The E-Journal: Recent trends/New Initiatives

Helen Fallon, Deputy Librarian, NUI Maynooth

Introduction

This paper opens with a brief examination of recent trends in scholarly journal publishing. This includes the rise in the number of titles, constriction of the publishing industry by mergers and acquisitions, and rising journal prices. Against this background, electronic journal developments are examined. Endeavors to maximize access to the journal literature through a variety of initiatives including open-archiving and co-operative publishing ventures are discussed.
The paper concludes with a look towards the future direction of scholarly journals.

Function of scholarly journals

Scholarly journals have existed for over 300 years. They help disseminate new findings and validate research results. Peer-review, the process by which a draft of an article submitted to a journal is distributed to experts in the field for approval before publication, helps to certify quality. It is also closely related to career progression and is increasingly used to evaluate grant proposals and is an important part of the university quality review process.

Growth of the commercial scholarly journal

Sixty years ago nearly all scholarly journals were non-commercial. Now most scholarly journals are commercial products and even those that are designated "nonprofit" such as the publications of the American Mathematical Society (AMS) and the American Chemical Society (ACS) are expected to produce revenue. This income is then used to support other activities. Journal literature is particularly important in the sciences and a significant number of new initiatives in scholarly publication relate to the science, technology and medical fields. This is also the area where journals are most expensive.

Since 1985 the number of published journals has almost doubled and individual volumes have tended to become larger. This reflects the increasing volume of research being undertaken internationally. According to Stephen Harnad, Professor in Cognitive Sciences at Southampton University, some 24,000 research journals worldwide currently publish some 2.5 million articles a year (Johnston, 2003). Alongside the growth in the number and size of academic journals, there have been significant price increases, with a 58% increase during the five-year period from 1998 to 2003 (LISU). Price increases have been highest in the areas of science, technology and medicine.

Changes in the publishing industry

Mergers and takeovers have characterized the publishing industry in the last ten years. Mergers constrict the market and lessen competition and thus frequently result in price increases. Major mergers include the merger of Swets and Blackwell in 2000, Elsevier's purchase of Harcourt for $5.7 billion and the merger of Kluwer and Springer, two of the top five scientific and medical publishers. The top five publishers now produce around 37% of the nearly 8,000 scientific journals covered by the Institute for Scientific Information (ISI) Web of Science (WoS) database. The top five includes Elsevier, which publishes 18 of the 25 most expensive scientific titles. Elsevier titles now account for approximately 25% of the Irish journal market. Globally US$7 billion is currently spent on scientific periodicals alone (Morgan Stanley, 2002). This is a major industry, in the control of a few large players.

Development of e-journals

In 1994, there were fewer than 75 peer-reviewed electronic journals. By 1998, approximately 30% of the titles in Science Citation Index (SCI) were available online. By 2002, this percentage was approaching 75%. In the case of the Social Science Citation Index (SSCI) 63% of the journals indexed had an online counterpart, while 34% of those indexed in Arts & Humanities Citation Index (AHCI) had electronic versions. (Orsdel, 2002). It is quite difficult to work out how many electronic-only refereed journals are in existence. While Ulrich's Periodicals Directory lists 4,600 e-only publications, most of these are newsletters and consumer periodicals (Tenopir, 2004). The majority of peer-reviewed academic journals that are available electronically have a print equivalent. However significant developments are taking place in the area of e-only journals and this is covered in the "open-archive initiatives," section of this paper.

Rise of hosting aggregators and publisher databases

Initially the electronic version of a journal was generally offered along with the print version, sometimes at no extra cost or for an extra cost of between 10% and 30%, but journals from small STM publishers sometimes cost as high as 200% to 300% extra for electronic. Increasingly, bundled sets of electronic journals "Big Deals" are being marketed. These have new pricing and access models. The "Big Deal" may come via a hosting aggregator and include titles from different publishers, such as Ebsco's "Academic Search Premier," with Ebsco taking on the role of a content broker.

Publisher databases such as Elsevier and Wiley operate on a similar basis but sell their own titles. They thus have more control of the content of the package. However journals do change publisher from time to time.

The "big deal" comes with conditions that don't apply to print journals. Libraries agree to subscribe to a package of journals, for an agreed period, subject to legally binding terms and conditions. Unlike in the print world, the Library does not own the journal. Rather it is paying for access to content rather than ownership, with various conditions attached. In the case of Elsevier, libraries cannot cancel print unless they substitute the title cancelled with another title of the same cost. University libraries become locked into a price for a fixed time period. Because the bundled set or "big deal," package represents a substantial investment, it is generally highly marketed and promoted by the Library in order to justify the cost. This may lead to the journals in the package being cited more, thus increasing the apparent value of these journals.

While libraries are increasing their journal holdings substantially by buying into big deals, they may be acquiring access to some titles that are not of high value to the teaching and research interests of the institution. "No cancellation" policies - sometimes imposed by vendors - are based on the false assumption that the research and teaching profile of universities stays the same over time. Libraries may also spend an increasingly large proportion of their budget on electronic packages at the cost of book purchases, thus adversely affecting the needs of undergraduates.

There is no doubt that "the Big Deal" concept has massively increased the number of journals academics, researchers and students have access to and has provided marvelous advantages including much larger collections, a multiplicity of search options, a single search platform, remote access and multiple simultaneous users. However, there are a lot of issues surrounding these "Big Deals" that academics remain unaware of and that the Library has to address. Academics often aren't aware of the cost of journals or "Big Deals," perceiving this as a library issue. The primary concern of the academic researcher is the reputation of the journal he/she publishes in. Of the Elsevier titles, 83% are ISI rated (Morgan Stanley, 2002), thus making them a very attractive as a publisher to academics.

Archival Issues

The availability of archives has been a major concern in relation to moving to an increasingly electronic environment. There have been developments in this area including JSTOR's Electronic-Archiving Initiative (www.jstor.org/about/earchive.html) and ScienceDirect's arrangement with the National Library of the Netherlands. The Library is the official digital archive for Elsevier Science journals and the LOCKSS project at the University of Stanford which caches e-journal content and retains it. 80 libraries and 50 publishers are now participating in a pilot project run by Stanford University (http://lockss.stanford.edu).

Electronic-only models

In January 2004, a survey was carried out via the UK electronic discussion list *Lis-e-journals* to determine if libraries were moving to electronic-only models of journal provision. Of the 31 libraries that responded to the survey, 27 were academic, 3 special and one was in the health sciences area.

80% of respondents had already moved to electronic-only for at least part of their collections.

45% had withdrawn print back copies of titles that are available in bundled electronic archive deals such as JSTOR. Few had discarded these titles.

80% had stopped taking print versions of titles included in bundled sets. Their main saving was in space and binding costs. With titles that were deemed to be very important, academic departments generally had to give their consent to the cancellation of the print copy.

Only 22% of respondents had decided that new individual journal subscriptions should be electronic-only, rather decisions were made on a case-by-case basis.

Concerns expressed by respondents about moving to an e-only model included being locked into electronic deals, especially those deals which have proved so popular with the users that cancellations seem unthinkable; concern about cancellation policies,

future prices and VAT. In the UK print periodicals are given a zero vat rating, while electronic databases are rated at 17.5%. In Ireland print journals are subject to 13.5% VAT and electronic databases to 21%. Other concerns included loss of access to journals that change publisher, the complexity of deals, fair allocation of funds, access to PCs and network printers, and lack of information about what titles in bundled sets are being used.

Freeing up the scholarly literature

Journal literature is vitally important to researchers, particularly in the science, technology and medical fields, but journal prices have grown out of all proportion with inflation and library budgets. Maintaining subscriptions particularly in times of cutbacks, may be eating into the book budget thus affecting the information needs of the undergraduate population. Under the current publishing model academics do research – often with government funding, write up journal articles and assign copyright of the article to a journal publisher. Many academics are unaware of copyright issues. The publisher then sells the information provided by the researcher back to the Library in the form of a journal. In turn, the government gives the Library money to buy the journal.

This publishing and access model may hinder rather than help scholarly communication and research. The results of hundreds of thousand of pounds of research funding may be seen by only a small fraction of those with interest in a topic.

New initiatives to free up the literature include

- E-Print Archives
- Open Access Journals
- Co-operative/Collaborative Publishing Ventures

E-Print Archives

By 2004, two such archives have been developed in Ireland – at NUI Maynooth and Dublin City University. They work on the principle of self-archiving using software such as Eprint.org and Dspace which is freely available via the web.

According to JISC (Joint Information Systems Council) British universities spend £76 million a year on subscriptions to journals. Harnad suggests that if authors were to self-archive (e-print) at least 1.25 million articles could be made open-access overnight (Johnson, 2003). Copyright remains an issue. However many journals will allow some level of self-archiving – often pre-print. A list of journals that allow self-archiving – either pre or post print is available from Project Romeo at www.lboro.ac.uk/departments/ls/disresearch/romeo/Romeo%20Publisher%20Policies.htm

Open Access Journals

Open-Access journals are freely available to all via the web. Open access does not equal free access; rather a different pricing policy is applied. Authors pay for dissemination rather than libraries or other organizations paying for content in the form of subscriptions.

The biggest publisher in this area is BioMed Central (BMC), which started in 2000. It produces over 100 peer-reviewed journals in medicine and life sciences, most of which do not have a print equivalent. BioMed Central provides much of its content free but generally charges authors a ST£350 processing fee for each article accepted.

As an alternative to individual payments, organisations can join and pay a lump sum annually. In the UK JISC (Joint Information Systems Committee) funds membership for all UK universities. There is currently one Irish member - National University of Ireland, Galway.

There is evidence that publishing in BioMed Central increases visibility of research, a factor which is very important to academics. BioMed Central journals are indexed by the key abstracting and indexing sources including Chemical Abstracts Service (CAS), BIOSIS and Web of Science (WOS) and some are given impact factors.

Similar open access initiatives include the Public Library of Sciences (PloS) and Highwire Press. Public Library of Sciences (PloS) launched PloS Biology in October 2003. Its startup was funded by a grant of several million dollars from an American charitable foundation and is the first academic science journal to advertise on US prime-time television. It plans to use the pay-for-dissemination rather than access model charging authors $1,500 per published article.

Unlike traditional scholarly journals where authors hand over copyright, in the open-access model authors retain copyright and can reproduce the article for non-commercial purposes. In the author pays model, the cost of publication could become a normal part of grant applications. Funding bodies could earmark a few percent of the research grants to cover article processing charges, recognising the cost of dissemination as a legitimate component of the total cost of research. Funders could make open access publication a condition of funding. This issue is of major concern to funding bodies and recently the Wellcome Trust, a charity which supports scientific research, issued a very comprehensive report highlighting the open access model (Wellcome, 2003).
In January 2004 the UK House of Commons Science and Technology committee announced an inquiry into scientific publication. The committee is concerned that researchers, students and academics have access to the publications they need to carry out their research effectively. The OECD have also agreed to work towards greater access to research data from public funding.

Co-operative/Alternative Publishing ventures
SPARC (Scholarly Publishing and Academic Resources Coalition) is a global alliance of libraries and research institutions working together to lower the cost of scholarly publications. SPARC explores potential partnership ventures, particularly between professional societies and university presses interested in launching new publishing initiatives. It aims to introduce competition into the market for scholarly information by launching electronic only journals as alternatives to very highly priced journals. SPARC's first partnership was with the American Chemical Society (ACS). ACS agreed to publish one new electronic peer-reviewed journal each year for three years. The first publication from the ACS partnership was "Organic Letters," an alternative to the publication "Tetrahedron Letters." It offered free tables of contents and the ability to buy individual articles. At $2,600 per year for a full subscription, it is one third of the price of "Tetrahedron Letters."
In October 1998, SPARC and the Royal Society of Chemistry (RCS) launched another peer-reviewed electronic journal "PhysChemComm," at a quarter of the price of the leading competitive journal. A third SPARC alternative publication "Evolutionary Ecology Research" (EER) was announced in 1999 and the editorial

board from the old journal left to help establish the new electronic journal. Increasingly editors, authors and scholarly societies are approaching SPARC to discuss publishing. Of the many SPARC projects, some have open access, whereas others remain subscription based.

New sources of funding

From 1999 to 2003 there was an unprecedented growth in research funding in Ireland with €1.3 billion allocated to research. This money was primarily invested in universities via the PRTLI (Programme for Research in Third Level Institutions) and Science Foundation Ireland (SFI) initiatives. Recently it has been agreed that a portion of the funding of the overheads of each research grant will go to the Library for research support. Support from Science Foundation Ireland (SFI) for the purchase of scientific databases, is also under negotiation.

Increased Co-operation

With the rise of aggregators and business models that may not favour libraries, has come consortia agreements, whereby groups of libraries get together to negotiate a price with a supplier. While this may increase buying power, it does have the disadvantage that libraries are duplicating their holdings and this may militate against the development of specialist research collections of journals. Other co-operative endeavours include ALCID (Academic Libraries Co-operating) and SCONUL Research Extra.

Conclusions

While few institutions have moved to a completely e-only model, there is considerable movement in this direction. Sometimes this is underpinned by a strategy or policy, but more often it is a reaction to other pressures such as lack of space. However the short-term benefits of saving space by moving to electronic-only may be outweighed by another set of problems in the longer term. Libraries need to avoid making short-term decisions that ignore long-term sustainability. Library staff need to be aware of open archive initiatives and to make academics aware of this and other initiatives to free up scholarly literature.

The next years will see an increasing move to online and bigger profits for a smaller number of large publishers. While new models of dissemination such as open archives will develop further, the scholarly journal will remain the main method of dissemination of research findings for many years to come.

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