

**House of Commons  
Science and Technology Select Committee**

**Inquiry into Scientific Publications**

**Memorandum submitted by  
The Royal Academy of Engineering**

**February 2004**



- 1. What impact do publishers' current policies on pricing and provision of scientific journals, particularly "big deal schemes", have on libraries and the teaching and research communities they serve?**
- 1.1 Publishers' pricing policies for scientific publishing have had, and continue to have, a significant negative impact on libraries and the teaching and research communities they serve.
- 1.2 It is well documented that after more than a decade of price inflation averaging +10% a year, UK higher education libraries are unable to purchase many of the journals which researchers deem essential for their work because of a lack of funding. In comparison the average US research library purchases four times as many research journals as a UK research library.
- 1.3 The underlying causes of this price inflation are a subject of debate but include a rise in the average number of pages or articles in a journal volume. However, perhaps the major underlying cause is the monopoly position of the publisher. Authors are required by publishers to transfer copyright to the publisher when they submit an article for publication. Journal articles are not interchangeable; their uniqueness is one of their essential qualities. The publisher therefore becomes the monopoly supplier of the articles published.
- 1.4 Evidence of this monopoly position is provided by the profit levels of commercial publishers of scientific/technical/medical journals: Reed Elsevier, for example, reported an adjusted operating profit margin for 2002 of 33% for its Science & Medical Division (the most profitable of its four divisions). The position of the leading commercial publishers has been further reinforced in recent years as a result of a spate of merger and takeover activity. Even learned societies seek to subsidise other activities from surpluses on their journal publishing operations by extracting from universities money over and above the cost of the production and distribution of their journals.
- 1.5 It is becoming increasingly difficult to resource adequately the library requirements associated with new and developing research interests; it is frequently the case that academics are advised that to fund journals in new research areas it will be necessary to cancel other titles (which may already be perceived as "core") of similar cost.

- 1.6 Although articles can be obtained via inter-library loan schemes, they are not immediately available to hand. This deters some researchers from requesting information that could be of importance to their research.
- 1.7 The issue of “big deal schemes” is perhaps more complex and more mixed in its impact. These schemes are often multi-year, forcing libraries to commit future budgets before either the budgets themselves or new claims upon them are known.
- 1.8 The availability of electronic journals and related sectoral initiatives (e.g. the Pilot Site Licence Initiative and similar subsequent developments) has enabled libraries to increase the number of journal titles they can make available to their users. Such deals, for instance, are of the “print plus” variety where the individual institution will pay a mark-up on the cost of their existing print journal subscriptions and, in return, receive electronic access to the full range of titles offered under the deal. However, the library has no choice but to take the whole package. This drastically reduces the library’s control over the journals it makes available and its ability to fine-tune the deployment of its budget. Although some of the additional journals are useful, others are not.
- 1.9 Initially librarians and academics welcomed “big deal schemes” since it appeared that by spending a little extra there was a significant gain in access to sources hitherto impossible to afford. However, because of the high rates of inflation, the length of the deals and the inflexibility surrounding cancellations there is increasing disquiet with “big deal schemes”. They are in effect a barrier to access. Ultimately it may be that in retrospect these deals are seen as a backwards step.
- 1.10 An additional problem for university library budgets in the shift from print to electronic publication arises from the fact that electronic publications are subject to the full rate of VAT, whereas printed publications are zero-rated.

- 2. What action should Government, academic institutions and publishers be taking to promote a competitive market in scientific publications?**
- 2.1 Given the monopoly position of publishers, and the recognition by the Office of Fair Trading<sup>1</sup> that “the market for STM journals may not be working well” and that “many commercial journal prices appear high, at the expense of education and research institutions”, intervention by the competition authorities seems necessary.
- 2.2 Future merger proposals should be strictly monitored and investigated, to avoid the further enhancement of a monopoly market. However, given the international nature of the journals market, this will require co-operation with other nations’ competition authorities.
- 2.3 A review of pricing methods should be implemented to ensure that they are transparent. Currently there is a self-reinforcing hierarchy of journals where the best articles are submitted for publication in the best journals, which thus retain their positions in the future. This limits competition, because it is almost impossible to set up a prestigious journal from scratch.
- 2.4 Government could ease the pressure on research library budgets by exempting educational institutions from payment of VAT on electronic information resources, including electronic journals.
- 2.5 The development of institutional article web repositories has made it feasible to consider a network whereby all researchers will be encouraged to ‘self-archive’ their articles, which will then be accessible without charge. The prototype for such a repository is the US-based high-energy physics archive that has been in existence for more than a decade. This has become an essential source for all such physics researchers.
- 2.6 The Joint Information Systems Committee (JISC) has funded a number of projects in the UK, in which university libraries are playing a leading role. Experience to date suggests that the technical issues are relatively easy to solve, but encouraging researchers to deposit their articles is more problematic. One major

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<sup>1</sup> Office of Fair Trading. ‘The market for scientific, technical and medical journals’. September 2002, p.1.

reason for this is the perception that copyright transfer prevents such an action: this may be a barrier in some cases, but 55% of publishers already allow submissions to be deposited in this way. Self-archiving can occur alongside traditional publishing. There is little or no evidence that open access undermines the commercial position of traditional publications. Such a process would be greatly facilitated if project funding from the Research Councils and similar bodies included a condition that resulting research should be publicly available without precluding researchers from continuing to publish in the standard peer-reviewed journals.

2.7 In promoting a competitive market universities could also group together (e.g. under Universities UK) to bulk buy journals and drive a harder bargain with the publishers.

- 3. What are the consequences of increasing numbers of open-access journals, for example for the operation of the Research Assessment Exercise and other selection processes? Should the Government support such a trend and, if so, how?**
- 3.1 “Open-access” journals are freely available to all web users. They are financed from fees to publish in them, as opposed to subscriptions by purchasers. The expectation, however, is that author fees will be paid from research grants. The content is available to all without financial barriers.
- 3.2 JISC has recently brokered a deal with the biggest open-access journal publisher, BioMed Central, to waive the \$500 per article author fee per accepted article for UK higher education researchers, in order to encourage them to try this new form of publication. JISC is also inviting bids to fund, on a pilot basis, further examples of “open-access” publications. In the medium term, the survival and growth of open-access journals will depend on their ability to attract quality submissions and the number of citations to articles in them. This discipline should ensure that peer review remains stringent, and that ability to pay is not the main criterion for acceptance.
- 3.3 It would also be an extremely important step forward if funding bodies agreed that authors’ publication fees were an appropriate charge on research funds. The Wellcome Trust has taken a lead in this respect in the UK. In the Berlin Declaration late last year, all of Germany’s principal scientific and scholarly institutions, including the Max Plank Society, as well as a growing number of their counterparts in other countries (e.g. the CNRS in France) have pledged their commitment to “open access” in scientific and scholarly research.
- 3.4 Increasing numbers of open access journals may, over time, cause the impact factors of certain titles to change. Electronically available publications may well have higher impact, as they are available more widely. This is bound to influence research behaviour and the operation of the Research Assessment Exercise (RAE).
- 3.5 It is thought to be advantageous if the Science and Technology Select Committee were to recommend that all authors, whose

research is funded by the public purse, should place a copy of their final publication in an Open Archive repository or journal.

- 3.6 It is proposed also that the Select Committee asks the Funding Councils to review their approach to assessing research impact, and through agencies, such as the JISC develop model publication licences and procedures which will promote open access.
- 3.7 Authors, whose research is funded by the public purse, should be encouraged to not sign away copyright in their material to a commercial publisher and that the Funding and Research Councils budget for the payment of author charges in research grants.

**4. How effectively are the Legal Deposit Libraries making available non-print scientific publications to the research community, and what steps should they be taking in this respect?**

- 4.1 The Legal Deposit Libraries Act 2003 is critical in terms of securing the deposit and preservation of non-print scientific publications. The role of these libraries should be defined as part of a national strategy to secure, maintain, manage and make available the archive. It will take time and significant resource for this to be implemented fully. Government must provide sufficient funding to ensure the long-term preservation of this archive material.
- 4.2 The maintenance of e-sources in perpetuity demands an ongoing investment in equipment along with the replacement cycle costs that are involved. Additionally, it is difficult to predict what media may become available in the future requiring the wholesale transfer of data. It would be naïve to think that new legislation alone will guarantee preservation and access.

**5. What impact will trends in academic journal publishing have on the risks of scientific fraud and malpractice?**

- 5.1 On the basis of appropriate quality control procedures being in place, it may be argued that the method of publication should not affect adversely the present level of risk. Safeguards need to be put in place to ensure that articles deposited within institutional repositories cannot be amended once entered. This would help alleviate concerns over which source to cite when there is the potential for different versions of the same article to exist in differing formats and repositories.
- 5.2 Increasing numbers of publications and hence submissions may result in a less efficient or rigorous reviewing process but the best long-term defence is a thriving commercially led research publication. The broader the access to a published article, the more likely it is that any fraud or malpractice in it will be detected. Additionally, the practice of using large international editorial boards and multiple geographically spread editors is good to help identify fraud and to exclude it from archival journals.
- 5.3 Even with adequate peer review procedures there remains the issue of plagiarism. Evidence of abuse of the web demonstrates that fraudulent use of information is already with us. However, although e-sources are more open to manipulation the development of anti-plagiarism software means it is easier to detect and therefore restrain this type of activity.
- 5.4 If copyright is to be retained by the authors then it will be for academic institutions or government, rather than the commercial publishers, who will have to be prepared to take legal action in response to acts of plagiarism.

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