

Economics of Online Journals

Morna H Conway
 President
 The Conway Group
 Taneytown, Maryland

An advertising campaign on television just now has the tagline “Behold the power of cheese!” In the campaign, people get into highly unlikely situations thanks to the extraordinary drawing power of the dairy commodity in question. The analogy with electronic journals is that publishers are getting into highly unlikely situations—specifically the prospect of creating dynamics for their journals that endanger revenues—thanks to the power of technology, the Internet in particular. Behold the power of the Web!

The advent of online journal publishing, including the mounting of full-text versions of print journals online, is creating a sea change in how publishers view their product. Until fairly recently, it was not unusual to hear journal publishers say, “You can’t make money on the Web, can you?” That sentiment is being replaced with the more challenging position that publishers, to continue in existence, must figure out how to make money on the Web.

In this article, I will present the key facilitating and constraining factors in creating revenue from journals that have online and print versions and then discuss pricing models for the current transition period. I will conclude with some comments on strategic planning in unstable situations.

The accompanying table touches on some of the major factors that help or hinder customer and publisher movement toward financially self-sufficient online journals. The net effect of these disparate factors and forces is that the economic outlook for online journals is somewhat uncertain for the short term. It is in this environment that journal publishers need to plan pricing and strategies for their journals for the next decade or so.

In the Midst of Transition

The journal industry is in the midst of a transition of unparalleled significance—from distribution in print to a finite number of paying customers, to dissemination electronically to an unlimited number of users, some of whom pay, some of whom do not. The transition is speeded by technology and enthusiastic Web users and slowed by conservative librarians and publishers who are concerned with, respectively, the preservation of a reliable product and the preservation of a viable business model.

The journal industry is in the midst of a transition of unparalleled significance—from distribution in print to a finite number of paying customers, to dissemination electronically to an unlimited number of

In other markets, new technology has not always ousted old: Radio did not replace books or gramophone records, television did not spell the demise of radio, and video did not doom the movies. Will the Web doom the print journal? So far, it has not. Rumors of print’s death have been exaggerated. However, most librarians believe that in 5 to 10 years there will be an electronic archiving medium sufficiently robust (as robust as microfilm!) to warrant their cancellation of print. In addition, “archiving” is being redefined to be medium-independent, with a focus on redundancy rather than storage.

Thus, for the next several years, publishers are faced with the prospect of offering two products with the same basic content

to an audience that can afford to pay only what it has been paying for one product (print); in other words, there is a lack of pricing elasticity in the market. The second product (online) incurs substantial cost to produce and maintain (let alone, in some cases, invent). The result is a fairly widespread model in which the costs of online are absorbed by the publisher, at least in the startup phase, and revenues from print are still seen as the major income for journals. That view of the market, supported by the relatively slow user acceptance of the new online medium, has encouraged the emergence of the most popular model for journal subscriptions: the “bundled” print-plus-online subscription. The subscriber, if an individual, gets the print issues and access (which he or she must activate) to the online journal for one subscription price; the library gets print-plus-online access to a defined set of users at the institution under a defined set of conditions, again with the need for the librarian to activate online institutional access. The pricing model begins with the basic print price, adds a surcharge for the development and maintenance (or maintenance alone) of the Web version, and charges a single price, typically expressed as 110% to 150% of the print subscription price.

One way to develop the actual subscription price is as follows:

- (1) Start with the overall cost of online production (SGML tagging, HTML conversion, PDF creation, Web-hosting, access control, and other features and functions).
- (2) Allocate a percentage of recouping that cost to institutional subscriptions, usually calculated on the basis of what is acceptable to the market. Market research can be used to determine what is acceptable to the specific segment of library customers.
- (3) Allocate the remainder of the cost (plus the profit goal of online publication) to the other classes of subscribers (members, individuals, and students).

(4) Set a price schedule and test on the market.

(5) Adjust as needed to come up with a plan that meets the journal's need for revenue, both to balance cost and to provide a surplus or profit.

That model is pragmatic: It recoups today's costs on the basis of yesterday's business model, and it ensures the publisher of revenue that exceeds the costs of providing

both the print and online journals.

Print-plus-online has the advantages of meeting librarians' desire for both versions, providing access to the online version by all subscribers who activate the online portion of their subscriptions, and slowing the demise of the medium that has traditionally provided noncontent income, such as advertising sales and commercial reprints. It does not necessarily meet the needs of

individual subscribers and society members who are satisfied with the online-only version of the journal. That is the model's greatest short-term weakness. You will need to develop a policy for people who want to cancel print in favor of online-only.

Models that have offered online as a separate option, priced with the assumption that print and online are separate products, are based on the projection that

Facilitating and Constraining Factors: Creating Revenue from Web-Based Journal Publishing

Facilitating Factors

- The technology is largely in place for Web access, particularly in the developed world.
- People are getting accustomed to using the Internet for research.
- The search engines for the journal literature are robust and sophisticated.
- As more information becomes available online, activation and use will continue to increase.
- Fears of mass piracy on the Web are diminishing, particularly with the availability of fast detection of unauthorized robot activity.
- The costs of setting up and maintaining a journal online are stable and predictable.
- Online journal publishing permits faster publication than print.
- Online journals can be developed to include or link to non-print components, such as video and audio clips, datasets, databases.
- The market is gradually learning that not all information on the Internet is free; this will become more true as e-commerce becomes more prevalent for consumer buying.
- The increasing product differentiation between online and print versions of a journal makes buying both common.
- Many consumers believe that the Internet is here to stay: e-publishing, this time around, is not a fad.

Constraining Factors

- Internet technology can be unstable and slow, particularly in developing countries, where many see the future market opportunity.
- Print is more portable, more legible, and more storable, and many people, if they can have only one medium, will opt for print.
- The Internet provides a passive market environment: People need to initiate site access.
- In a given field there might not be enough information online, so people will stop visiting a site if it is not renewed frequently.
- Librarians view print as archival and will continue to require print until there is sufficient confidence in the industry's ability to archive electronic journals.
- Advertisers are slow to develop models for online advertising in scholarly journals; in print journals, advertising revenues are circulation-based, as opposed to the emerging "hit" basis of online publishing. Publishers will retain print as long as possible, to enjoy the benefit of advertising revenue.
- The idea of subscriptions is giving way to the concept of site licenses. Until distribution of online journals is predictable and generates sufficient revenues to create needed income, publishers will resist moving entirely from the subscription model (print).
- Library budgets tend to preclude purchasing online journals that duplicate those in the print collection, even though the material might be expanded online; most libraries will still take only print if offered a choice of print-only or online-only.
- Diffusion in the marketplace is starting to occur as competing services—including aggregators, publishers, and government agencies—offer access to the same information in different formats, such as HTML and PDF, with and without high-level features available on the source site.
- People tend to use online journals article by article rather than looking at a whole "issue", and publishers fear that such buying by the bite rather than the meal will erode revenues.
- Government initiatives—such as PubMed Central (NIH), which proposes a completely different business model, with article review, production, and distribution being author-supported rather than user-supported—tend to cloud the business model for online journals.

Economics of Online Journals continued

people will buy one or the other but not both. So far, given the conservative nature of the library marketplace, this projection has underestimated institutional resistance to giving up print. Librarians acknowledge that their role has changed from “keeper of the information” to “finder of the information”, but the buying practices of traditional libraries continue to support purchase of the print journal, rather than licensing of the content.

The development of library consortia to purchase and use online resources jointly has, in its early years, resulted in site licenses tied to maintenance of print collections. Clearly, until the industry develops archival functionality that satisfies the customer base and develops site licensing and pricing agreements that allow for the decline of print revenues, it will remain in a transitional state and will be obliged to support both media.

Eventually, the economic basis for journal publishing will change, and some experiments are under way to validate assumptions about end-user behavior under different conditions. For example, some journals permit access to their Web sites by the hour or day; some permit “pay per view” and subscription models to coexist, claiming that an article-by-article model suits some customers and an issue-by-issue model suits others; and some journals are participating in the PubMed Central initiative, providing content to the National Institutes of Health (NIH) with some period of delay after publication on the societies’ own Web sites.

Strategic Planning

Scientific journals are a particular breed—in some sense databases of the end product of research, archives of the efforts of generations of investigators. Few peer-reviewed research journals are enhanced with “magazine-like” features such as commentaries, news, and reviews. This makes them

ideal for online searching and retrieval; at the same time, the “added value” they enjoy comes from defining their scope and providing a format for accepted articles and a gatekeeper function in the form of peer review, copyediting, citation of references, and illustrations. The problem is to sustain an economic model that permits the publisher to add the valuable features of peer review and so on when distribution can be widely managed through key nodal points in a network of institutions, companies, and other organizations. The many subscribers served by discrete print copies can be served more efficiently by access through one Web site.

Librarians acknowledge that their role has changed from “keeper of the information” to “finder of the information”, but the buying practices of traditional libraries continue to support purchase

Incremental change works best when the environment is unstable. Sweeping, revolutionary change is more likely to result in chaos than in success. All players in the journal-publishing game—authors, editors, publishers, librarians, readers—stand to win in the long run if the quality of gate-keeping functions is maintained and the accuracy of what is published remains high. Any plan that threatens these fundamental values of scientific publishing should be avoided.

The pragmatic approach to subscrip-

tion pricing (typically, bundling print and online in the interim period) coupled with a visionary approach to the longer term (typically looking at how the fact of Web functionality can improve not only access but teaching and, indeed, the process of knowledge acquisition) will serve journal publishers well for the next few years. By all reckoning, there are still a few (4 to 10) years left in which we will have a dual modality for journals.

Now, however, is when the hard work of strategic planning for the postprint era, perhaps even the postjournal era, needs to start. The context should include

- Encouraging boundary-spanning activities (such as attendance at meetings) to sense what is happening in scientific publishing as a whole.
- Modeling different scenarios under widely fluctuating sets of assumptions, from zero print subscriptions to a small decline.
- Collecting data from customers, both librarians and others, on their preferences for information delivery.
- Undertaking controlled experiments that do not have the potential for devastating economic or market consequences.
- Evaluating all such experiments.
- Tracking and analyzing data on subscriptions, use, and so on.
- Keeping an open mind.

Behold the power of the Web! It is providing the stimulus for a complete retooling of the journal-publishing industry and the opportunity to participate in a major change in how scientific information is disseminated. It is also providing an unprecedented opportunity to collaborate with our colleagues, to stretch our analytic wings, and to create a future in which producers and users of information will be served better than they are today. 🗣️