

ELECTRONIC JOURNALS: FROM ACQUISITION TO ACCESS MANAGEMENT

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Abstract

Information is being generated at blistering pace from all the directions in varied forms and for all the themes. In addition, technology has opened new vistas to a wide spectrum of information with the recent advances in contemporary networking and multimedia technologies. Libraries and information centres now stand at the brink of a new frontier, where the flow of information is sweeping. Current developments have paved ways for the availability of scholarly information in electronic form called as electronic journals. Various other names given to electronic journals include E-zine, electronic periodicals, online journals, electronic publishing, electronic serials, Cyberzine, Webzine, Networked journals and E-journals. Electronic journals play an imperative role in the distribution of prime information and are available electronically via web. These journals have emerged as global information highways and are being added to library collections at exponential rates. Libraries are doing extensive work to make electronic journals available to their users at their desktops. Thus, the decisive link in keeping the user abreast with latest developments in their field of interest is electronic journals.

Keywords: E-Journals; Access management of e-journals; Acquisition of e-journals.

UNDERSTANDING E-JOURNALS

Electronic journals have been described in various ways in the available literature. One of the earlier explanations of the concept of electronic journal is given by Shackel (1982) as, one which involves using a computer to aid the normal procedures whereby an article is written, proofed, accepted and published. It also engrosses the help of suitable software for the users to

access the text at their computer terminals. Lancaster (1995) also defined that an electronic journal is one created for the electronic medium and available only in this medium. Rowland & Jagtar singh (1998) gave quite comprehensive definition of an electronic periodical as something that appears at regular intervals, is distributed electronically and is not restricted to a closed user group, has an identifiable title and editor(s), and contains discrete items with named authors. According to Harrod's Librarians' glossary (2005), an electronic journal is "a journal which is available in electronic format; a physical, printed version may also be available". For the purpose of this study, electronic journals may be defined as any peer-reviewed, serial publications that are digitally created and stored in electronic form in a database for the purpose of delivery and retrieval electronically through various communication media for either networked access (through the Internet) or offline access (through the CD-ROM or floppy disk etc) in various formats like HTML, PDF, text, Postscript etc.

If electronic journal is viewed in relation to their print counterparts, two forms can be identified (Rowley, 2000); journals that are published in print form are made available in digital form and secondly, electronic only journals, which can be managed by an editor and there is generally no need of a publisher. There are different forms of print plus electronic versions as reported by Harter & Kim (1996). In some cases, there is co-existence of electronic as well as its print version while in others print version is replaced by the electronic journal. Sometimes electronic journal does not actually represent the print version and gets value addition, but continues to coexist with print. In addition, there is print version plus abridged e-version; besides there exist a late e-version than its print equivalents or e-version first and then print form; also occasionally there are electronic journals with a facility to supply individual articles in print form. Electronic only journals are also called as neo-

journals and these may be distributed freely over the Internet. Usually journals have a separate ISSN for e-version.

Electronic journals have matured with the growth of the Internet and accepted by library fraternity to be the integral part of library collections. Contemporary scenario is very congenial for the growth of electronic journals supported by the users' demand for more e-content. Users are paying acute attention to formerly arcane electronic environment to grab the amenities available through it in having expedited access to meticulous and pinpointed scholarly content. Because of the several value-added features of electronic journals, these are becoming the foremost choice of academic library users.

Prior to the Internet, electronic journals were made available to subscribers by offline means like floppy disk and the CD-ROM or stored on mainframe computers and remote access was provided through dial up connections. Various other means of distribution of electronic journals included e-mail, listserv, file transfer protocol, telnet, gophers etc. The progression in the Internet and the WWW has enabled easy access to electronic journals that was previously difficult to obtain. These techniques have also facilitated incorporation of a few novel features, which are unique to the web environment such as hypertext and hypermedia linking. Hypertext has emerged as a way of pointers for linking within the text or to some other electronic text and hypermedia to provide links to other forms of media like animation, graphics, video clips, and audio material that cannot be incorporated in print form. The idea is to navigate the text, supported by multimedia, in a way that is desired instead of reading the text in linear fashion as in a paper format. Graphics could take the form of an interactive mathematical chart thereby adding value to text. At times, the electronic article can also take the form of a 'living article' which could show the results of an ongoing experiment and is frequently updated.

Electronic journals offer many opportunities to the users nowadays, which were not available to their predecessors. The foremost one is their rapid publication because all the formalities of peer reviewing, compilation, distribution etc are carried out through the channel of the Internet. These have also emerged as a solution for many problems associated with access thereby allowing remote access, rapid access, desktop access, multiple access and concurrent access. Moreover, electronic journals can be accessed round the clock (24x7x365) by eroding geographical barriers and as many articles can be downloaded and printed simultaneously by many users. The prerequisites for access across the space and time boundaries include compatible software; browser services; access rights and permission. As far as the accessibility is concerned, one good thing about electronic journals is that they are never at the bindery, never out of place (Gabriel, 1998). Therefore, it brings economy by saving binding expenses and maintenance charges of wear & tear. Publication and delivery of electronic journals is quicker and without the delays inherent in printing and postal delivery. Since the delivery of articles is in electronic format, the detection of error, if any, can be rectified with great immediacy. It also facilitates prompt annotations or observations by scholar community, thereby fostering online exchange of ideas. Other than that, electronic journals provide the users with tremendous searching capabilities by making possible the search across the whole text, title and even abstract of the article. One more benefit of electronic journals is that these do not utilize any large shelf space of already crowded library stacks. Therefore, one way to keep pace with the exponential growth in journal literature is being proactive in forms of electronic journals- the bundled knowledge.

The main disadvantage of electronic journal is that they rely on technology and special equipment for display and storage requiring capital cost of their establishment. Another shortcoming is availability of varying degrees of technological sophistication in electronic

interfaces, which can take for the users a long time to master. Even the convoluted steps in accessing the right information may be annoying for the non-tech savvy users. Training and practice to use electronic journals is required. One more complexity associated with the electronic journals is the back issue problem. Sometimes in order to preserve the appearance of the printed page in the electronic form (i.e. page integrity); publishers frequently use commercial software such as Adobe Acrobat, which requires users to maintain a viewer program on their own machine. Such software provides for proper reproduction of tables, mathematics and extended character sets, which may be difficult to achieve with the free and open-source software (FOSS).

MANAGING ELECTRONIC JOURNALS

Ideally, electronic journals have provided a solution to all the problems associated with print journals and developed as an accepted means of scholarly communication at global level. But no major development comes without issues and challenges to handle. The focus of present libraries is to look for tools to efficiently organize and manage the digitized journals because electronic journals too need to be selected, acquired, catalogued, make available and archived. Handling of printed journals involves well-established practices (Meadows, 1997), but presently the transition from print to electronic journals is occurring at a fast pace. Electronic journals must be scientifically managed to support the key mission of the institute as former being quite expensive requires an enormous financial investment. One major issue in electronic journal subscription is difficulty in developing and maintaining exclusive electronic journal holding as either the electronic journals are subscribed in juxtaposition with the print journal or as part of aggregated database that includes many titles not previously held by the library or by linking to new electronic journals that are available only in electronic format.

The concept of electronic journals is relatively new for libraries of developing countries, involving items that are not tangible in nature. These are not owned or held by the libraries rather accessed through interconnected networks. In addition, there are plethora of electronic journals accumulated by the libraries and made available to the users but there are some issues pertaining to organization and management of electronic journals, that must be given due consideration.

There are two fundamental aspects of managing electronic journals effectively (Breeding, 2004)

- Back-end Acquisition Task
- Front-end Delivering Access

ACQUISITION OF ELECTRONIC JOURNALS

Acquisition is a prime activity for collection development of electronically generated journals. Present scenario is quite different from the traditional acquisitions as it is possible that not even a single electronic journal is owned by or housed at the library rather these are accessed through remote databases. Therefore, for electronic journals acquisition refers to purchasing of access rites. Some new challenges that are to be confronted for acquisition of electronic journals include preferred pricing model; subscription schemes; ordering procedure; apprehensions of various acquisition approaches including consortia purchasing etc.

Pricing Models: There are no universally accepted pricing models for electronic journals as pricing strategies varies from publisher to publisher and these are made available through the Internet at varying pricing models. On the basis of the cost involved in subscribing to e-

journals, these broadly falls under two categories

- **Free Electronic journals:** A number of electronic journals are available freely on public domain and are not dependent on a subscription from a publisher or membership of an organization, so also described as open access journals. There are literally thousand of electronic journals, which offer high quality information totally free of charge (e.g. DLib Magazine, Bulletin of American Mathematical Society). These are often in receipt of funding from some organization or society and exist to promote the free flow of information in their chosen subject area.
- **Paid Electronic journals:** Also called as commercial journals. All the commercial journals require subscription to view their contents. There are many players for producing such kind of electronic journals such as traditional commercial publishers or scholarly societies or institutions of higher learning.

On the basis of various subscription schemes as provided by the service providers, these can further be subscribed in following forms:

- **Coupled with Print:** In most of the cases access to electronic version is tied to the subscription of the print journal. It may be either free with the print subscription (e.g. ASCE) or priced at a fixed percentage of the print subscription (e.g. IEEE package). Many publishers have started offering electronic versions of their journals almost at the same price as that of the print. Site licenses of such individual titles are negotiated directly with the publisher. These are equivalent versions of print journals e.g. Elsevier, Blackwell, Wiley etc.

- **Bundled Journals:** Sometimes publishers provide access to the entire range of electronic journals and other publications bundled into one (e.g. ACM Digital Library). Access to individual titles is not permissible.
- **Aggregators:** These provide an integrated environment to present access to and retrieve information from a number of publishers. So, aggregators are the service providers, comprising a collection of full-text electronic journals, which are packaged and made accessible through a single user interface having comprehensive search systems. E.g. EBSCO and Proquest. The platform may be either publisher-based or dedicated to a particular subject in the form of Subject Clusters. Some aggregators provide access to a stable list of titles whereas some frequently add or delete journals to their lists.
- **Big deal:** This term used by Frazier in 2001 to illustrate the deals in which electronic access is provided to a large package of journals from a publisher at a heavy discounted price. The drawback of big deal is that there is no option of selecting the titles so a substantial portion of such collection may not be of any use for the library e.g. Subscription of ScienceDirect from Elsevier.
- **Second Party e-journals:** Second party electronic journal databases are different in the sense that in this kind of database the entire journal is collected. For example, JSTOR makes available back issues of a wide variety of journals in electronic form. Other examples are INGENTA, Project MUSE, J-Gate of Informatics etc.
- **Flip Pricing:** Because of the increased preference for online content, librarians are negotiating on online-plus-print models rather than print-plus-online model. So, the core of negotiation is for online access. This is called flip pricing.

Based on the usage of the electronic journals, following pricing schemes are available in the

market:

- **Tiered pricing:** Payment based on number of potential users or the size of the institution.
- **Simultaneous access:** Campus wide access to subscribed journal is provided based on payment, which is proportionate to the number of simultaneous users who can access it (e.g. IEEE).
- **Pay per use:** Publishers have proposed a model where a user can search an online database and identify the articles of interest and pay for accessing full text of these articles. E.g. Dr. Dobbs Journal.
- **FTE Count:** Cost based per number of Full Time Equivalent students; students plus faculty; students plus faculty plus staff or alumni.
- **Virtual Journals:** Journals dealing on specific topics are grouped and access is provided to them. E.g. Journal of Electronic Publishing.

So, practically a library can opt for a combination of various pricing models from various publishers based on their economic viability.

Acquiring approaches: One of the easiest methods for acquiring electronic journals is through the traditional journal vendors. It is a very manageable option as all the libraries are used to this kind of acquisition. Otherwise, it is very cumbersome to place order to many different publishers. Placing order through a single or two vendors will reduce a lot of burden and the amount of correspondence will be diminished considerably. The other method is obtaining journals directly from the publishers or aggregators. Last but not the least and a very viable method in Indian scenario is Consortia purchasing for electronic journals. Evaluation of consortium for collective subscription of electronic journals has brought

revolution in the ways the information is provided to the users in academic libraries. It is very practical solution for subscription to electronic journals keeping in view the increasing costs of electronic resources. Consortia or buying clubs have been established in order to subscribe to electronic journals economically by sharing subscription cost based on number of member libraries. Consortia are supposed to offer access on the best terms and conditions. The larger is the membership base, the less is the subscription cost. Consortia purchasing often results in better pricing along with enhanced title access. With the emergence of consortium concept, the libraries in developing countries like India are at the verge of self sufficiency by endowing with electronic resources at deeply discounted prices. Consortia also help in providing a suitable platform for conducting training program for the staff.

Licensing: The idea of licensing to journal content is a new concept and a major area of concern for libraries. When libraries were subscribing to printed journals, they paid the subscription amount and got their issues/journals. These issues/journals were then owned by the libraries. The print journals can be bound, archived and used in many ways like kept on the shelves for the users to get needed articles in photocopy form or even lend for interlibrary loan etc. This makes their fair use within copyright law. At this point, the need of licensing the electronic content comes into picture because the electronic copy can be easily duplicated and distributed. It is important to restrict the access and thus licensing the information. Licensing is for providing access to the bona fide users of the library as libraries are no longer purchasing the journals. For subscribing to electronic journals, librarian has to send a request to the publishers or aggregators for online access by providing certain information such as name and place of the institution. The library has to enter a license agreement on the behalf of its users. A license is a contract between the publisher and the library, for the agreeable terms related to the electronic journals. This agreement includes various terms and

conditions such as restrictions on the use, copyright, warranties etc. Librarians must negotiate various terms and conditions mentioned in the contract and clearly understand their implications. Also decision must be taken on whether to access for restricted or unlimited number of users. Then the librarian has to sign up the site license agreement by sending registration form to the publishers. Some publishers accept online registration, whereas other insists on agreement in print form duly signed by the librarian. The whole process of signing the agreement and getting the site license, gives users the rights to access the electronic journals. Thus receiving the contents of electronic journal includes processes like registration, activation and authentication. Before the expiry of the agreement, the institutions concerned should renew their subscription to all the publications so that an uninterrupted access to the online version of the journals can be made available to the library users.

The licensing processes are complex; publishers transmit this information to libraries in a variety of paper and electronic formats, which should be studied thoroughly before entering into any contract. Hatua and Geetha (2004) consolidated some points to keep in mind while making licensing agreements:

- No. of users who can concurrently access the resources
- Availability of off-site access in addition to library on-site access.
- Manner by which off-site will be provide, i.e. method of authentication (confirming user identity) and authorization (matching user role with resources permissions)
- Ability to access information purchase if a subscription is suspended.
- Accumulation and dissemination of uses statistics.

ACCESS MANAGEMENT OF ELECTRONIC JOURNALS

Providing seamless access to electronic journals has always been the dream of librarians and involves various modalities even after budget allocation, selection of a particular title and site licensing. The steps include correspondence with the service providers like publisher, aggregator or consortium to get the access activated by any feasible method.

Earlier the publisher of electronic journals send the contents in the form of CD to various libraries, which were further cached in the local server for providing web-based access to full text articles to various users. In addition, there were times when the data files were copied directly from one computer to another thorough the TCP/IP protocols. With the developments of the Internet as a powerful medium of communication, the electronic journals were sent either through list serve or as an attachment via e-mail. But now as the web technology is advancing, websites and weblogs have emerged as the favorite medium of almost all the publishers for providing access to electronic journals. In spite of so many ways to provide access to electronic journals, majority of the libraries do not own the electronic journals that they subscribe to rather most of the electronic journals are mounted on remote servers in the form of websites or mirror sites. In a very rare case, publisher set up special sites at subscribing institutions.

Modes of Access:

Access to electronic journals is provided using a wide variety of access mediums to meet the users' needs. Currently, various access methods are available such as Internet Protocol address activation or by password or using proxy server or VPN Software.

- **IP Activation:** Publishers generally provide access to electronic journals by activating

Internet Protocol (IP) address of the users' computer. The range of permitted IP addresses for the institution's site is conveyed to publisher for activation. It is always beneficial for the libraries to get activated only the static IP addresses. Any changes in the IP address should be notified to the publisher from time to time to avoid unauthorized access to electronic journals by unknown users and to provide seamless access to its own users. This type of access is very common and more convenient for most of the users. In this case users don't have to obtain and remember a password but the problem associated with IP address activation is that the access will be limited to users at the institution level only. It is not possible for the users to access the electronic journals beyond the limitations of the campus and they are deprived of 24x7x365 access as usually conceived.

- **Password Access:** Password access gets over this problem, but sometimes there is possibility of unauthorized use of passwords. Therefore, some mechanism for user verification must be evolved so as to give the passwords only to the authorized users. Sometimes the login and password is provided to the semester students for one session and the password has to be changed for the new entrants. A number of software are used all over the world to facilitate remote access to the user.
- **Proxy Servers:** The technique being developed to solve the problems associated with the both the above methods, is to set up a gateway of proxy server. In this type of access, a unique user logon ID and password is given to users to access all the electronic journals. The access is provided through a temporary IP address and a single username is sufficient for accessing many online resources. This process also solves the problem of remote access. Another advantage of proxy servers is that the later will also keep a copy of the article downloaded ('cache' it) and will promptly fetches it if some other user requests it afterwards.

- **VPN Software (Virtual Private Networks):** By installing VPN software at users' machine, the institute's server temporarily assigns an institutional IP address to that machine which is then recognized as legitimate by the publishers website. But this kind of access is regulated by the provisions made in the license agreements only (Funk, 2003).

Delivering Access

Dissemination of acquired/accessible electronic journals is must for proper information retrieval. The users must be made well-versed with the available electronic journals and it may be done through different mechanism such as the library catalogue, library WebPages or by using commercially available electronic journal management software. To create a suitable user interface for dissemination of electronic journals is crucial prerequisite. Libraries may plan to present them either through online catalogues or through library web pages.

- **Library catalogue:** Library catalogues are primary means of displaying a library's collection. These act as a tool to provide comprehensive search capabilities with controlled subject vocabulary. Present generation libraries are available online to their users. Libraries can make electronic journals available to their users through OPAC. Classification and cataloguing are the twin tools to process the acquired electronic journals. For the purpose of their insertion into OPAC, electronic journals should be classified according to their subject coverage and then the entry is done in OPAC. Presently cataloguing module of most of the integrated library management software are capable of linking the URL of electronic journal with the bibliographic record. When journal URL is added in the electronic catalogue, it is possible for a user to get connected to an electronic journal directly through the catalogue. Su (1997) described

that library catalogues should provide equal access to traditional print serials and electronic serials in one integrated system. So, users do not have to make the same search in multiple systems. Catalogue records also provide content information which can help users to evaluate the resources before accessing, whereas indexing tools find a match and provide access only. Drawback of online catalogue is that many users like to browse electronic journals by titles, without having to do a title search in the catalogue every time.

- **Library WebPages:** An alternative to cataloguing include – web lists, context-sensitive linking and federated searching. Library web pages are special pages providing title browse list of acquired electronic journals along with their links.

The portal technology has enabled libraries to provide the user with such an interface from where information of high relevance can be accessed with ease. Thus website is providing a proactive, user-oriented and service-oriented medium for presentation of electronic journals. The library's website plays an important role in promoting and maximizing access to electronic journals. It is very easy for user to have access to all the electronic journals if library is consolidating their access on a single platform which is website. Electronic journals can be listed by subject disciplines, publishers wise etc.

Generally the links to electronic journals are provided on the library's web site in the form of A-Z (alphabetical) list. But in my view, it is always logical to organize electronic journals by classifying them in subject or keyword-specific web pages as lengthy alphabetical listing of journals may lead to chaos and this will mar the very purpose of quick and efficient retrieval of information. Subject wise listings of electronic journals on webpage always add to easier browsing. Electronic journals can be listed by subject disciplines, publishers wise etc.

The advantage of library web pages over the search engines is that

- These provide linked accessed to acquired full-text electronic journals only.
 - These pages are easy to navigate because of then standard format.
 - These pages can help statistics for electronic journals use studies.
- **Electronic Journal Management Systems:** Professionally developed journal management systems are quite helpful, as this management system does the work of providing links and customized journal titles list of the database. Electronic journals keep tract of titles available both in free collections or publishers' site. This also helps in identifying the holdings of the library.

Thus primary means of providing access to these journals is by creating records for them in the library catalogue and providing links from the library's website.

PROMOTION OF ELECTRONIC JOURNALS

Promotion means any activity which is done to foster awareness about the electronic journals and educate users the skills needed to use electronic journals. As electronic journals are developing as a new information platform, its promotional activities require something more than just notifications. Keeping users informed of the electronic journal is a big challenge. When a sophisticated service in the form of electronic journals is introduced, promotion is the only factor which determines the effective use of the service. Traditional promotional activities include publicity through material like brochures, awareness programmes, presentations at seminars and conferences etc. In the digital era, promotional activities may take the form of announcements on the website, creating links to the library web pages from the institutional home pages, electronic training modules etc. There is a great need to organize periodic presentations by the library staff at the doorsteps of the users. This will help

the users to know the existence of electronic journals for their better and effective utilization. Activities like organization of staff-users meet, specialized presentations by electronic journals vendors, presentation by experts, presentation by the librarian, e-announcements should be the integral component of dissemination schema. Other activities include specialized presentations by electronic journals vendors, presentation by subject experts, and presentation by the librarians. E-announcements in the form of global e-mails or e-notice boards should be the integral component of promotional schema. E-mails can be sent to users to keep them aware of added facilities or added titles or any kind of changes etc. The concept is that user must be aware of the new format in which the information is available.

CONCLUSION

Library is a pivot of support for all the information activities of an institution. However, contemporary libraries are witnessing a shifting of paradigm from print to electronic journals followed by contraction of expenses for print journals. This paradigm shift is having tremendous impact upon the management activities of libraries and the librarians are to confront with complex sets of challenges. Nisonger (1996) observed that “planning for electronic journals is like shooting a moving target”. But with dedication emerging challenges can be transformed to opportunities for the expansion of electronic journals. The entire process of managing electronic journals can be a learning one. Coherent management activities related to acquisition and access of electronic journals is the demand of the hour. Presently, it is almost obligatory for the librarians to plan a trouble-free access to electronic journals so that the users can find what they want with ease.

REFERENCES

1. Ashcroft, L. and Langdon, C. 2002. "Issues in developing, managing and marketing electronic journals collections". *Collection Building*, 21(4): 147-154.
2. Bonorino, A.G. and Molteni, V.E. 2007. "Electronic journals collections in Argentine private academic libraries". *The Electronic Library*, 25(1): 65-79.
3. Frazier, K. 2001. "The Librarians' Dilemma: Contemplating the Costs of the Big Deal". *D-Lib Magazine*, 7(3). Accessed March 31, 2009.
<http://www.dlib.org/dlib/march01/frazier/03frazier.html>
4. Funk, M. 2003. "E-Journals: Some Practical Issues". Accessed February 2, 2009.
<http://library.med.cornell.edu/about/staff/mark/BQSI.doc>
5. Gabriel, J.A. 1998. "Managing and coping with electronic serials: a report from the ACRL New England Chapter Serials Interest Group's Fall 1996 program". *The Bottom Line: Managing Library Finances*, 11(1):14-17.
6. Harrod's Librarians' Glossary and Reference Book. Accessed January 18, 2010.
<http://lisdpt.community.officelive.com/Documents/HarrodLibrariansGlossary.pdf>
7. Harter, S.P. and Kim, H. J. 1996. "Electronic Journals and scholarly communications: a citation and reference study". *Information Research*. Accessed October 15, 2008.
<http://informationr.net/ir/2-1/paper9a.html>
8. Hatua, S.R. and Geetha. 2004. "Aggregator: a rich and economic source of E-Journals". *IASLIC Bulletin*, 49(2): 111-19.
9. Lancaster, F.W. 1995. "The Evolution of Electronic Publishing". *Library Trends*, 43(4): 518-527.
10. Nisonger, T. E. 1996. "Collection management issues for electronic journals". *IFLA Journal*, 22: 233-239.