

How can there be open access to journal articles?

The possibility of open access to journal literature has generated considerable discussion in the academic, publishing and library communities. This has largely centred not on the desirability of open access in principle but upon its practicability and its effect upon the traditional journal publication system. This article will examine points made in the public discussion of the two major routes to open access outlined in the Budapest Open Access Initiative (BOAI), author self-archiving in academic repositories and the publication of journals using new toll-free economic models. Issues both for and against open access have been raised by authors, by publishers and by librarians, and a realistic approach to the feasibility of open access is important. The conclusion reached will be that open access to journal literature is feasible through either BOAI strategy but that more investigation is needed of both the positive and the negative messages received from stakeholders with as much experimentation of different models as possible.



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Introduction

Open access to articles published in academic journals provides an opportunity for humankind to use information for personal and community development. The availability of this opportunity provides a challenge to authors, publishers and librarians in their response. There are some who will see the question in the title of this article as rhetorical, expressing a view that open access is a beautiful dream but totally unrealistic. Others may see the question as an invitation to consider how an achievable goal can be reached. Whatever our starting-point on the topic of open access, there can be no doubt that the issue of the feasibility of open access must be addressed. It is too important a subject to everybody in the world of academic journals either to be ignored or to be treated superficially. Opponents of open access owe the topic serious consideration and supporters of open access must be realistic in their promotion of new models for scholarly communication. This article will therefore take a hard look at the feasibility of open access, admittedly starting from a wish to see the opportunity realized and looking at ways in which the obstacles can be overcome on the various roads to open access.

It is customary to begin any statement on open access with a definition of the term. The definition

adopted in this article is that of the Budapest Open Access Initiative (BOAI), the seminal statement by advocates of open access resulting from a meeting in Budapest in December 2001. The BOAI understanding of open access is contained in these words from the statement at www.soros.org/openaccess/ : “By ‘open access’ to this literature [i.e. peer-reviewed journal articles and un-reviewed pre-prints] we mean its free availability on the public Internet, permitting any users to read, download, copy, distribute, print, search, or link to the full text of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the Internet itself”. The BOAI definition makes no presumption about the future roles of the various stakeholders in journal literature. Open access is given as the goal, two strategies are offered to achieve that goal and the stakeholders are invited to participate in the opportunity to achieve that goal.

How can scholarly communication change?

Open access is a new form of scholarly communication. Any change to the scholarly

communication process has to be accepted by the academic community and cannot be imposed upon authors or institutions. Academic authors are wary of any mandate from their employers appearing to restrict their right to publish their work in the way they consider best. They are also reluctant to change to new forms of publication without reassurance from their employers that promotion and research funding prospects will not be harmed. For their part, institutions are reluctant to support change unless it can be proven to be in their best interests. On the other hand, there is a recognition by both authors and institutions that scholarly communication is changing, largely due to the use of new technology. There is also an increasing awareness of the *need* for change, to mend the link between research and the dissemination of research broken in the current model when authors hand over their text to a publisher. Authors currently lose control of the way in which their work is disseminated and at what cost. There is no reason why further change should not come about, but any change has to be accepted by a large number of individuals and institutions worldwide.

If the open access movement is to succeed, therefore, its advocates have to convince a large number of individuals and institutions across the world that open access provides a better form of scholarly communication than the existing toll-based structure, or at least that the open access and toll-based systems can co-exist. (Although open access and toll-based communication are often presented as alternatives, in some respects – for example if an author self-archives her or his work as well as publishing in traditional journals – the two models are not in conflict.) The open access movement places a high priority upon advocacy, telling authors, university heads and funding agency leaders of the advantages to open access. There is a good story to be told in this advocacy work, in the benefits to authors and to research funding agencies to be derived from greater readership of research reports. Open access can be demonstrated as beneficial. It also has to be demonstrated as feasible, just as practicable as the current toll-based system of scholarly publishing.

Self-archiving : an easy route to open access. (So why are more authors not using it?)

The number of authors self-archiving is difficult to establish. A considerable number of authors do deposit the text of research reports, teaching materials and pre-prints or post-prints of journal articles into departmental or university servers or maintain personal web pages, but it seems likely that most authors do not. The excellent e-prints web site at the University of Southampton* contains answers to many objections that might be raised to author self-archiving of journal articles. So why is self-archiving not more popular? Scholarly communication is a cultural process not always conducted according to the rules of logic. If self-archiving is to progress, the concerns of authors and institutions have to be addressed, not simply by producing counter-arguments but by looking at the context within which the concerns are expressed, even if the concerns are based upon false perceptions. Many of the concerns expressed by authors indicate a feeling that self-archiving is outside the mainstream of normal scholarly communication, a good thing to do if you have the time and opportunity, provided that it does not interfere with the 'normal' process of publishing.

For the high-energy physics community self-archiving *is* in the mainstream of scholarly communication, in the form of the Arxiv web site.** Are there lessons to be learned for self-archiving by other subject communities? Although traditions do vary between subject communities, it seems unlikely that the publication imperatives in physics are so unique as not to apply to at least some other disciplines. The key factor in the success of Arxiv has been speed of availability of the text of journal articles, enabling them to be read far ahead of formal publication. Another factor is that Arxiv has not been used for any other purpose than immediate accessibility. The other functions of a publication – quality control, long-term record and the academic reward functions – have continued to be handled by the traditional journals. These functions have ensured that the traditional journals have continued to flourish

*www.eprints.org

**<http://arxiv.org/>

despite the toll-free availability of the text of journal articles in Archiv.

Self-archiving has to be marketed to other subject communities as adding value to the published record. The value added by Arxiv is fast and widespread availability of research results. In every discipline researchers and students are looking for the most up-to-date information, the latest research results. Repositories of journal articles self-archived by authors can provide users with that service in a way that traditional journals find difficult (although not impossible) because of established editorial procedures. Even when traditional journals are able to offer fast publication, their toll-based structure restricts use, so repositories of articles self-archived by authors can offer a bonus: wider readership as well as faster publication.

The success of the physics Arxiv demonstrates the advantage of a subject approach to self-archiving. Most new repositories being set up within universities provide an institutional rather than a subject approach. While these initiatives should be encouraged, missing from the landscape at the moment are more subject-based repositories. The success of PubMed Central* shows that there is a role for such subject repositories in disciplines other than physics, and the PubMed Central approach of archiving complete journals rather than relying on the archiving of single articles by authors illustrates the difference between the life science and the physics approaches. PubMed Central adds value to the text of journal articles through the links to research data and also by providing an archive of journals published by different publishers. This kind of repository provides a service to the academic community that is not provided by traditional journal publication, a benefit which places archive repositories in the forefront of developments in scholarly communication rather than an optional extra in the current system.

How can open access journals succeed?

New open access journals are succeeding on the basis of quality. Like any new journal they have to

attract good authors and maintain high editorial standards. The new *Public Library of Science Biology* journal has also benefited from good publicity. Any publisher will try to secure good publicity for a new journal, and publicity has its short-term value, but in the long term it is the quality of the journal that determines its success or failure. PLoS is no different from other publishers in that the long-term financial stability of its journals will depend upon attracting good authors. For traditional publishers good authors result in sales to libraries, for PLoS good authors will result in securing sufficient publication payments to be viable once the foundation grant has been spent. The PLoS foundation grant is equivalent to the subsidy a traditional publisher might give to a new journal from the company financial reserves. Essentially, therefore, a new open access journal will succeed or fail on the same basis as a new subscription-based journal. Some critics of open access feel that the present system of payment by libraries enables the publication process to be totally impartial, whereas any system requiring payment by authors or funding agencies will introduce a bias in favour of publication rather than rejection of manuscripts. Rejection rates already vary from journal to journal and there is no evidence that open access journals have any tendency to reject fewer manuscripts than subscription journals, but the issue has to be taken seriously and monitored by open access journals if they are to continue to succeed on the basis of quality.

The conversion of an existing journal to open access depends on a successful transition from a subscription model to a new model funded by publication payments, and the publisher has to be confident that the new model will be sustainable in the long term. It would be wrong to consider this question in terms of a single open access economic model. Each publishing situation has to be considered separately in the light of factors such as the number of personal and library subscriptions, the level of research funding available to authors, the geographical spread of both authors and subscribers, the level of advertising income, and so on. The most appropriate economic model for open access will emerge from such an analysis of particular situations. For example, in a situation where most income is derived from North American and European

*www.pubmedcentral.nih.gov

library subscriptions, and research funding is low, a way could be found to enable open access by converting existing library subscriptions into publication payments. This approach would enable a stable transition while giving the scholarly world the benefits of open access. The existing scholarly communication process is supported by many billions of dollars, euros or pounds channelled through research funding agencies, libraries, learned societies and other institutions. There is no reason to believe that an open access scholarly communication system will be any more expensive overall than the existing subscription-based system, and the benefits of open access can be achieved through an imaginative approach to funding. The variety of approaches possible will also influence choices by authors. It would not be unreasonable for a journal offering a high-quality service to the academic community to charge a higher publication fee, and this relationship between service and price will be more transparent than under the present model, in which payment by libraries is divorced from the service to authors.

Conclusion

There is no reason to believe that open access to research reports and journal articles cannot be

achieved. If the benefits of open access are understood and valued, ways will be found to implement both of the BOAI strategies. Equally there has to be more understanding of the issues raised by agnostics, sceptics or critics of open access. Open access is part of a complex system of scholarly communication. All of us working within that system need to understand more fully the way it works, and a combination of more open debate and more objective research will assist that understanding. The debate and the research need to be conducted in a collaborative way. Success or failure in taking the open access opportunity will depend on co-operation between members of the academic, publishing and library communities. Each community can make a positive contribution to an open access world, provided that there is a willingness to approach change in a positive way. To quote from an advertisement for the Linux operating system: "the future is open".

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