

# Back to Academia?

## The Case for American Universities to Publish Their Own Research

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Director, since February 1990, of the Office of Scientific and Academic Publishing of the Association of Research Libraries in Washington, D C, Ann Okerson has had a diverse career built around academic librarianship. After graduating (BA, Honours in English and German) from Pacific Union College and San Francisco State University, and MLS from the University of California, her career included a sabbatical year with Blackwells in Oxford, seventeen years as Head of the Serials Division of Simon Fraser University, Vancouver, and four years as Manager of Library Services for Jerry Alper, the New York antiquarian book sellers. Okerson has served the North American library community in many capacities and is today a vigorous spokeswoman on behalf of the libraries that constitute the ARL membership.

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America's 3,500 academic libraries spend more than \$1.25 billion a year on acquisitions. It is almost certain that more is spent on serials than on books. The ninety-four US members of the Association of Research Libraries, who are responsible for 40% of the \$1.25 billion, spend 58% of their funds on serials. Although these numbers appear robust, the US academic library community believes that the worldwide scholarly publishing system is far from well. (See articles by Herb White and Tim King in LOGOS 1/4). While few would go so far as to agree with Jerry Campbell, Duke University Librarian, who called the academic journal "terminally ill", most librarians in research institutions now believe that the present scholarly publishing system will not survive without, at the least, radical and unusual treatment, and, at most, total re-birth.

One possible long-term solution increasingly discussed is that the universities - which originate 70% of scientific journal articles - should be their own publishers. Sharon Rogers, Assistant Vice President for Academic Affairs and Librarian at the George Washington University, and Charlene Hurt, Librarian at George Mason University, for example, flatly assert that paper journals are obsolete as the primary means of communicating current scholarly findings and advocate a university-based system into which scholars from all disciplines would place their findings (*Chronicle of Higher Education*, "How Scholarly Communications Should Work in the 21st Century"). In June 1990, at the initial meeting of the Coalition for Networked Information (CNI is a joint venture of three higher education associations), Jerome Yavarkovsky, Director of the State Library of New York, said: "It is time to talk about joining institutions in a vast and powerful system for scholarly communications... in traditional terms, we are the authors, the editors, the paper mills, the printing presses, the binders, and the readers. We are part of a perfect, vertically integrated enterprise... our universities and other research organizations have the choice: control electronic publishing to our economic and intellectual advantage, or surrender the initiative and the future of scholarly communication to others."

What are the major symptoms which invite such radical proposals?

### 1. Economics

Prices of academic/scholarly books and journals, according to ARL, have increased by over 400% between 1972/73 and 1987/88, far in excess of other measures of national growth - the Consumer Price Index, the Higher Education Price Index, the level of funding available to research institutions, or even (possibly) the level of

funding by major government agencies for scientific research grants. In the last four years alone, the cost of subscriptions for ARL university members has risen by 52%. (This excludes the 20% average increases anticipated, but not yet analyzed, for 1991 over 1990.) No wonder there has been a drop of 1% in numbers of subscriptions and 16% in numbers of monographs ([see graph](#)). In average local impact, that is a drop-off per institution of 5,300 books purchased or a \$23 million revenue reduction for monograph publishers. Such price increases have severely strained the relationships between research librarians and publishers, especially (although not exclusively) the higher-priced, often non-US, STM groups.

Publishers point to high costs of paper and distribution, the weakening US dollar, and argue that they are, after all, only providing publications to meet an apparently insatiable, undeniable academic demand for more and more outlets in the face of an exponentially growing body of knowledge. Adding an intellectual insult to economic injury, publishers remind librarians that neither they nor their academic colleagues can possibly understand the mysterious, expensive, absolutely essential "value-adding" components of publishing - the Mystique of Publishing. The mystique includes an "economies of scale" argument which says that a publisher has to produce a certain number of journals in order for publication to be cost-effective.

Librarians cite their own and scholars' pricing studies, which show that, page for page, the publications coming from the not-for-profit sector cost two to twenty times less than those produced by the large commercial producers. In collaboration with their European library colleagues, they document differential pricing structures that chase exchange rates around the world, charging more to whatever country's institutions can afford to pay most in a given year. As such pricing behavior is not illegal - and Western society applauds practices that assure good profitability - the library community focuses also on moral grounds and "public good". Most research is publicly funded. Most libraries which store and distribute the results of that research are also publicly funded. Yet the literature of that research is assigned permanently (fifty years plus by copyright) to intermediaries some of whose prices are unaffordable to the public. If economies of scale are real, why is it, librarians ask, that the larger publishers are often more expensive than smaller ones?

## 2. A burgeoning literature

John Naisbitt in *Megatrends* tells us that information doubles every 5.5 years. Ulrich's counts the pre-1978 STM journal start-ups at some 8,000+ and 1978-87 at 29,000+. Publishers regularly add issues or split journals into parts. Scholars themselves ask whether all this literature is truly necessary. Library use studies show that a great deal of academic literature goes unread; citation studies show that in many disciplines half or more of all published articles remain uncited. Academics apparently agree that a significant proportion of what appears is of mediocre quality and is produced primarily to satisfy criteria for grants and tenure. Recent revisions of certain institutions' publication guidelines suggest that the academy is beginning to regulate itself more tightly, but whether self-discipline will significantly reduce the pressure to publish - and whether reduced pressure would reduce output - remains to be seen. It may turn out that the real correlation with published academic output is not tenure and grant requirements so much as the number of practicing scholars and scientists and the dollars assigned to science research.

## 3. The quick changes wrought by information technologies

Widespread ownership of ever cheaper, powerful, flexible personal computers and academic access to rapidly growing, interconnected, electronic networked communications fundamentally affect the way in which researchers work and communicate and the size of their projects and costs. Technologies are already beginning to change the way in which distribution of research results is done.

Anticipating possible delivery changes, many publishers are ensuring that printed text exists also in machine-readable and transferable form. They are positioned to market books and journal articles electronically after certain problems are resolved: technological (largely to do with effective and user-friendly transmission of text and non-text); economic (how to charge; how to make transitions between paper and electronic communication without losing profitability); and ownership (how to monitor a technology that lends itself to easy copying, thus loss of control and revenue). The advantages that might accrue through electronic publishing await the

development of economic models. Simultaneously, the academic and not-for-profit sectors are exploring electronic publishing. Many not-for-profit groups are experimenting with digitizing and electronic distribution projects. The National Agricultural Library and North Carolina State University Libraries share reports of agricultural researchers. ITI (Information Technology Imaging) projects are under way at several universities in partnership with Xerox to produce information "on demand". Cornell, the Commission for Preservation and Access and Xerox are collaborating in a pilot project to test advanced technologies for recording deteriorating books as digital images. Cornell, the American Chemical Society, OCLC and Bellcore are experimenting in converting large runs of ACS journals into electronic format and testing users' responses for browsing and retrieval.

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About 70% of scientific journal articles carry university addresses, but universities are increasingly unable to "buy back" their own work. It is not surprising that a vision of university-based publishing captures the imagination of parts of academe. A marketing survey in 1990 determined that universities publish at most 15% of their scholars' output. It is a stretchy 15%, including not only work of university presses, but also publications of individual academic departments, working papers and periodicals. About 90% of formal academic publications migrate outside the academy before returning home as repurchased monographs and serials. There are no hard data about what proportion of that 90% is produced by scholarly and scientific societies as opposed to the commercial sector, but soft evidence suggests that since World War II half or more of what used to be not-for-profit output is now commercially published. Universities could compete and influence price by retrieving control of a proportion of the academic literature and strengthen the arm of university publishing, withered through lack of interest, support, glamour or profitability.

Regaining paper ascendancy is a long road, possibly a lost road. However, academic publishing through the electronic networks that link most universities, laboratories and agencies - predominantly not-for-profit research institutions looks practical. The US government began funding such electronic networks in the late '60s to advance research on government projects. Universities were quick to "wire" their campuses and develop a linking infrastructure through networks such as "Bitnet" and "Internet". Similar developments occurred in other countries. Proposed 1991 US legislation would strengthen the linkages and accelerate the rate at which the capacity and speed of the networks grow.

The vision of re-asserting universities as publishers has found its most powerful voice not within university administrations or presses, but among research library leaders. In the early '80s, Patricia Battin, University Librarian and Vice President for Information Services at Columbia University, advocated such a long-range view. The most articulate advocate today is Richard Dougherty of the University of Michigan. In a 1989 editorial in the *Chronicle of Higher Education* he imagined universities regaining control over their own scholarly output, through substantial commitments to computer and telecommunications technologies. "Why not marry," he asked, "the technological capabilities of computer centers with the expertise of university presses as producers and libraries as retailers and distributors, to expand the university's role?"

The real test of this "library vision" of a university-based electronic publishing system would be whether the faculty and scholars who author and edit books and journals - and are ultimately their readers - would write for the new medium and willingly read it. One can fantasize endlessly about electronic "journals", but without active authorship and readership there is nothing. Skeptics about electronic publishing have documented attempts to parallel, supplant or replace paper journals with high-tech substitutes. All such plans of the '70s and '80s failed through lack of interest among scholars, not librarians, who see advocacy of electronic initiatives as part of their gatekeeping role.

By 1990, though, the climate had apparently changed. The addictive attraction of academic networking was such that a handful of innovative risk-takers were ready to commit to a new type of journal. Technological seeds (linked campuses, personal computers on academic desks) sown and watered in the '80s, sprouted as a handful of refereed, scholarly networked-only electronic journals. Word about the upstarts spread throughout the academy. In October 1990, the North Carolina State University Library and ARL convened a miniconference which editors from eight of ten "journals" attended, along with specialist research librarians from reference and information systems services.

The "journals" cover several disciplines, largely humanistic and social sciences. The sciences are not well represented among electronic journal start-ups, perhaps because technical capabilities for easily dealing with non-text are not fully ready. Even so, a major scientific organization (American Association for the Advancement of Science) has a journal in the planning stages, with anticipated release of first issues in 1992. Technical support and distribution are being done by OCLC. All but one of the new journals are free to networked subscribers. For the most part, these new electronic journals began as mimickers of conventional journals, but capitalized on the networks' quick and cheap distribution qualities. By some accounts, dropping paper distribution cuts publishing costs approximately in half.

At least one of the journals (*PSYCOLOQUY*) invites open peer commentary on the Net and conceived a totally new process from the outset: "scholarly skywriting" dialogs about postings which appear after a rapid turnaround (a few days or even hours) by peer reviewers. Via "skywriting", ideas are discussed as soon as possible after the moments that scholars conceive and articulate them, rather than losing momentum or dying during the multi-month gestation that is now the norm for acceptance and publication of articles in scholarly journals. In the four months to two years required for an article to pass, like some large animal, through a journal's digestive process, the author may well have moved on to new topics. In print-on-paper, worthy ideas may not receive the wide discussion and attention they merit. By the time they see print, the creator may well have set off on other intellectual journeys. Indeed, an outcome of today's sluggish publication mechanism is that the "informal college" shares papers within itself long before publication. This achieves quick insider attention and response, but increasingly leaves out others who may be interested and whose views could be invaluable to the "body of knowledge".

The electronic journals of October 1990 have since been joined by another handful and still more are in proposal stage. They are all not-for-profit, generally university-based and have rapidly growing circulations - in the hundreds and low thousands. Concerns common to all are: copyright, citation, user-friendliness, peer interest, university support, university acceptance, archiving, indexing, browsing capabilities and inability to transmit nontext (tables, plates, half-tones, notation, formulae). Ownership and re-publication statements are generous. Steven Harnad, editor both of the heavily-cited paper journal Behavioral and Brain Sciences and coeditor of the networked electronic journal *PSYCOLOQUY*, commented, in a network correspondence exchange: "Perhaps [some]one might try to purloin an idea and publish it as his own. So what? The peers saw it first and know whence it came and where and when, with the archive to confirm it... the few big ideas that there are will not fail to be attributed to their true source as a result of the net. As to the many little ones, the minimal publishable units, well, I suppose that a scholar can spend his time trying to protect those too... or he can be less stingy with them in the hope that something bigger might be spawned by the interaction... I'm inclined to think that for the really creative thinker, ideas are not in short supply."

The refereed electronic journal is only one attempt - the most recent and most formal - to discipline the electronic "cesspool". For years, academic and research networks have bred discussion groups (sometimes called "conversations", conferences, "lists", or bulletin boards), either for computer "hackers" or general participation. These fora have been characterized by words like "student-y", undisciplined, emotional, chatty, trashy and may have temporarily sullied the medium in the eyes of some academics. Yet the unmade bed begins to look more orderly as scholars in many disciplines organize highly specialized topical areas for idea exchange. In addition to pulp outlets, there now are hundreds of conversations on weighty academic topics such as Ethnomusicology, J R R Tolkien, Renaissance and Reformation Studies, Government Documents, Computers in Library Public Service Areas. Participants, conveniently logging on from their personal computers or workstations, post messages that feed the conversations. Many "lists" keep track of participants and ensure that all "subscribers" automatically receive all messages. A number maintain archives of past messages, along with adjunct "files" of relevant articles or other documents that readers may retrieve. Many of the academic lists have a "moderator" or editor who ensures that postings meet a certain standard. Such specialty lists are a new form of journal or serial, at the very least a visible, formalized way for the "informal college" to exchange scholarly communications.

In the middle earth, between refereed journals and the continuum of bulletin boards, there are electronic newsletters. Like paper newsletters, they report new developments via short, generally unjuried pieces. Some editors maintain two or more related electronic vehicles serving different purposes. For example, the refereed

electronic journal Postmodern Culture maintains an accompanying bulletin board for related communications. PACS (Public-Access Computer Systems) is a chain of three publications: PACS-L itself as a "list" or "conference", PACS News for reports and news items, and PACS Review as the scholarly journal. In the fall of 1990, there were about two dozen identified electronic newsletters. Six months later that number had doubled. For the moment, the networks carry information which is not to be sold for commercial gain.

To some extent, academic network experimentation and the beginnings of its formalization have come out of a desire to solve economic problems. Paper journal start-ups are expensive and their continuance is far from assured. In this way, electronic journals may slow the growth of the traditional paper journal, but their chances of proving economic are likely to be better if they are the sole medium, i.e. not add-ons to conventional journals. Much innovation appears to be a result of excitement and curiosity about the new technology, which seems so suitable for broadening and quickening scholarly communication; for building knowledge collaboratively; for more effective peer review; for intermedia applications; and for superior access via sophisticated searching strategies and software. Some electronic journals propose to "publish" in subjects or formats paper cannot capture: for example, computer, chemical or biological modeling; or to demonstrate "live" sciences, for example, in illustrating mathematical formulae or physical motion. In these relatively early days, it is impossible to predict to what new worlds networked electronic publishing will take scholarly communication. To find out, the academy will have to support the new ventures.

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University administrations concurrently are beginning to express grave concerns about losing ownership of the academy's intellectual output. On some campuses, copyright and intellectual property policies are being re-assessed with the possibility of moving towards shared ownership. Paralleling patent policy, universities could propose joint ownership of books and articles to academics. To be workable, such ownership would have to offer fair exchange. The university might, for instance, swap publication in a prestigious academic publication outlet (within the academic networks) for widespread and inexpensive copying privileges.

More simply, a university could negotiate advantageous institutional copyright transfer statements for articles its faculty submits for publication. At the moment, through Section 105 of the US Copyright Act, work done by US government employees on the job does not fall under copyright and may be reproduced by all readers. It would be possible to loosen up copying of academic articles without having to change federal law, if authors and their institutions negotiated with publishers for less restrictive re-copying provisions. Presently, some copyright transfer forms include not only paper and reprint rights, but also rights for new media, both emerging and not yet created. Working in the more open, collaborative world of networked research and communication, many believe that paper copyright notions are fundamentally unsuited to electronic communications and to the emerging notion of "collaboratory", for reasons that range from the highly ideal (information should be as free as the air we breathe) to the practical ("control" of information is much more difficult in the electronic environment). It is almost certain that the new medium will require significant revision or amendment to the US Copyright Act before the end of the decade.

In the US in 1991, university-based publishing is receiving significant attention as well as tremendous revitalization from the university-linked networks. The confluence of a number of factors suggests that the time is perfect for academe to re-affirm its commitment to wide distribution of scholarly information. The mechanisms are almost in place; the community is energetic and eager; the need is urgent. Many issues remain to be resolved, but it is the right time to attempt an old solution to this new problem: the unaffordability and diminished access to the "body of knowledge". The old solution is academe's vital participation as a publisher of its own research results.

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