# Electronic Serials Publishing at the University of Houston Libraries

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## Introduction

Ann Okerson and Kendon Stubbs have published an excellent article in *Publishers Weekly* entitled " The Library 'Doomsday Machine'." I'd like to quote briefly from that article:

> The continuing serials crisis signals that the present system of scholarly publishing is in danger. Information overproduction, "publish or perish" philosophy, the weakening U.S. dollar, sky rocketing prices and the increasing unaffordability of published research findings—which are, after all, initially produced at universities and often publicly funded—all lead ARL to believe that cancellation projects must be a way-station to longer-range solutions.

As the serials crisis deepens, an alternative scholarly publishing system is emerging on noncommercial, international computer networks, such as BITNET and Internet. Computer conferences, electronic newsletters, electronic special-interest magazines, and electronic journals are becoming increasingly important information resources for scholars. 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.

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. In spite of the exciting potentials of network-based electronic serials, significant problems need to be overcome before these serials will be as fully functional, accessible, and easy to use as their printed counterparts.

This general model of information dissemination—electronic delivery of information via networks and on- demand printing—holds great promise for transforming the scholarly communication process. This change is likely to affect a wide variety of library materials, not just serials. Agencies like Project Gutenberg are striving to provide public domain copies of electronic books. Experiments in the digital preservation of books and customized textbooks assembled from the electronic archives of publishers prefigure a new era of information access.

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 online catalogs, campus-wide information systems, and specialized research databases. Numerous computer programs and electronic documents are available via anonymous FTP. In the future, we will see the development of sophisticated multimedia computer systems on networks.

The University of Houston Libraries have been actively exploring new forms of scholarly communication on computer networks, reinventing itself as an electronic publisher.

## PACS-L

In June 1989, the University of Houston Libraries set up a computer conference on BITNET, Internet, and other networks called PACS-L. This conference was established to allow librarians to discuss issues related to computer systems in libraries that are used by patrons, which we call "public-access computer systems." These systems include CD-ROM databases, expert systems, hypertext programs, network resources, locally mounted databases, and online catalogs. PACS-L grew rapidly, and, in addition to librarians, it attracted computer specialists, faculty members, library school students, and other users. By April 1992, the conference had over 3,950 direct subscribers in 44 countries. The actual readership is larger since PACS-L is redistributed on networks where users do not need individual PACS-L subscriptions to receive conference messages.

The influence of PACS-L has been felt beyond the network community. Increasingly, PACS-L messages are being cited and quoted in scholarly articles and books.

## *The Public-Access Computer Systems Review*

After running PACS-L for a month or so, I began planning an electronic journal, which would be called *The Public-Access Computer Systems Review*. PACS-L provided both a tool to distribute an electronic journal, the Revised LISTSERV software used to support the conference, and an audience for it. If electronic journals were to be accepted as a legitimate method of scholarly communication, libraries would have to collect, provide access to, and preserve them. It was hoped that an electronic journal on the topic of public-access computer systems would interest librarians and show them the potentials of electronic publishing.

Robin Downes, Director of the University Libraries, was very supportive of the idea of establishing an electronic journal. With his encouragement, a six- person editorial board was recruited during the next few months to help develop the journal. This small, but distinguished, group played an important role in shaping the journal through spirited discussions about electronic publishing issues that were conducted on a private computer conference.

After weighing different organizational options, it was decided that I would act as Editor-In-Chief and an Associate Editor would be appointed to help with the workload. Mike Ridley of McMaster University accepted this post. Mr. Ridley and I had previously had e-mail correspondence, but we had never met in person.

All the members of the Editorial Board and the editorial staff were unpaid volunteers.

## Major Issues Related to Developing the Electronic Journal

Since there were no guidebooks on how to start an electronic journal and few examples, numerous questions needed to be answered about the nature and structure of the journal.

One of the major areas of concern dealt with imitating the conventions of print journals. Should an issue contain one or multiple articles? Should each issue be designated by volume and number or should an issue's file name be used to identify it? Should page numbers be used, even though these numbers would likely have no meaning when the article was printed out? If print conventions were not used, how would authors cite articles in the journal? How would libraries integrate them into their serials work flow?

Another key question was the length and complexity of articles to be included in the journal. Longer articles required more disk storage space, but we were freed from some of the significant economic constraints of a print journal, where more pages meant higher printing and postage costs. The real issue was how users would read the journal's articles. We doubted that users would want to read lengthy articles online; however, it would be

possible for many users to print articles on a mainframe printer, screen print them, or download articles and print them on their PC. What would be better: short, useful articles or longer, more substantive articles?

Inevitably, the question of whether it would be a refereed journal arose. A refereed journal seemed ideal, but it had several problems. The pool of potential authors might be small for such an avant-garde form of publication, especially since many authors would be librarians who worked forty hours per week, twelve months a year. Would authors invest the level of effort required to produce an article for a refereed electronic journal? The referee process would also slow down journal production and increase the workload of the volunteer editors.

Distribution format was another consideration. Should the journal be sent out as a long e-mail message on PACS-L? Should the journal be issued in sections?

Should individual articles be stored as files on the list server and a table of contents message be sent out on PACS-L to notify users that an issue was ready and to tell them how to retrieve article files of interest? If the journal wasn't issued as a whole, how would each section or article be identified as belonging to an issue? Given the e-mail account limitations of some PACS-L users, this decision would also help determine acceptable article length.

Publication schedule was also a concern. Should an issue's articles be "published" at one time or should they be issued individually as they were edited? Technically, there was no reason to publish the articles at one time—this was a print publication convention. If the journal were issued as a whole, should it come out on a regular basis and, if so, how frequently?

The mutability of information in the journal was considered. Would there be one, fixed "official" version of an article? By contrast, would PACS-L users be allowed to react to articles and have their comments appended to the article, with the author being given the chance to revise the work after a set period of time to account for these comments?

Fee or free was another consideration. In the print journal system, universities pay faculty members to write articles. Publishers obtain these articles at no cost and sometimes require author page changes. They also frequently require authors to assign their copyright to the journal. Then they sell the articles back to universities, sometimes charging thousands of dollars per year for a journal subscription. Partially, the cost of conventional serials reflects the fact that the print medium inherently has expensive production and distribution costs.

Given the unique economics of electronic publication, we had the ability to experiment with a different model of scholarly publication. In this paradigm, authors would retain their intellectual property rights so that they could republish their articles as they wished. Authors would give the journal the perpetual, nonexclusive right to publish the article in the journal and in any future collections of articles from the journal that the publisher wished to create. Journals would be offered at no charge or at low cost. Since journals would be distributed electronically on networks, the cost of printing or other local distribution would be offloaded to the user.

A final concern was whether to produce a solely electronic journal or to complement the electronic journal with a parallel print counterpart. We recognized that all interested readers did not have appropriate network access to retrieve the journal; however, having a parallel print journal seemed to defeat a key purpose of the journal: to test the viability of electronic publication. Parallel print publication also introduced numerous additional complexities in producing the journal.

# Decisions About Journal Format

It was decided to publish a strictly electronic publication. This potentially freed the journal of many of the constraints of print. However, if the journal was too unrecognizable, user acceptance might be a potential problem. It seemed that the best immediate goal would be to establish and legitimize a fairly simple electronic library journal, rather than to explore the many enticing possibilities that the electronic format offered.

The journal would have issues that were published on a regular basis, identified by volume and number, paginated, and archived on the list server without change.

Establishing an electronic journal was bound to be a time-consuming and inherently difficult task, and the editors were all working librarians. We would forego the complexities of the referee process and have the Editor-in-Chief judge the quality of articles. Initially, the journal would have a "Communications" section for articles and a "Departments" section for columns, reviews, and other short material.

To test the viability of a new publication model, the journal would be distributed at no cost and authors would retain the copyright for articles published in the journal.

# Implementing the Journal

The process of getting the journal started was fairly straightforward. Calls for papers were distributed on PACS-L and other library-related conferences. Numerous potential authors are contacted directly, asking them to contribute papers.

Recruitment of authors required considerable persistence, but several authors were willing to submit articles to the journal.

Authors sent their articles to me via e-mail or file transfer, and I forwarded them to the Associate Editor for comment. After selecting the papers for the issue, the process of editing these papers began. The papers were downloaded to an IBM-compatible microcomputer and edited in WordPerfect.

After copy editing an article, I prepared it for distribution. First, I added a file header that identified the article in a standard bibliographic citation format. Next, I put in page numbers, based on a 10-point Courier font. Last, I appended a copyright statement to the end of the article.

The file was then exported from WordPerfect as a text file, uploaded to the mainframe, and sent to its author via e-mail for comment. Once comments were received, the WordPerfect version of the file was revised and the final version of the article was uploaded to the mainframe.

Once all the final article files were assembled in the PACS-L mainframe account, they were sent to the computer account of a staff member in the University of Houston's Information Technology Division. This staff member added the files to the list server's PACS-L file list. The files could now be accessed by PACS-L users. The next step was to send an e-mail message containing the annotated table of contents file to PACS-L users so that they knew the first issue was published and understood how to retrieve article files of interest.

The first issue was published in January 1990, approximately five months after the first call for papers was issued.

# *The Public-Access Computer Systems News*

A month or so after the publication of the first issue of *The Public-Access Computer Systems Review*, I began to explore with Dana Rooks, Assistant Director for Administration at the University of Houston Libraries, the idea of publishing an electronic newsletter based

on vendor press releases and other timely information. Ms. Rooks agreed to serve as co-editor of the newsletter.

Since the information was timely, it was decided that an irregular publication schedule was best for the short issues we envisioned. This way an issue could be quickly created and published once several interesting press releases were received. The newsletter would follow the same general print-oriented conventions as the journal and have the same copyright provisions.

The first issue of the *Public-Access Computer Systems News* was published in March 1990.

# How the Electronic Serials Work

I am now going to discusses how the two electronic serials work in practice.

PACS-L users have an automatic, free subscription to *The Public-Access Computer Systems Review* and the *Public-Access Computer Systems News*. The serials are copyrighted, but copying is permitted for noncommercial use by computerized conferences, individual scholars, and libraries. Libraries can add the serials to their collections at no cost in either electronic or printed form. The serials have ISSN numbers, and they are cataloged on OCLC and RLIN. To my knowledge, they are not included in any library index.

After a PACS-L user receives the table of contents message for an issue of *The Public-Access Computer Systems Review*, the user can decide which articles to retrieve. The user then requests the desired articles by sending a message to the University of Houston list server that contains the appropriate commands indicated in the table of contents message. Each article file is sent to the user's account via either a file transfer or an e-mail message, depending on what command option is chosen. If the file is sent via a file transfer, the user must know the appropriate file handling commands used by his or her mainframe or minicomputer to manipulate the article file.

By contrast, each issue of the *Public-Access Computer Systems News* is sent out as an e-mail message on the PACS-L conference. Since issues are sent out as conference messages, they are automatically archived in the PACS-L message database. To make back issue retrieval easier, the newsletter issue files are also available on the PACS-L list server as individual files.

At any time, a user can send an e-mail message to the list server that contains an INDEX command to receive, via a file transfer or an e-mail message, a list of all available PACS-L files, including the article files for the electronic serials.

There are no restrictions on who can retrieve article files, and the University of Houston does not charge any access fees.

Compared with equivalent print serials, there is relatively little administrative overhead associated with publishing the University of Houston's electronic serials. Because subscriptions are free, we have no financial accounting responsibilities. Since articles are distributed electronically on the network, there is no need for us to physically ship the journal or to deal with claims for missing or damaged issues. Because users can add or delete their own subscriptions on the list server, our subscription list maintenance workload is reduced; however, we do deal with regular network e-mail address problems.

# Evolution of the Electronic Serials

Since the early days of electronic publishing at the University Libraries, our editorial philosophy and practices have evolved and changed.

To date, we have published two complete volumes and the first issue of the third volume of *The Public-Access Computer Systems Review*. These six issues contained twenty-eight articles, nine columns, and seven book or software reviews, which is approximately 570 single- spaced pages of information.

The organizational structure of the journal changed over time to reflect the increasing editorial workload. By the third issue, Leslie Pearse of OCLC had joined the editorial staff as an Associate Editor. By the first issue of volume two, more specific duties for the Associate Editors had been defined. The Departments section was broken up into two new sections, Columns and Reviews. Leslie Pearse became Associate Editor of the Columns section, and Mike Ridley became Associate Editor of the Reviews section. A new Associate Editor, Dana Rooks of the University of Houston, was appointed to edit the Communications section. As of the first issue of volume three, Mr. Ridley resigned his editorial post and was replaced by Roy Tennant of the University of California, Berkeley.

In its first year of publication, *The Public-Access Computer Systems Review* took a fairly "conservative" approach to electronic publishing, emulating the structure and features of a conventional journal. In its second year, the journal begun to more aggressively explore the enticing possibilities of electronic publication. As of the first issue of volume two, the journal became an irregular publication, so that issues could be distributed as soon as they were edited. By the second issue of that volume, multiple-article issues became optional. An issue could now be composed of a single article, several articles, or numerous articles.

One key problem that network-based electronic journals face is that many potential readers do not have access to networks. Consequently, these journals are increasingly providing access to back issues via alternative distribution formats, such as floppy disk and microfiche. Like *The Public-Access Computer Systems Review*, most network-based electronic journals do not charge for the electronic version of the journal, but do charge for other formats.

At the end of 1990, the Editorial Board of *The Public- Access Computer Systems Review* strongly encouraged the University Libraries to make the journal available in printed form. Parallel print publication was discarded as a costly and "counter-revolutionary" alternative. A print annual seemed like the right approach. A noncommercial publisher, the Library and Information Technology Association of the American Library Association, expressed interest in publishing the annual, and a contract was signed for the 1990 volume in September 1991. One of the Editorial Board members, Walt Crawford, volunteered to create camera-ready copy for the volume using Ventura Publisher and to index the volume. Volume one should be published shortly, priced at approximately $20. We are now negotiating a contract for the second volume.

The University Libraries will have the copyright to the collective work, and authors will retain the copyright to their articles. The electronic files will still be freely available on the network, and the print volumes will have instructions for accessing those files. The University Libraries will donate all profits from the print volumes to the Library and Information Technology Association, which is the primary professional association dealing with computer use in libraries.

In the fall of 1991, *The Public-Access Computer Systems Review* added ten new members to its Editorial Board and initiated a new Refereed Articles section. The first peer-reviewed paper was published in the first issue of volume three. As anticipated, peer-review has made the editorial process significantly more complicated.

The *Public-Access Computer Systems News* has undergone little change compared with the Review. We have made a few minor format changes, like adding a table of contents to each issue. To date, we have published two complete volumes and part of a third, for a total of twenty-nine issues.

Towards the end of 1991, the PACS-L moderators invited the University of California at Berkeley Library to distribute an electronic newsletter that it published, called *Current*

*Cites*, on PACS-L. This addition to the PACS-L group of publications has been very popular.

Many PACS-L users liked having the electronic serials mixed in with messages from PACS-L users; however, serials departments in libraries wanted to only receive the electronic serials. In January 1992, the University Libraries established a second computer conference, PACS-P, for users who only want to receive the electronic serials. As of April 1992, PACS-P has over 250 subscribers in 26 countries.

# Lessons Learned

Based on our experience, I'll now offer a few brief suggestions to fledgling editors of electronic journals. Keep in mind that our experience is primarily in the area of librarianship, where few editors or authors are true faculty members.

- Don't directly compete with a well-established journal in your field. Look for a new scholarly niche that is important, but currently unoccupied.

- Mimic some aspects of print journals. Editors, editorial boards, table of contents, enumerated issues, author guidelines, and ISSN numbers still serve useful functions in the network environment. Many electronic journals have jettisoned pagination, but I feel that, even though it is artificial, it facilitates accurate citation and encourages scholars to cite your journal.

- Recruit the most prestigious Editorial Board that you can. This will help lend credibility to your electronic journal.

- Don't expect that you will be flooded by article submissions. By contrast, expect that you will have to solicit most papers and that you will be turned down frequently. Many authors will be reluctant to publish in an electronic journal. Don't be discouraged. Persistence will pay off, and article submissions will slowly rise over time.

- Primarily recruit up-and-coming authors instead of well-known authors. This is likely to result in a heavier editing load since you are working with less experienced writers. A few of the giants of the field will want to submit articles, but they are more likely to be interested in less weighty submissions like book reviews. Once they have published something small in the journal, they may be more inclined to consider a more substantial publication.

- Expect that e-mail communication with authors will speed the journal's production process, but it won't decrease the time needed for you to edit papers or for authors to make revisions. Editing an electronic journal is no easier than editing a print journal-- both are difficult and time-consuming tasks.

- Weigh the pros and cons of peer review carefully. Consider holding off on peer review until the journal is more established. Also, consider retaining a non-refereed section once you implement peer review, so that you will still be publishing regularly if the refereed paper submission level is low.

- Publish on an irregular basis. This will allow you to turn articles around more quickly. It will also free you from the tyranny of reader expectations as you struggle with the editing workload and the vagaries of soliciting papers.

- Size the issue according to the papers in hand and your editorial goals. Multiple-article issues are a print artifact. Publish one, two, three, or more articles per issue in a flexible fashion. Thematic issues still serve a valuable function and should not be ruled out.

- Be prepared to deal with the format limitations of ASCII text. This is a limited delivery mechanism that does not support the niceties of print like color, fonts, foreign characters, illustrations, mathematical notation, etc. It is possible to distribute

PostScript or other kinds of files that eliminate some of these restrictions, but your subscribers may not be able to use these files.

- Proofread from the highest quality printed copy you can make. One of the things an electronic editor misses most is printer proof sheets.

- Give the journal away for free or charge a modest subscription fee under $100. Commercial activity has been barred on BITNET, Internet, and other academic networks for most of their brief histories. This is changing, but expect to operate in a complex regulatory environment where it is difficult to determine who--if anyone--is in charge. Also, expect that network users may be hostile to strictly commercial ventures that seem to be aimed at making a hefty profit. The network culture is based on cooperative activity and volunteer effort.

- Publicize your journal on the major computer conferences for your subject area. You will find that this is a highly effective way to instantly reach a worldwide market.

- Make sure that no one can send a message to journal subscribers but editorial staff.

- If you don't charge for your journal, let users subscribe and unsubscribe to the journal themselves by sending commands over the network. This will save you a significant amount of work.

- Unless your journal issues are under about 500 lines, send out a table of contents message instead of the whole issue as an e-mail message. Many subscribers have limited space in their e-mail accounts and will not welcome you overloading it with a megalithic issue.

- Start each article file with a standard bibliographic citation for the article. This clearly identifies the article, and it further encourages scholars to cite it.

- Permanently archive your article files so that users can request articles themselves. Don't restrict who can access these files unless you are charging a subscription fee. Make your files available on the network around the clock, every day of the year (or as close to this as possible). Be sure that no one can put files on the journal's file server but editorial staff. Resist the temptation to replace article files with corrected versions.

- Copyright the issue as a whole as a collective work, but let authors retain their copyright to their articles. Include a complete copyright statement in each article file. Have a liberal copyright policy that allows libraries, computer conferences, and individuals to freely copy the material.

- Consider an alternative publication format, such as floppy disk, microfiche, or a print annual, for non-network users. Charge a modest fee for this access method.

- If you already publish a print journal, make a complete or partial electronic version available at no charge. Some publishers are already doing this. My guess is that this will be a winning strategy that will increase the visibility and subscription level of their corresponding print journals.

# Conclusion

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 experimental efforts of the electronic journal publishers suggest that it is possible to establish an alternative publication system where universities and professional associations publish their own electronic journals, allow authors to retain the intellectual property rights for their work, and provide global access to information at low or no cost. This system would complement the efforts of commercial publishers, who are just beginning to explore the network environment.

Network-based electronic publishing is a wide-open frontier. It is still possible for pioneering publishers to claim some territory, settle, and help build a new publishing system to better serve scholars in the 21st century. I would urge you to join these pioneers.

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