PAPERLESS SOCIETY: THE VISION OF AN OASIS OR MIRAGE: IMPLICATIONS FOR LIBRARIES AND LIBRARIANS

Keshav Ramesh Dhuri
Librarian
Sant Sohirobanath Ambiye Govt. College of Arts& Commerce, Pernem
Goa
Samir Rama Fatte
Librarian
Government College of Arts Science & Commerce Sanquelim Goa

Abstract

It's unlikely that we Information Scientist will ever fully get rid from dependence of paper. The research paper discuss the proliferation of electronic resources, digital libraries, Internet technology, ICT etc., which adds to the complexity of organizing these new types of information. By combining the various printed/ nonprinted, manuscripts, maps and all other types of documents into one electronic repository, information becomes easier to access. Thus saving of our Time, Money and Space is rule "a paperless society." By making responsible choices for saving environment and joining hands together we would certainly be able to fulfill our vision of "Paper less Society".

Keywords : ***Paperless, Library, Printed, Digital, Electronic resources, Information, Hybrid***.



1. Introduction :

Businesses and individuals alike may wonder what society would be like in a paperless environment. What papers are we replacing? How can we replace paper? How this will affect society? Are there any ethical issues involved? Can documents never be replaced? What will be future of our libraries? The librarians have been dealing with the technological changes of the future since the days of papyrus. Using the information available we have gleaned from our research, we will attempt to answer these questions in the following paragraphs. Having heard the term "paperless society" one may question what this term actually defines? F. W. Lancaster (1978) predicted that electronic information systems would replace paper-based systems in the sciences by the year 2000. The role of the library and librarian would radically change. To what extent is the prediction valid for non-scientific disciplines? What are the motivating factors for such a claim? What is the status of this prediction? To what extent would the accuracy of this prediction threaten the future of library operating budgets and building programs?

How is the electronic age affecting library and information services on college and university campuses?

When using the term paperless society, we are referring to paper notes, letters, correspondence, invoices or reports Monographs, articles, journals, Research works, Books Documents etc. physically written or typed on paper and printed out on a hard copy. Paper has been around for centuries and it seems highly unlikely that society, in any part of the world, could ever function completely without paper. Yet we continue to hear the term "paperless society" in and around our daily activities. Here are some of our findings surrounding the origin, evolution and technological changes occurring in and around the paperless society. Let us begin with a brief review of where and when paper was invented. The oldest known paper

was used for prayer and evolved in China as early as 200 B.C. This paper was made from recycled fishnets, bamboo and hemp plant. Gutenberg invented moveable metal type 550 years ago; it transformed society for centuries to come. Publications are at the very heart of scholarship. Faculty requires publications as sources for research and as vehicles for communicating results. Migration to electronic publication will have substantial impact on faculty and scholarship. Increased use of electronic technology will also affect college and university publication policy, infrastructure, and organization. Understanding the trend toward electronic publications is therefore important not only for librarians, but for faculty and administrators as well.

2. Literature Review :

Gupta Sonal (2015) mentioned in the research paper that thousandsand thousands of trees are been cut all over the globe just to satisfy humans never ending greed. This paper focuses on the need of paperless society and highlights the potential of digital libraries, internet technology, networking, ICT for solving natural environment issues to some extent. In the currentsituation degradation has emerged as the main global concern for our survival. The situation is getting shocking day-by-day. That's the reason going for Paperless Society is the need of hour forprotection of natural environment. This paper is an attempt to draw kind attention towards relevance of Paperless Society and highlights the potential of Computers, Information Technology&Networking for resolving natural environment issues to some extent.

Dhumne Kishor (2017) in his paper titled "Paperless Society in Digital Era" mentioned that Paperless society means paper communication is replaced by electronic communication and storage. This conceptwas originated by Frederick Wilfrid Lancaster in 1978. Furthermore, libraries would no longer be needed to handle printed documents. Lancaster also



mentioned that both computers and libraries will not always give us the information that other people and living life will.

3. What are the Short Comings of Paper Medium in Libraries ?

There are a number of factors, which motivate the use of electronic media. The amount of scientific literature is growing exponentially with a doubling about every 15 years since the advent of the journal in the late 1600's. In 1930, there were 36,000 journal titles, but by 1960, the number of journal titles had grown to 60,000. While the number of journals and articles has increased, the amount of time devoted to studying those articles by a scholar has not increased (Lancaster, 1978). In short, journals target individual researchers poorly. As the amount of information increases, secondary access points such as indexes and abstracts increase in importance. Their volume is growing as well. Subject headings in these indexes are not determined by the researcher and finding relevant citations is time consuming and not always intuitive. It required quite a long period of time. Using a paper index, one could do no better. From the perspective of a Research University, the growth in the literature and the number of titles available has led to soaring budgets. Scholars do not know in advance what literature they will require, and pressure their libraries to purchase all journals, which may be of interest. The periodicals budget has not only grown because of the number of subscriptions, but also because the average growth in the subscription price of a journal has historically exceeded the inflation rate by a factor of 4 to 5. Another problem with the current system of publication is delayed timeliness (Lancaster, 1978). By the early 1970's, the time from submission to publication averaged nearly 18 months. Delays in publication could cause unnecessary duplication of research by others who could otherwise avoid performing work, which may have been already completed. The situation is to the point where no self-respecting scholar depends on journal publication as a primary means of staying current. Preprints and

working papers have become a way of life, and formal journal publication is more for posterity and tenure committees than communicating with colleagues.

4. Is Electronic Technology an Answer ?

How well does the "Electronic Technology" address the problems cited in the earlier section? This section will show that electronic technology can lower costs while increasing the utility of publications. Researchers may more easily find source material. The journals themselves are more timely and accessible. The necessary desktop technology empowers faculty in other areas, as well. Cost and Selectivity access to only articles of interest, instead of voluminous paper journals, which are targeted poorly toward particular scholarly interests, should lead to reduced costs at individual institutions. The frequent use of technology in production, from the scholar, to the ultimate "publication," is another possible source of savings. Although the fixed costs of publication are similar for electronic and paper journals, there are fewer variable costs in electronic publications such as paper and postage. Libraries have always been proponents of sharing to reduce costs. The OCLC system is an example of libraries sharing their cataloging information to reduce costs for all. The wide availability of specialized university electronic collections over a national network should greatly facilitate sharing. University electronic publishing and common university interests will likely lead to a different notion of copyright that promotes the distribution of research at reduced costs.

5. Ease of Searching :

Few would argue that electronic indexes and databases are easier to search than their paper counterparts. Not only are traditional search terms, such as title, author, and Library of Congress subject classification available, but often any word or term in the entire machine readable record can be used in Boolean combinations for searching. As the content of the machine



readable records expands to accommodate tables of contents, abstracts, and even full text of articles, searching will facilitate more precise results than is possible using today's paper indexes. Furthermore, with electronic profiling of scholar interest, and automatic retrieval of sources, active searching may be less frequent thereby increasing researcher productivity.

5.1 Timeliness

The use of technology will shorten the time to publication from research. There is an opportunity to publicize results informally, through electronic bulletin boards. This will decrease duplication of effort. Also, there will be less time involved in physical transfer of paper media from scholar to referee to scholar. Scholars will find it easier to collaborate. Finally, there is little delay due to physical production and distribution of paper journals.

5.2 Accessibility

Properly equipped scholars have great accessibility to information in this model. One of the virtues of magnetic media is that is usable by many at the same time. Also, notice that in this model, the need for physical access to the library is greatly reduced. This does not necessarily mean that libraries will be superfluous,

5.3 Other Improvements

The "Electronic Technology" offers a number of other useful features. The intelligent workstation and high-speed networks could make graphics, sound, and other media available at the desktop, which would otherwise be difficult to obtain. The Laptops and Wi Fi technology along with the Internet gives the total freedom and absolute mobility. The "invisible college" of collaborating scholars described in the literature (Lancaster & Smith, 1978) would be broadened by electronic bulletin boards such as the one described.



6. Technical Feasibility of Paperless Library

Even critics of scenarios generally concede that it is technically feasible. In fact, most of the scenario is technically feasible today. While inflationary pressures on libraries have been increasing, the cost of computing processing power has been decreasing at the rate of 25-30 % per year. Changes have been even more dramatic for personal computers. The result has been proliferation of computing power across the campus for both faculty and students. The number of online databases has increased steadily from one in 1965 (Lancaster, 1978) to more than 15000 in 2004. Commercial databases are available directly to scholars at reduced costs at off peak hours through services like EBSCO, ProQuest, and ABIIInform. OCLC recently introduced a service, First Search, which enables electronic searching directly by library patrons Monographs and journal articles are available on a new OCLC network. Once a source is found at a member location, arrangements can be made for. Interlibrary loan. Journal articles may be transferred by fax. There will be a flat charge for each search. A discounted copy of any encyclopedia - is available for Rs.2000. Notebook computers are quickly assuming the profile of a book. If the prices continue to plunge on CD-ROM and computer equipment, and monitors on notebook computers become more readable with TFT, then CD's could conceivably move out of the reference collection and into the trade-book area. What can result from the merger of publishing and technology, if the right material is chosen, and handled with care and skill" The commercial success of these products will reflect the growing acceptance of digital publications, especially in areas where digital publications are clearly superior: large reference works, multimedia, and interactive applications. Even when faculties prepare publications for traditional media, many of them use word processing equipment. The work is, in theory, ready for electronic distribution. In fact, if the electronic information revolution is going to happen anywhere, colleges and universities

would be a likely place. Many faculties already have the requisite equipment and network connections.

Lancaster (1978) described psychological difficulties; for example, researchers will want to see their name in print in a fine scholarly journal. Researchers not only want to see their own name in print, but evidently so do those making promotion and tenure decisions. So far, electronic journals have not had the prestige of their hard copy counterparts. This has created vicious cycle. The best publications will go to paper journals because they are more likely to "count" for tenure and promotion. Electronic journals are perceived by some to carry articles of secondary quality. These perceptions reinforce the desire of scholars to publish in traditional journals. There will need to be a cultural shift in attitudes before electronic publications will equal the prestige of their paper counterparts. In the meantime, electronic journals will need to have editorial policies as demanding as their paper analogs. Mr. Whereas a page of text might contain a few thousand characters, a page of graphics will require tens of thousands. It may be that fax technology will become more important for document delivery. Fax capability is becoming an inexpensive addition to personal computer equipment. In any event, better compression, faster data communication, and better technical standards will need to be more widespread before graphics is common in electronic journals.

Mr. Lancaster claimed the economics of costly paper publication would provide incentive for electronic publication. There is conflicting information on this. Some say the costs of producing a peer review journal are the same whether electronically published or in the traditional way. This issue is complicated by the fact that many publishers price their journals on their perceived value to the academic community rather than on costs of production. The Internet, the distribution channel for most electronic publications, is a government-subsidized resource; it is unclear what removal

of this subsidy would mean for electronic publications. More experience will be necessary before the cost issues are resolved. More compelling than any of these reasons, however, is that paper systems have a number of very advantageous attributes. Chief among these is its portability. Scientists may have desktop access to electronic information, but they do not always work at their desks. Although portable CD- ROM units are becoming available, they are few in number and literature titles are very limited. It is not clear whether there will ever be a mass market for CD-ROM books, other than reference works. CD-ROM has so much capacity that it is actually overkill for the typical scholarly work Paper also enables one to quickly scan different parts of a lengthy document. Traditional media have several points of access: i.e., tables of contents, chapter headings, and indexes. In fact, it is not technical issues at all, but human factors, which have caused the failure of early experiments with electronic publication. The system failed because i) it was difficult to use; ii) contributors received no external reward for publishing in this medium; and iii) the distribution was limited. Academics have simply opted for more limited use of technology there are other problems with electronic technology including standardization, rapid obsolescence, and eye fatigue. The relative infancy of the computer has resulted in a lack of standardization. Almost no media commonly in use ten years ago for the storage of computer data is commonly in use today. Even if one accepts the ability to transfer digital information stored in one media to a different media, an extra burden and expense is placed on the library for the conversion. Magnetic media and optical media may require controlled environmental conditions for long-term storage. Magnetic and optical media, then, are hardly ideal for archival purposes. Although most critics of the "paperless" approach concede the desirability of some of the attributes favoring electronic systems, such as ease of searching, some question the very assumptions underlying electronic system development. Schuman (1990) examines the assumptions behind the use of advanced technology in libraries, and questions their validity.



For example, she claims there is no information explosion, only a data explosion; the proportion of "quality" information has decreased. In her view, electronic delivery of information services to the home cannot take place when 20 percent of Americans cannot read above the fifth grade level and where home computer penetration is less than 13 per cent. Because of its expense, technology could widen the gap between the information rich and poor A review of the contemporary literature about the promise of microfilm technology should caution us against making sensationalistic claims for any new technology. Microfilm was supposed to lower the cost of publication. There were claims in the 1930's and 1940's that its discovery was as important as the development of the printing press. Vannevar Bush (1945) described a "scholar's workstation" with microfilm as its core technology. But scholars never found the readers very convenient and preferred hard copy, if available. Microfilm has its niche; it is commonly used for preservation and space reduction, but it has not fulfilled the promise of the library literature of the 1930's to 1950's.

7. Issues: Organizational Challenges

The increasing use of technology in higher education has resulted in some organizational challenges. There has been closer cooperation, and in some cases merger, between libraries and Computer centers. The job description of a reference librarian and a computer center user services consultant looks quite similar: help people help themselves using information resource tools. Libraries also have a number of technically oriented functions, for example systems administration, which have analogs in the computer center. However the cultures of the library and the computer center are quite different. Librarianship is a female dominated profession, which requires a professional degree, the M.L.S. Computer organizations are male dominated with less emphasis on formal educational achievement. Woodsworth (1991) reveals some preliminary results of her research,



which show that for functionally equivalent jobs in the library and the computer center, librarians get paid significantly less.

8. Prospects

The trend in higher education is clearly toward increased use of electronic publications, especially in reference works. Both lower costs and increased utility are possible. Academic institutions are quickly developing the capability to deliver a growing number of electronic documents. It is difficult to predict the effects of technology on libraries as we approach the year 2010. In the first applications of the printing press, type was used which imitated the hand lettering of scribes. The first automobiles were designed to look like horseless carriages. As the potential of the new technology was exploited, the link to the old technology was soon forgotten. There were a large number of "secondary effects" such as sub urbanization in the case of the automobile, or the concept of mass education in the case of the printing press. We must keep an open mind and consider a broad context when evaluating the impact of new technology. F. W. Lancaster writes (1985, p. 554)

As far as 1 have been able to tell, however, rejection of electronic publishing is more often than not based on the rather vague feeling that the printed book is an indispensable element in our society and that it. Has been with us too long to be easily displaced. This argument, of course, is complete nonsense. The printed book has lasted for only 500 years, which is a mere dot in the history of human communication, and many of its most common manifestations - the novel and the science journal, for example - have been around for a much shorter time. Some reasons given to me for the preservation of the book have been nothing less than amazing. For example, "1 likes to read on the beach." How long have people been reading on beaches? I would suspect less than a hundred years. Or, I like to read in the bathroom." How long have we had bathrooms, or bathrooms conducive



to reading? There is already evidence that the use of information technology may best lend itself to new information applications. For instance, the Brookhaven database of three-dimensional molecular models is an example of an "interactive" database where the researcher may alter results using private variables. The new media seems to lend itself to shorter, less formal articles. The ideal form of electronic media, whatever it turns out to be, will not be limited by the book's static form (Lancaster, 1985).

Will electronic media replace paper technology completely and relegate the library to a set of disk drives? Probably not. Just as television has not eliminated radio and the microwave oven merely supplements the electric or gas range, so microfilm has not done away with the book and neither will electronic text. Instead there will be expanded opportunities, greater diversity, and a more complex environment. Still, it will be difficult for the academic library to develop its traditional collection, develop its electronic collection, and build buildings to store ever-expanding collections. Something is going to have to give. At the very least, experts agree that it will be more difficult to justify building expansion given the expected increases in the proportion of the electronic collection "FROM THE 1950s to the present, libraries have changed more dramatically and more rapidly than at any other time in their history. The change, of course, has been brought about by the application of computer and telecommunications technologies. Technology has greatly improved all our record-keeping activities and has been highly successful in promoting interlibrary resource sharing. The library without walls is already a reality because many people now can search catalogs that represent the holdings of a library consortium and even, in some cases, charge books out remotely from libraries other than their own, or generate their own photocopy requests to these libraries, the materials being later delivered directly to their offices by courier, mail, or electronic means.



Libraries have been instrumental in putting electronic databases into the hands of their users by acquiring them in CD-ROM form or facilitating network access to sources not physically present in the library. Some libraries have used these resources to provide personalized current awareness services to selected users. The most technologically advanced libraries are devoting more of their attention to remote users, who are provided with electronic support but who never need to make a personal visit to the library"

9. Conclusion

The library of the future is being developed in academe and is progressing rapidly. Increasing financial pressures will accelerate changes. There will be secondary effects on the organization of information services on campus. In future the changes will be extensive, probably more extensive than any of us could guess today, save Mr. Lancaster. Still, the technology will take its place alongside existing forms. It will not displace the book as the printing press replaced the scribe. However, information technology is likely to affect all disciplines. Libraries and librarians, as well as other campus information professionals, must prepare for this new age.



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