

## **"Serving the Community During the Revolution"**



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The following presentation to the Society for Scholarly Publishing Management Roundtable (New York City, Nov. 11-13, 1998) is provided as background for the CNI Task Force session on "Online Authoring for Scientific Meetings"

It's a great pleasure for me to be back in New York, where I lived during the 1980s. I worked in broadcasting in the building next door, and today's topic reminds me of the ferment in that industry at that time. ABC and the other broadcast TV networks were facing new competition from cable and satellites. The building next door was called "the ABC building." Now it's called "the ITT building" – and ABC, which was bought first by Capital Cities and then by Disney, is farther uptown.

Walking around New York also reminds me of Christies and Sothebys, the great auction houses. Today the New York Times published an interesting article about eBay, the new electronic auction service on the Web. There is an analogy between scientific and scholarly publishing today and Sothebys, Christies, and eBay. The deadlines that managing editors face on a monthly or weekly basis are like the auctions at Sothebys and Christies, where prospective buyers gather in the New York auction room at a pre-set time. Meanwhile, on eBay, as on the new pre-print servers in science, a virtual auction is continually in progress.

In keeping with the title of this talk, I have been asked to identify the Louis XVI, Robespierre, and Napoleon of the scientific publishing revolution.

Louis XVI, it is important to remember, almost lived. If he had been more successful in co-opting the Assembly, he would have died quietly in his bed. In scientific publishing today, Louis XVI is anyone trying to create a large virtual library built on the inherited traditions and production processes of the print publishing process. Commercial publishers like Elsevier Science, Wolters-Kluwer, and Harcourt General are Louis XVI. There is still time for them to co-opt the process, but they will have to change the way they do business to survive.

Robespierre is not who you might think. He doesn't die in this revolution. Robespierre is Microsoft, Silicon Valley, and venture capital – the forces behind the infrastructure and tools that we use every day. These tools in the near future will allow scientific publishing to be reengineered as an all-electronic process.

And Napoleon? Napoleon was the head of a large Corsican family, not just one person. The family was the Bonapartes. Napoleon gave one Bonaparte to every country in Europe as a new head of state. One member of the Bonaparte family even came to Baltimore, where he married Betsy Patterson. Napoleon in this revolution is not a single individual; it's the entire family. Napoleon is the universities and societies who directly manage and represent the scientific process.

My orders are to describe the factors that will affect the scientific publishing business generally, and Community of Science in particular, three to five years out.

By way of background, Community of Science is a company owned by Johns Hopkins University, the University City Science Center, and venture capital firms.

The Company operates a faculty information network of 220 research universities. These universities are currently all in North America, but we are expanding rapidly internationally. We have 200,000 active user accounts and distributed authoring tools, with institutional verification, that permit researchers to maintain online accounts of their research interests and expertise. Member universities use COS to build and maintain a registry of their faculty's professional activities - for institutional review, research grants administration, and outreach to external audiences. COS uses the Expertise database as a platform for online authoring of new scientific and scholarly content.

The factors that will affect us over the next 3-5 years are the following:

1. Convergence of Web browser technology, new technical markup languages (XML), and word processing and document management systems

The effect of this convergence will be to establish a new level of power and sophistication in the readily-available tools for online authoring and PC-to-database-to-Web publication.

An immediate instance of convergence trend is the support for XML which will be built into Internet Explorer version 5.0 and Netscape Navigator 5.0, due to release in early 1999. XML will offer the opportunity to combine the functionalities traditionally associated with markup languages like TeX, with

the ease-of-use associated with word processing tools like Word and Wordperfect, all in a "thin client" browser.

This will make it possible for societies and other publishing entities to reengineer their document submission, peer review, and online publishing processes. Societies will be empowered as self-publishing entities, but will be challenged technically and in most instances will need to implement self-publishing systems in partnership or in relationships with outside groups.

2. Universities will begin to assert themselves as more active partners in the scientific and scholarly publishing process

Universities are beginning to flex their muscles as active players in the publishing process. Universities employ the majority of the authors who contribute the source material. University libraries support the underlying economic support for the publishing infrastructure, by buying back the finished product. Key indicators of this trend include:

- SPARC – a university initiative to give libraries pricing leverage in dealing with commercial publishers
- Internet 2 – "Scholarly publishing is broken, and we're going to use the Internet to fix it," says a university member of the Internet 2 Board of Trustees
- Significant investments are being made in online authoring and document management systems being by universities to support Electronic Research Administration, e.g. MIT's COEUS project, which will cost \$4.5 million per university to streamline workflow and internal "peer review" of research proposals. It is unreasonable to expect that similar systems will not be put to use in document management and workflow of scholarly publishing in the future.
- University of California – considering a policy that its faculty retain copyright on behalf of the UC Regents, instead of conferring it to societies or publishers

All of this will have an impact sooner than we think. Universities and societies will begin working more closely together. The new model is already present in the LANL pre-print server and NSCTRL – repositories managed by universities or government research lab, using research grant dollars, with individual or university department "members."

3. Copyright will be defined more as a function of use, associated with different "views" of authored material, than as an underlying property right

There are several approaches to copyright and intellectual property in the University and publishing communities today:

- In traditional publishing, commercial publishers and societies require authors to confer copyright. The University gains no financial benefit from the output of its faculty, and library budgets are squeezed.
- In technology transfer, the University requires the researcher to assign the ownership. The University pays the costs of patenting and marketing, and benefits financially from licensing fees and royalties.
- In the "academic server" (pre-print) model, individual authors retain copyright to the material that they submit, and there is no cost to users for accessing the information.

It's not clear at this point which approach will win out, but change is likely here as the "academic server" model encroaches into the commercial realm. The University and the traditional publishing model will collide. For its Expertise database, COS confers different levels of copyright protection of different levels of use and aggregation of the data. Each researcher can hold the copyright on his/her individual Expertise record. Each University can hold copyright to its institutional dataset, e.g. Johns Hopkins University Expertise". COS holds the copyright on the "member view" of Expertise database.

4. As publishing processes are re-engineered, allowing peer review to be conducted in a seamless online environment, the distance between pre-print servers and online journals will begin to close

The trends here include:

- The print journal will be an artefact of an online authoring and document management process
- The current e-journal workflow - where the electronic journal is produced from an SGML file generated as part of print production process – will be reversed and subsumed into a broader electronic process

The beginning stages of this process are currently underway for simple document types, and this is the demonstration value of "**Online Authoring for Scientific Meetings.**" In this program, meeting abstracts are collaboratively authored, submitted, peer reviewed, and scheduled for meetings and conferences in a seamless database environment.