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ELECTRONIC PUBLISHING AND ACCESS TO SCIENTIFIC JOURNALS: THE ROLE OF THE LIBRARY AND THE LIBRARIAN

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Abstract :Use of electronic information is increasing day by day. Information available on internet is one example. E-journals have become indispensable these days. They are the vehicle of the nascent thought, which move faster with free flowing Internet. In this article, an attempt has been made to highlight the status of Electronic Publishing (EP), particularly in terms of sharing new ideas. Advantages as well as disadvantages of EP and electronic access to scientific journals are discussed. An attempt has also been made to highlight the role of the library and the librarian in the present electronic information scenario.

Since the advent of computers and especially of personal computers, the publishing industry has faced a dynamic change. Computer and communication technologies have challenged the primary choice of print as the publishing medium of choice and have opened up new outlets for publishers.

Electronic publishing can be defined as the publication process where the manuscripts are submitted in electronic format edited and printed even distributed to users by employing computers and telecommunication. In the most conventional interception, computer and related devices are used for economy, speed and convenience in producing a printed document, and the most sophisticated interception the full capabilities of electronic media including text, graphs, motion pictures, sound and interactive features are exploited in the creation of a completely new form of applications, which is accessible electronically, transmitted and stored electronically. In general, the fusion of computers and communication technologies with publishing can be termed as electronic publishing. The information in electronic form is distributed to potential user either in stand-alone formats such as CD ROM's and Diskettes or on networks like internet and local area network. Electronic products may include text, graphics, audio, video, numeric, and textual databases, reference sources such as Encyclopedias, Directories, and computer programs.

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Electronic publishing is the dissemination of information in electronic form and its distribution to potential users either on electronic networks such as internet and local area network or in stand-alone format such as CD ROMs and Diskettes. The information so disseminated is intended for the user to read, print and download for later use, within the limit imposed by copyright laws, including incorporation of selected information in to other electronic documents.

The products of electronic publishing are seen everywhere. These include indexing, abstracting and full text databases. Computerized library catalogues (also referred to as online public access catalogues or OPAC), national and regional union catalogues of library collection such as OCLS (On Line Computer Library Center, Inc), digital libraries, encyclopedias, dictionaries, thesauri, directories, bibliographies and other reference sources, refereed and non refereed electronic journals and newsletters, multimedia sites such as museum and news sources which display graphic, audio, video and textual information. The vastness and diversity of these sources is mind-boggling and we are just witnessing the unfolding of a major technological revolution. Most of such resources are readily accessible to users who have access to internet.

Electronic publishing is the culmination of a number of trends that have been emerging for the last four decades. First is the rapid development and wide spread use of computer technology, especially the advent of microcomputers and word processing and typesetting software which brought desktop publishing to millions of people. The second trend is the growth of computer network, which resulted in internet-the global network of networks and opening of Internet to commercial enterprisers and citizens. The third trend is the merging of computer and telecommunication technologies, which, with the help of microcomputers, telephone lines, modems and fiber optic network have converted educational institutions, businesses, homes to information centers and electronic publishing houses. The fourth trend is the development of information industry that demonstrated the feasibility and advantages of electronic information for managing library functions and serving library users.

By the end of 1980,s, these trends converged and the explosive phenomenon of electronic publishing started taking shape. The dust has not settled yet but, it is already evident that scholarly communication, the publishing industry and library and information centers will be affected irrevocably.

The traditional print based publishing industry, which developed over hundreds of years, served scholars in furthering scholarly communication, libraries in preserving and disseminating scholarly communication and publishers in obtaining reasonable

returns on their investment. Scholars subsidized by educational institution, state and federal government and research supporting foundations, created the information, publishers evaluated, published and marketed that information and library acquired, catalogued, stored, preserved and helped in disseminating it.

Electronic publishing is likely to upset this neat picture. All the players-scholars, publishers and libraries will be affected by the electronic publishing revolution.

Scholarly print journals are fairly consistent in form and content. In contrast, scholarly electronic journals on the web exhibit a great deal of variability in all aspects from access mode to content to what the user can do with the material. It is often difficult to tell what sections of a print journal are available in the electronic form. New Journals that have attempted to truly change the nature of the journal are far fewer in number than the print mimics and show even more variation. How a journal is ordered, how access is controlled, and what services the publisher's supply also varies.

Scholarly electronic journals currently or will soon include the following:

Print mimic: replica of a print journal with all the same sections, issue and page numbers and often including a picture of the cover. The information can be downloaded or printed but no further manipulated in nay way. The majority of currently available commercial electronic journals are in this form.

Selected sections: Not all sections of the print journal are available although the electronic journal is considered a full text product. Examples are journals from the American Chemical Society, which only include research articles and exclude book reviews and news reports.

Enhancement to the articles: Text that is not in the print version, along with the print article, an example is Science *Online.*

Supporting materials: Tables, graphs and data that are not in the print version of the articles. Some of this has been traditionally issued on microfiche by society publishers such as the Geological Society of America, and American Chemical Society.

Individual Articles: Article by article publishing instead of journals issue by issue publishing.

Brief Extracts: table of contents and abstracts only in the web version with full article available later on CD ROM as an archive, such as the Geological Society of America Provides.

Publishers in an Electronic World

It is hard to predict what long-term effects the WWW will have on existing publishers. Their role in managing the peer review process and collecting papers in to reasonably coherent, stable journals has been of great benefit in the paper publishing, and it seems likely that it will be important in electronic publishing. Weather new forms of hypertext publishing, referred or not, will displace any of the more traditional forms of publication remains to be seen, but it is certainly possible, as is the possibility that traditional publishers can broaden their offerings and actually expand their contributions to scholarly knowledge. Few of the probable scenarios however have libraries as center to the process of transferring knowledge in the future as they are at present.

What is clear is that publishers will not be eager to accept substantially less compensation for their materials than they do now. As a matter of fact, the need to publish articles in both electronic and paper forms is increasing their costs, with lower printing costs being the only real possibility for immediate cost reductions

Electronic Access is Different

Electronic publication is a transforming technology to libraries. It fundamentally changes the availability of publications. Electronic material is on the web. There is no immediate need or at least little possibility of actually collecting it. Electronic access does not just make it cheaper or easier for libraries to provide material to patrons, it make the librarians nearly irrelevant to the access. Previous technological changes in libraries have changed the tools available to work with library collections. Electronic publishing changes the substance of what libraries deal with. Electronic access and it by passes much of what is central to the library's role today.

Libraries are an integral part of the publishing process of today. They are both a major source (In many cases the major source) of the revenue that supports scholarly publications as well as the repository that makes the material available in to the indefinite future. Librarians like to think of access to their collections in terms of hundreds of years. This is in stark contrast to the typical computer systems administrator who seldom can plan even a decade ahead, because the rapid and unpredictable changes in hardware and software make such planning impossible. Centralization of electronic publications places a long term archiving function on computer services, which are ill equipped to handle them. It is not that long-term storage of computerized data is impossible but that computers are so recent that few databases have been maintained much longer than 20 years and the complexities of the formats needed for publishing quality documents make their storage more difficult than the relatively

simple databases created in earlier decades.

The publishers have relied on libraries to preserve the paper versions of their products but, without economic incentive, it seems unlikely that libraries will reliably undertake the preservation of the electronic versions. Centralized services, such as OCLC's are certainly capable of such preservation but collection into only a few such sites will be a much more delicate system than the present one of paper and libraries. Solutions seem far off preservation problems of digital information but they are getting some attention.

The Role of Library

The library as a building will not go away in the foreseeable future, there will still be plenty of paper documents to store in libraries for many years to come, but the library's role as the principle collector of documents used by advanced students and researchers will disappear. As an institution, the library has been created mainly to manage a large volume of paper, most of which will no longer be printed. We must then ask as to what does that mean in the context of the mission of the library"?

Contracting for services: many of the electronic services that are to replace the current papers services will not be free. They will need to be identified, organized and contracted for subscription to the services seems like the most viable method of payment, since subscription provide a predictable cost that libraries can budget for as well as reliable revenue stream for the producer. All of this is an obvious and useful role for libraries.

Instruction: Most services will be designed to be used by the patrons themselves, rather than through intermediaries such as librarians but that does not mean that locating and using them all is going to be easy. Problems inherent in the location and use of information will always require professional expertise to deal with. The instructional role librarians have traditionally filled in the use of collections should transfer fairly easily into instruction about electronic services. This may be more challenging than before, given the volatility of electronic services the librarians may be hard-pressed to keep up with the continual changes we can expect.

Similarly, these are issues related to the following.

Hardware and software

Space

Local collections

The Role of the Librarians

It is tempting to define a librarian as someone who works in a library but that definition is much too narrow. The tasks librarians perform in identifying and organizing materials are still needed for electronically publishing materials. And may be appreciated more. Since the alternative is also more visibly obvious. It is feared that librarian may gradually disappear as librarians are actually associated with a physical library but the needs will still be there.

Forms for Electronic Publishing

Publications produced in electronic forms are available in the following formats:

1 Stand alone, discrete products (like magnetic discs, CD ROM)

2 Electronic Bulletin boards

3 Online interactive services (available on network)

Advantages of Electronic Publishing

In electronic publishing the data can be maintained up to date so that the buyers will be able to purchase the latest version of publications (For ex.- Encyclopedias, Dictionaries).This enables "on demand Publishing" and allows retrospective searching and SDI. The individual subscription can be provided with only those documents, which match their profiles and can be charged accordingly. An important factor is that the library and information centers need not" buy publications" to access the information in it". They have online access to the electronic publications and download or print the required materials. The electronic publications provide aids for connectivity, audio visualization, customizability, creation and revision of documents, interactivity and rapid information retrieval.

The most important advantage of electronic journals over the conventional journals is the saving in the turn around time. i.e. the time log in submissions, referring, revision, editing, composing, printing, binding, and forwarding eliminated by using computer and communication networks. This enhances timely publications and is suitable to the letters type journals where rapid communication is of utmost importance. The electronic version also offers Boolean search of the full text to browse and read only the selected items.

Further when computer and communication facilities are available the reader need not to go the library and information centre and need not to have to shift through unwanted materials as in conventional journals to retrieve the relevant papers.

Electronic publications may help in overcoming the restrictions on the length of the paper imposed by many scholar journals.

Disadvantages

Some of the problems of electronic publications include high initial cost to the publishers as well as LICs who have to invest before benefits are expected. The non-compatibility of the hardware (and hence the market potential) due to the absence of common standards and the usage of different retrieval software by different publishers. The acceptance of electronic journals depends up on the user-friendly software. As prerequisite, electronic publications, necessitate the availability of a computer and communications network to the subscribers. The gap between developed and developing countries (those who can access and those who cannot) makes the electronic publications an elitist technology.

Electronic journals may take some times to percolate down to the reader level mainly due to the problem of displaying page images conveniently on a computer screen. For an entire page to be accommodated the size of the images has to be reduced and the low resolution makes it difficult to read.

Ease of use i.e. reading at the convenient time and place is not possible with electronic publications. As there are no restrictions on the length of the papers and of course no page charges, the quality of papers may be poor if lengthy papers are accepted. Other disadvantages include the psychological feeling that researchers generally read more outside their work place. Thus, requiring portable reading materials through this problem can be solved by taking a printout of the required articles.

One major drawback of the electronic journal at present is their delayed release. Though there are many publications, which are available only in electronic medium. In many instances, when the publication is issued in both printed and electronic forms, the electronic version is released after a gap of three to four weeks. Others problem include the necessity of training for the subscriber and the reader and multiple copying license/charges unlike their printed counterparts. Electronic journals are not open to all but somewhat restricted.

Not withstanding these drawbacks electronic journals will become all pervasive as their printed counterparts, at least in some subjects fields. The day may not be too far when a researchers is able to read electronic journals at convenient place and time using laptops (to read in journey, leisure etc) and computer at home.

Future Trends

The printed book and journal will undoubtedly have a place, but the appeal of new and more efficient information system relying on computers, optical storage and telecommunications will become more evident and acceptable. The new media (electronic media) systems rely on the integration of information published in other forms such as text, graphics, sounds, animation, moving images etc to create new value-added publications in to alternative format to allow a wider group of user access to and benefit from the source material. The next few years will see a decline in the printed subscription. Before increased revenues from electronic or optical publications can receive sufficient support, as the same publishing infrastructure now, a period of low profitably and margins will take place. Only a few traditional publishers will take on the new challenges. Such a structural change in the industry has important repercussions on the balance between print and new media. It is suggested that there is a great need on our part to restructure our libraries in terms of physical layout, building infrastructure that is suitable for the future computerization and user training. There is great need of training and retaining of our personnel in libraries, which would help the users benefit much from the services of electronic publishing