

The Best of Times, The Worst of Times: Reflections on A New Era of Electronic Publishing

By Charles W. Bailey, Jr.

Introduction

It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of Light, it was the season of Darkness, it was the spring of hope, it was the winter of despair.

These words, written by Charles Dickens in a *Tale of Two Cities* to describe the mood before the French Revolution, are apt today. For we to are in the midst of another revolution--the electronic publishing revolution. Fortunately, the blood is not flowing on the streets; however, before it is completed, this revolution will have permanently changed scholarly communication.

The Best of Times

It is the best of times. After decades of discussion and effort, electronic publishing is finally beginning to blossom, offering dramatically improved access to research information and the development of entirely new types of scholarly communication.

The Network Level

From my perspective, some of the most interesting and provocative electronic publishing activity is occurring on noncommercial computer networks, such as BITNET and Internet. These interconnected networks span the globe linking millions of users. Scholarly computer conferences have proliferated, covering hundreds of subjects. Network-accessible electronic books, journals, newsletters, pre-prints, special-interest magazines, technical reports, and other documents are becoming increasingly important information resources for scholars. Even the Supreme Court has put its opinions on the network as part of its experimental Project Hermes. These electronic resources are delivered directly to the scholar's workstation via e-mail and file transfers. Lengthy electronic documents are often printed locally and saved for future reading.

There are now about thirty-six electronic journals, eighty electronic newsletters, and seventeen other electronic serial publications on the network. Around fifteen of the journals are refereed. The majority of these publications are free. Unlike the electronic serials on systems like Dialog, these publications are not typically derived from print serials. The number of electronic books on the network is fairly small, but it is growing as public-domain classics are converted to electronic form and as some users dare to publish original works on the network.

Significant problems need to be overcome before these electronic documents rival their print counterparts. However, with future price/performance improvements in printing technology and the development of new information standards, there could be a dramatic leap in the reproduction quality of locally printed electronic documents. For all practical purposes, printed copies of electronic documents made in the future may be indistinguishable from their conventional counterparts. This new model of information dissemination--electronic delivery of information via networks and on-demand printing--holds great promise for transforming the scholarly communication process. Already, experiments with high-speed, high-resolution printers demonstrate that high-quality local printing is feasible, albeit still expensive.

Since information can be delivered rapidly over networks and the electronic format permits a wider variety of information distribution options, network-based electronic resources can be more timely and diverse than conventional publications, which are bound by the economics of the print publication process. They can also explore new types of scholarly communication that would be difficult or impossible to accomplish in print.

For example, Stevan Harnad, editor of the electronic journal *Psycoloquy*, has devised "scholarly skywriting" to combat the inherently slow reaction time of print-based scholarship to new ideas. In scholarly skywriting, authors write brief statements of new ideas or findings, which are rapidly peer-reviewed and published. Other scholars react with brief critiques of the paper, and these critiques are, in turn, peer-reviewed and published. The original author may quickly respond to these critiques. Using this approach, scholars can get significant feedback from their peers in weeks, while promising new ideas are still fresh in their minds.

All of this activity takes place against the backdrop of a network environment that contains an increasing variety of other electronic resources. Using the TELNET command, Internet users can access hundreds of online catalogs, specialized research databases, and other systems. An enormous number of computer programs are available on the network via anonymous FTP. Libraries are using the network to send scanned documents to each other.

Commercial information services, especially document delivery services that fax articles to users, are gradually emerging on the network in spite of its historically noncommercial nature. It is inevitable that commercial information services will coexist on the network with noncommercial ventures.

What is particularly striking about all of this activity is its spontaneous and somewhat anarchic nature. Nobody planned this incredible explosion of activity. The network infrastructure provided fertile ground and a thousand flowers bloomed. The network culture emphasizes cooperation and can-do volunteer effort. This mind-set has produced an incredibly rich, if somewhat chaotic, information environment.

The Institution Level

Of course, the global network is not the only place where exciting things are happening. OPACs, locally mounted databases, CD-ROM LANs, and stand-alone CD-ROM workstations have become commonplace in libraries. Page-image databases are being used to print reproductions of journal articles on demand. Some libraries are providing access to digital audio and graphic image files, and some are making numeric data sets and literary and other textual source files available for analysis. Campus-Wide Information Systems that provide access to diverse information, such as current event listings, course schedules, job openings, and telephone numbers, are increasingly prominent in academic institutions. And, of course, use of commercial database vendor systems like LEXIS has been going on for a number of years.

In one noteworthy project, McGraw-Hill's Primis system is being used at the University of California at San Diego bookstore to permit faculty members to order customized, on-demand textbooks based on electronic documents from McGraw-Hill and other sources.

The Worst of Times

Unfortunately, it is also the worst of times. Libraries are reeling from the impact of escalating materials costs at the same time that they are suffering from sharp budget cuts. Research-oriented libraries are struggling with the sometimes massive job of preserving their crumbling print collections. Libraries are also faced with growing computer technology and technical staff costs in order to support increased access to electronic information.

Libraries are finding that, where commercial publishers are involved, the benefits of electronic information often come with a price--the sacrifice of ownership as license agreements replace outright purchase of information. Publishers can use license agreements to restrict the use of information in ways that were impossible in print. They have only just begun to explore how electronic information can be profitably packaged and sold, and we must monitor these developments carefully.

Faced with financial difficulties, libraries are turning to increased resource sharing and "just in time" information delivery models. Ironically, the less that is bought, the less there is to share. Publishers have reacted to increased interlibrary loan and document delivery services by attacking these activities as potential copyright law violations. Worse, it is very uncertain that anyone will preserve information if libraries increasingly relinquish this burdensome duty. Nor is it likely that anyone else will assume the equally onerous job of providing subsidized access to information if libraries decide that a MasterCard is better than a library card for access to some types of information.

The network is nurturing promising new types of noncommercial scholarly publishing activity that may improve the situation; however, this progress is founded upon the fact that many users enjoy subsidized access to the network. If network economics change and use fees become prevalent, future innovation may be stifled.

A Call for Action

The best of times or the worst of times? I cannot pretend to be brimming with optimism, for I think that we face serious problems; however, I feel there is little to be gained from despair. This is a time for hope, serious reflection, and, most of all, action. I do not believe that we can count on any of the other participants in the scholarly communication process to salvage it. Libraries must lead the way.

So, what can you do to help shape the future of scholarly communication? Although there are many answers to this complex question, I'll leave you with two brief thoughts.

First, help reform the existing scholarly publishing system. In spite of growing problems, publishers are not the enemy, and they will continue to play a central role in information dissemination in the future. However, we must recognize that libraries and publishers have different motives. If we want information to be easily accessible, reasonably priced, and permanently archived, we will need to envision and create a future electronic publishing system where profit and social good are better balanced. We must also find ways to make social conscience profitable for publishers.

Libraries have considerable purchasing power. In 1991, the Book Industry Study Group estimates that they spent \$2.6 billion on library materials. It's time to use that collective purchasing power to reshape commercial publishing. The Aqueduct Action Group's fourteen-point program for serials, which is described in the May 15th, 1992 issue of *Library Journal*, is a good example of the type of programs that we must devise.

Copyright law is the cornerstone of the existing system, and we must critically examine its impact on the publishing system and advocate change where it is needed to facilitate the free flow of scholarly information. Let me briefly highlight this issue with a quote from Joe Hewitt's review of *The Nature of Copyright: A Law of Users' Rights*, which appears in the July 1992 issue of *College and Research Libraries*:

The mission of libraries is to provide access to information for the public, in large part through the use of copyrighted works. For that reason copyright must be considered as fundamental to the function of libraries as it is to that of publishers. Librarians have, quite naturally, resisted overzealous restrictions on use. This resistance has been disorganized, inconsistent, and sometimes timid, but its most glaring weakness is the failure to develop a fully coherent and systematic interpretation of copyright as a law of users' rights. If producers' interests are to be prevented from controlling access to information even more tightly in the future, librarians and others concerned for the promotion of learning and the

public right to information must work to promote a more balanced view of copyright, one that recognizes the legitimate interests and legal rights of users.

Another step that we can take to reform the existing system is to educate our users, especially those who are authors and editors, about the impact that their activities have on the scholarly communication process.

Second, help reinvent scholarly publishing. I recommend becoming active in the network. If possible, get a computer account on an Internet node, so that you have FTP and TELNET access. The Coalition for Networked Information is the key group that is lobbying for a positive network future. Have your library join this organization and become involved in it. Encourage your library to collect network-based electronic journals, make them locally available, and promote their use. Communicate your ideas for improving electronic journals to the editors of those publications. A few libraries have projects that help support faculty-run electronic journals, and more activity of this type is needed to foster continued innovation. Urge your professional associations to become involved in network-based electronic publishing and to investigate other ways of providing low-cost access to information. If you are more adventurous, start your own computer conference, publish an electronic journal, or distribute other electronic documents. It is also important to fight to broaden access to the network and to keep it affordable.

Conclusion

In conclusion, I believe that we are in a significant transition period. While print will be with us for the foreseeable future, a new electronic publishing system is evolving that will eventually replace the current system. We need to critically evaluate electronic publishing developments and take appropriate action to ensure that the age of electronic information access is also the age of equitable information access.

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