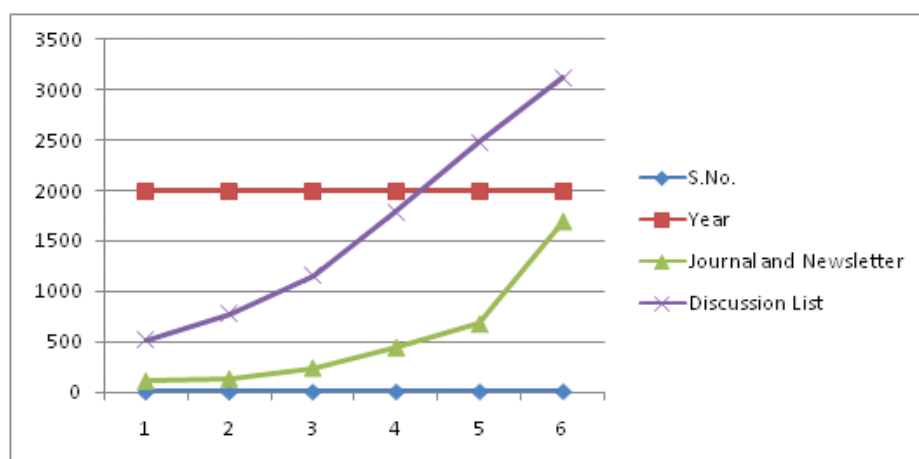


Figure 1: Year wise development of e-journals

Advantages of Electronic Journals

There are several advantages of e-journal. They are

- E-journal takes less time to publish and distribute as they does not require time-consuming printing and mailing process.
- An electronic journal can be accessed by several users simultaneously.
- Generally an electronic journal has no space restrictions, i.e. an electronic journal can publish a greater number of article and lengthy articles compared with a printed journals
- Electronic journals are accessible to anyone in the world regardless of geographic location provided one has basic infrastructure.
- Many electronic journals even provide the facility for translation of articles into other languages with just click of a button.
- Electronic journals can include sound, video, interactive three dimensional models. Electronic journals can publish color figures and graphics a t no extra cost.
- Printed journals are usually purchased as a volume including all issues in a year but in an electronic environment, a user may request single article by paying for the single article. They need not to subscribe the complete volume of the journal.
- Some online electronic journals can be accessed without paying any subscription charges or membership fee but printed journals always require a subscription fee.
- With the advent of internet many publisher and organizations are making available a sample copy of their journals on their web site and anyone can access

this sample copy form anywhere at any time. Although some print publisher provide a sample copy of their printed journals on demand but it is not always possible for any publisher to provide a free sample copy to all libraries.

- Electronic journals could be distributed more economically than print journals, because the main cost of preparing the text, the review process and other such procedures are not as capital-intensive as the costs of printing and mailing print copies.

Disadvantages of Electronic Journals

There are several disadvantages of e-journal. Dew of them is given below:

- **Credibility:** The credibility of e-journal is often questioned in reference to the following issues, e-journal do not carry the same weight as print journals in academic credit and advancement decisions, e-journals are neither accepted nor supported by the universities because e-journal publishing efforts may not be recognized as an official university activity, and the peer interest that generates the authorship and readership to print journals may not exist.
- **Accessibility:** Few e-journals are indexed in common indexing services. This lack of indexing is the reason many scholars are not even aware that an electronic journals exist in their field. Even if the existence is known one does not always know where to find it, and once found, it is sometimes difficult, especially for computer novices to determine the contents of back issues and how to access current or future issues.
- **Permanence:**
- There is the problem of permanence. Authors want to know that years from now their work will still be available to other researchers, and scholars in the field want to know that the text they are reading in an authoritative version with a definitive date of creation. The lack of physical permanence of electronic publications leads to worries about how they will be available in future years, and whether they can be adapted to new technology.

In addition, there are other disadvantages like:

- Most of the electronic journals are not yet indexed and abstracted in the indexing and abstracting tools.
- In order to use electronic journals, users and librarian must have basic computer and networking skills.
- Electronic journals that include graphics and sound are often very slow to access.
- The libraries and users (if using from home) must computer, software, service provider and browser.
- Articles of electronic journals are very easy to download and they can be easily copied and changed, therefore, changes of plagiarism may increase.
- Changes made by publisher without warning are difficult even for computer-literate readers to disentangle.

Conclusion:

Electronic journals are increasing day by day. The changes are taking place in infrastructure of libraries due to electronic journals related issues. Electronic publishing has brought significant changes in the global communication process. It has revolutionized the format of recorded knowledge. The electronic transfer of knowledge by the electronic medium is becoming sophisticated each passing day. The widely accessible and networked interface is attracting users towards electronic information services. Likewise a similar scenario in the library environment has arisen ensuing the need and use of e-journals along with the print version. Electronic journals bring along new challenges before the information professionals to give full text access to scholarly publications both print and electronic version to its end users.

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