

The Impact of Electronic Publishing on the Academic Community

Session 5: Digital libraries and archiving of electronic information

The future has arrived

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Debates proposing the abandonment of print journals in favour of electronic formats began in the mid-1970s and still continue today. These discussions have typically generated much heat, as they have at this conference, but seemed to arrive at stalemate. While there have been efforts to make the transition to electronic publishing the problem has been one of achieving a critical mass. There have never been enough titles, particularly established ones, for the electronic medium to be considered a legitimate medium by the academic community.

This stalemate may now be over since an increasing number of journals are about to be published electronically by traditional publishing houses and professional associations. While it is difficult to gauge how successful these new entries will become, this move will significantly alter the publishing landscape.

It always takes time for a journal, either in print or electronic, to gain status within a discipline, to find its place, as it will, on the academic food chain. Until the late 1980s there were only limited avenues that an electronic journal could take, and that in turn limited the potential audience. The computer network BITNET provided an electronic environment for exclusively electronic journals which could be developed outside of traditional publishing houses. Some of these journals have successfully grown into respected journals. Others, however, fell by the wayside.

The traditional publishers have been hesitant to enter the electronic journal market. Most of the efforts have come in the form of 'projects' and typically have made information already published in print available online. One of the earliest large-scale projects was Project Tulip

which was begun by Elsevier Science in 1991 and terminated in 1995. Another project, JSTOR, was funded by the Mellon Foundation and in 1995 became self-sufficient.

Only a few publishers have mounted exclusively electronic journal titles. The earliest was the *Online Journal of Current Clinical Trials* started in 1992 by the American Association for the Advancement of Science Press and now published by Chapman and Hall. Mounting a single journal is particularly problematic because most institutions are not willing to adapt their delivery infrastructure for one, or even a dozen, unique journal titles. Thus, even with the Internet, there remains the problem of achieving the needed mass.

But the days of a lonely single electronic journal on a Website seem to be passing. The emerging genre of publishing is maturing as the traditional publishers bring their titles to the Web. They bring with them not only their content, but their status. Colleges and universities will not be able to ignore this effort because the clientele, students and faculty, will demand such access. How can we argue with them, particularly if the article is in portable document format (PDF), which essentially makes an electronic photocopy of the article. To the user the information looks the same, so it is the same. And sending it to the printer is just as easy, if not easier, than taking a print journal to the photocopier.

Still, even the traditional publishers are going to face some of the same problems, at least in the short term, as they did in print. Most publishers are offering searching by table of contents. For example, John Wiley and Sons, the publisher of the *Journal of the American Society for Information Science (JASIS)* is planning to load the table of contents of all issues of the journal. *JASIS* is one of over 400 titles published by John Wiley. There is, however, a problem. Searching by table of contents is a very problematic search mechanism providing little in the way of representation to capture. Even if a publisher includes the author-written abstract this is still a problematic means of retrieval since authors' ability to write an abstract can be safely characterized as uneven.

And where will the indexing and abstracting services fall into this grand scheme of things, if they have a future at all? If people can search and find information without the tools like ERIC or INSPEC, will there be much of a need for such services when index, abstract and a broad cross-section of information are made available under one central title? The current model of having to go from site to site in order to search will change as soon as someone invents a search robot that permits going from publisher's site to publisher's site searching for the materials available.

Some sites, such as the OCLC's (Online Computer Library Center) FirstSearch Electronic Collections Online (OFECO), have stated that they will be using descriptors, but fail to identify the controlled vocabulary being used. Alternatively, the Association of Computer Machine's Digital Library (ACMDL) plans to provide categories and subject descriptors based upon the ACM Computing Classification System. A shallow organizing system, but at least it is something. Cannot ignore what is coming

Where the professional associations go, colleges and universities must follow. The conservative organizations, like the American Medical Association (<http://www.ama->

assn.org/home/amahome.htm) and the National Institutes of Health (<http://www.nih.gov>) have essentially blessed the Web and electronic publishing with their Websites.

One of the most ambitious projects is not surprisingly coming out of the ACM and its Digital Library. The Digital Library is part of an aggressive publishing plan outlined in 1995 by the ACM (http://www.acm.org/pubs/epub_plan.html). The ACM has 17 print periodicals. The 79\000 members currently maintain 55\000 journal subscriptions (13\000 subscriptions to non-members). The Association plans to have available full-text articles from all ACM journals, magazines and conference proceedings from 1991 forward. A table of contents database will contain citations from 1985 forward. Members will be able to purchase access to all 17 journals for a cost approximate to purchasing two of the journals in print.

OCLC's OFECO is a single location, a single interface, for electronic journals. OCLC is doing more than just offering an access point for journals, it is offering a full management of electronic journals. OCLC has secured archival rights from the publishers and plans to provide stable and ongoing access to the materials. This service may go far in alleviating some of the concerns about long term maintenance and access. While similar in purpose to JSTOR, OCLC has a long-standing reputation. In addition, because OCLC has other products besides the journals, its long-term financial health stands to be better than JSTOR and other similar products. Facing the future

From discussion at this conference, it appears that there are issues in connection with the technology infrastructure in Europe that must be resolved before Europe can embrace the Web as readily as the United States. Still, the differences are troublesome because they illustrate the concerns that electronic publishing on the Web could well introduce stratification of information access across the world and across professions. It is easy for us in the United States to forget that even countries in Europe lack the same type of access that we rely upon. The common sentiment would seem to be that, if people have e-mail, they must have the Web, and we assume further that connection is fast and reliable and that the computers on the desktop can handle the load.

Still, despite the issues that must be addressed in Europe, such as bandwidth and servers, what the traditional publishers are doing will greatly accelerate the shift to the Web. No longer on the fringes of academia, it is the foundation of scholarly communications which is now racing to the Web.

I am on the editorial board of *JASIS*, which I mentioned earlier. In spite of the fact that the society is deeply involved with information science, when the publisher decided to not only mount the journals electronically in static PDF but with plans to move it to dynamic PDF, there was some discomfort. As one of my colleagues on the board noted, "we may be seeing the beginning of the end of *JASIS* as we know it". The issues are complex and our publisher is turning to us to help guide them. The future has arrived, there is no turning back now.

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