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Online Journals & Developing Nations

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Online Journals & Developing Nations

WE ALL KNOW HOW the escalating price of journal subscriptions takes a bite every year from our libraries' budgets. Still, if you are reading this in a library in the United States, the U.K., or any other developed nation, you may not realize the devastating effect the high costs of journals have on libraries in less developed nations. Barbara Kirsop, secretary of the Electronic Publishing Trust for Development and director of Bioline Publications, says when she asked a librarian in a sub-Saharan African nation what journals that library would order this year, the answer was, "None."

Price is not the only concern when it comes to journals, however. Scholars in every country care about getting research published, abstracted, indexed, converted to electronic form, and in the hands of those who need it—plus getting access to all of the research they need. This past August, I participated in a meeting of the International Federation of Science Editors (IFSE) in Rio de Janeiro, Brazil.

IFSE's tenth international conference brought together 250 scientists, editors, publishers, and librarians to examine "Scientific Communication Today," especially the processes, methods, and tools of publishing science. Delegates and speakers came from all over Latin America, and from China, India, the Netherlands, Canada, the U.K., and the United States. Although not fully realized yet, electronic publishing of scientific articles holds the promise for solving many of the access problems in developing nations.

The conference helped me to look at the issue through the eyes of a researcher or a journal editor. They cannot do their initial work if they cannot get ac-

cess to journal articles, and they will not survive in their professions if they cannot get their research published in places where it can be used and cited by others. They suffer doubly—when their own libraries cannot afford to purchase journals and also when their research is not read because other libraries cancel journals or lack the technology or time to make journals available on the web. Several speakers at the conference proposed solutions to both sides of the problem.

Bioline

To lower the costs for disseminating and accessing worldwide research, joint projects among developed and developing nations are required. The Electronic Publishing Trust for Development is a U.K.-based charitable organization that is working closely with the non-profit Bioline International service, operating out of the U.K., Canada, and Brazil. Bioline is converting Third World scientific journals to HTML (and, in the future, XML), indexing and abstracting their articles, and making them available over the web.

This removes the burden of converting, marking-up, and distributing from often poorly funded nonprofit scholarly journals. Today, Bioline International includes scholarly journals from Indonesia, India, South America, Cuba, and several African nations. For those publishers that want to do it themselves, Bioline partner EPT also publishes handbooks on how to convert print journals to digital form.

According to Leslie Chan, a University of Toronto, Scarborough, faculty member who works part-time with Bioline International, "Bioline is a low-cost, low-bandwidth solution" to distributing journals. It started in 1993 using e-mail to send articles and has continued to use technology that is low-cost and widely available. All abstracts and searching is free, but there is a fee to access full texts of articles if a library doesn't subscribe to the journal.

Bioline is trying to market subscriptions to its journals to library consortia in North America to get addition-

al development funds. Its aims: long-term archiving of electronic full texts, free access to full texts for developing countries, multilingual documents, and converting to open archive and metadata standards. Go to bioline.bdt.org.br for more information.

INASP

The International Network for the Availability of Scientific Publications (INASP), another U.K.-based initiative, aims to make the scientific journal literature of sub-Saharan African nations more available and help librarians and publishers in less developed nations learn how to publish electronically.

Started in 1997, African Journals Online provides indexing, abstracting, and tables of contents for the approximately 50 English-language scientific journals published in these countries. Some good science is being conducted in Africa, but African scientists are poorly supported and have great difficulties getting their findings disseminated.

According to Neil Pakenham-Walsh, program manager of INASP, almost all the African print journals have fewer than 100 paid subscriptions and virtually no advertisers. Cuts in serials budgets worldwide mean that "African journals are the first to be cut" and editors "don't get subsidy or support," said Walsh. INASP (www.inasp.org.uk) provides free photocopies for six months and is working toward links to full texts.

SciELO

Five years ago, Brazil decided to invest in improving the accessibility of Brazilian science after an article in *Scientific American* demonstrated how Latin American science was excluded from the major English-language databases (W. Wayt Gibbs, "Lost Science in the Third World," 8/95, p. 92-99). The Scientific Electronic Library Online (SciELO) is one outcome of that investment.

SciELO in Brazil now offers access to the full texts of over 50 scientific journals, and it plans to offer nearly 80 in the next year. It has twin goals: to in-



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crease the visibility of Brazilian articles and to improve the quality of Brazilian journals. Only 17 Brazilian journals are included in ISI's Science Citation Index, and most of the other valuable but perhaps more local journals got little dissemination before SciELO. Still, SciELO does not publish all Brazilian journals; it chooses the best and works with editors to improve the quality of their publications.

Abel Packer, director of the Latin American and Caribbean Center on Health Sciences Information, explained that the SciELO "model" is composed of several components that offer software and best practices for facilitating electronic publishing. SciELO first aims to improve the quality of Latin American journals and ensure they are created in digital forms, with appropriate hypertext links, following international standards for electronic publishing.

The second component is to take these higher quality digital journals and collect them into a SciELO web site. Packer explains that "SciELO sites are developed at national and thematic levels in order to maximize visibility and accessibility of collections and individual journals." Besides the Brazilian SciELO site (www.scielo.br), there are other regional SciELO systems, including those based in Chile, Costa Rica, and Cuba. A collection of the best public health journals in Latin America and Spain is "operated as a SciELO thematic collection" (www.scielosp.org). The final component is to expand the network of SciELO sites.

PubMed Central and more

Last year the National Institutes of Health (NIH), via its National Library of Medicine, announced a considerable extension of its popular PubMed service, which provides free access to the bibliographic Medline database with links to publishers' web sites for fee-based access to full texts. PubMed Central was to take this a step further and provide free access to full-text articles from selected publishers. (Read about the proposal at www.nih.gov/about/director/pubmedcentral/pubmedcentral.htm.)

The publishing community's response was swift and negative over what some saw as an anticompetition, government-sponsored intrusion.

At the IFSE conference, Ellis Rubinstein, editor of *Science*, declared that the PubMed Central project "has

foundered and will go nowhere." Frank Gannon, executive director of the European Molecular Biology Organization (EMBO), is concerned that PubMed Central would be a "monopoly by NIH" that might destroy traditional publishing and communication models.

Alternatives were proposed, including EMBO's E-BioSci, which, still in the planning stages, is a European reaction to PubMed Central. E-BioSci is envisioned to be an electronic linked collection of refereed journal articles, bibliographic databases, and biomedical data.

According to Gannon, "Its aspiration is not merely to make the existing [biomedical] journals more widely available in an electronic form but also to extend the web of information such that scientists can readily move from databases to other web sites in the scientific literature and vice versa."

BioMed Central (www.biomedcentral.com), another fledgling electronic journals project, has slightly different aims. Fiona Godlee, editorial director for medicine of BioMed Central, described it as a "peer review entity, an umbrella site for independent biomedical journals."

Professor Harnad urges authors to self-archive and publish freely in mainstream journals

The system will offer free access to the full texts of existing journals from nonprofit entities and, after peer review, will also publish original articles. BioMed Central supports "open peer review," meaning that both the author and the peer reviewer are in contact, and reviewers are told to act as mentors to improve papers rather than merely as judges. BioMed Central is "biased toward publication": it will publish as many articles as it can.

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Freeing the literature

A more radical solution is proposed by Stevan Harnad, professor at the University of Southampton, U.K. Harnad's passionate appeal is to "free the literature"—to take scholarly research arti-

cles and make them freely available through self-archiving on the web. Harnad believes that universities should mount e-print archives (using the new Santa Fe Convention for Open Archives) and make the products of scholarship freely and perpetually available to all. Free self-archiving software has been developed at the University of Southampton (for more details see www.openarchives.org and www.eprints.org).

According to Harnad, subscriptions, site licenses, and pay-per-view are all barriers to access; the only essential function of publishers is to facilitate the peer review process. All other processes he calls "add-ons...there is no justification to hold the literature hostage to add-ons and call them value-added; we need to separate the obligate [peer review] from the add-ons and let the market decide."

On second look, Harnad's solution is not quite as radical as it seems, because he encourages authors to submit their articles to major peer-reviewed journals after mounting them on their self-archive. Upon acceptance in a peer-reviewed journal, authors must make sure to retain the right to continue the self-archive and can make a link to the reviewed copy.

Harnad believes that most readers will prefer the free, self-archived version, but that the quality stamp of peer acceptance is an important quality filter. Harnad disagrees with the BioMed Central open reviewing model because he "doesn't want to build the expectation that the free online literature is of second quality." He urges authors to "have their cake and eat it, too" by freely self-archiving *and* publishing in mainstream journals.

No one solution

Whether the answer to high journal costs and declining access can be found by working with traditional publishers, accessing new nonprofit entities, or moving toward self-archiving, clearly the web offers a variety of solutions. In reality, no one solution should predominate—important journal literature from countries around the world is becoming available in many flavors and from many services. Getting this literature widely distributed is possible now as it has never been before. Scientists, readers, and libraries in both developed and lesser developed nations around the world will benefit.