The Move Towards Open Access of Research Output: Briefing Paper

Introduction

There are a number of major problems with the current system of research publishing:

- universities are locked into paying escalating journal subscription prices, while at the same time subsidising the publishing process
- universities are giving away copyright of research material to commercial publishers free of charge
- academics are being prevented from achieving wide dissemination of their papers by publishers who restrict circulation to subscribers only
- academics have problems accessing papers in their field because of publishers' restrictions on access

There is now a major international movement aiming to address these problems through `open access' dissemination strategies, where readers are given free and unrestricted access to the content. Support for open access has been growing in the research community, including statements from funding bodies such as the Wellcome Trust, several US foundations, and the German research councils. The issues have recently been widely debated in the broadsheet press and peer-reviewed journals (including *Nature* and *Science*).

The Problems

For academic researchers

For academic authors, journal articles are `give-away literature' intended to achieve impact not income. Authors want to be influential in their field and to be cited by colleagues. It is in their interests that their work should be disseminated as widely as possible. Publishers want to generate income from these papers and so charge (substantial) subscription fees whilst restricting circulation. Publishers also often require authors to sign over copyright completely, preventing them from disseminating their work in other ways and taking the ownership of the paper away from the academic and their institution.

There are also problems for researchers as readers of the literature. With over 24,000 refereed journals now being published, any one institution struggles to subscribe to even a third of these. The effect is that most of the refereed literature is not easily available to most researchers.

For institutions

In the current system, universities produce research output, give it away free of charge to commercial publishers and then buy it back from the same publishers at high prices. Universities pay academics to give away their services as authors, editorial board members and referees, all normally free of charge. Publishers, of course, manage peer review and prepare papers for publication, but the major costs in the process (authoring and refereeing content) are not borne by them. Despite this, publishers often require copyright itself to be transferred to them. Universities then buy back the content several times over: in journal subscriptions, photocopying licences, study pack charges, etc. Public money is used to fund research, fund its publication and fund the purchase of the published papers. In effect, universities are giving a massive subsidy to commercial publishers.

The journal is still the primary vehicle for communicating research results, and so access is vital for academics wishing to remain active in a research field. In this captive market, journal price inflation is a major problem. Between 1986 and 2000, journal price inflation was 291%, while the retail price index rose only 74%. Even the development of e-journals has not helped to lower prices, in spite of the reduced costs of production for publishers. There is often a misunderstanding that all material available on the web is somehow free. In fact, publishers are attempting to establish e-journal pricing models that maintain or increase their income.

Open access solutions

Open access journals

Alternative publishing ventures are currently being set up from within the academic community, which offer new inexpensive (or even free) peer-reviewed journals. There are over 550 open-access journals currently registered , which can compete head-to-head with expensive commercially-produced titles. For example, The Public Library of Science has recently launched its open-access journal *PLoS Biology*. JISC has arranged a deal with the open-access publisher

BioMed Central to allow all UK HE researchers to publish for free within their peer-reviewed journals.

Even so, the number of open-access journals is small compared with the number of subscription journals and it will take a long time before this changes. In the short term, it is hard to see how an academic would turn down the chance to publish in, say, *Nature* just because there is an open-access journal that covers the same area. The more practical solution in the short term is to encourage the use of institutional open-access archives.

Open access archives

It is now possible for individual academics to put their research papers into online repositories and make them freely available on the web. Examples of these have emerged for subject communities, including *arXiv* for Physics. Institutions such as MIT are now setting up archives and seeing them as an opportunity to manage and disseminate the institution's research output – the institution's 'information assets'.

The nationally-funded SHERPA project led by the University of Nottingham, is encouraging the use of institutional open-access archives as a supplement to traditional publication. Academics are being encouraged to submit their papers to their institutional archive as well as publish them in journals. As part of SHERPA, 18 major UK research universities or colleges are setting up institutional archives and encouraging their use.

These archives will form part of a world-wide network of free cross-searchable so-called 'e-print' repositories. Together all the repositories create the potential for a global virtual research archive which can facilitate the rapid and wide dissemination of research. Readers can easily search across these repositories using a single search engine and access the material freely. Evidence is emerging that freely-available papers are not just easier to access but have a greater impact – they are cited more.

Key issues

Copyright and IPR

Some institutions have begun to investigate and clarify this issue as they see potentially valuable IPR leaking away into the control of external commercial interests. Many publishers already allow papers to be deposited in open-access archives, but where they do not, authors should be discouraged from signing away copyright completely and retain the right to disseminate a work electronically. SHERPA can assist academics with such copyright agreements for their papers and negotiating changes with publishers.

Quality control and RAE

Peer review is an important foundation of research communication and needs to be retained. Journals currently manage this process. Whilst this continues to be the case, it is still in the interests of individual researchers to submit their papers to respected peer-reviewed journals to maximise RAE ratings. They should still do this but *also* to deposit their work in an institutional archive. The archives will thus contain high-quality peer-reviewed papers which are freely available worldwide. From an institutional point of view, an e-print archive may come to be an effective way of managing institutional information assets for RAE submission, consultancy work and other out-reach activities.

Recommendations

- The initiative to provide the *Nottingham ePrints* archive should be endorsed by the University and academic staff encouraged to participate and supported when they do so.
- As a priority, authors should be discouraged from signing over their copyright to publishers or at least encouraged to retain electronic dissemination rights.
- Wider consideration should be given to how the institution's information assets can be managed and disseminated.
- Where possible these issues should be considered by Russell Group VCs and Universities UK (or other similar fora) to enable co-ordinated action where appropriate.

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