KNOWLEDGE EXCHANGE BRIEFING PAPER ON JOURNAL BUSINESS MODELS

Knowledge Exchange

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Knowledge Exchange is a co-operative effort that supports the use and development of Information and Communications Technologies (ICT) infrastructure for higher education and research.
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Denmark's Electronic Research Library (DEFF) in Denmark
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Over the past few years many studies have been published on the costs and economic benefits of journal business models. Early studies considered only the costs incurred in publishing traditional journals made available for purchase on a subscription or licensing business model. As the open access business model became available, some studies also covered the cost of making research articles available in open access journals. More recent studies have taken a broader perspective, looking at the position of journal publishers in the market and their business models in the context of the economic benefits from research dissemination. All links provided in footnotes in this Briefing Paper are to studies available on open access.

The "toll-access" and "open access" journal business models.
There are two basic models used to fund the dissemination of publicly-funded research through articles published in journals. Currently the most common business model recovers the cost of publication through a subscription or a licence or a payment for an individual article. This model is described for convenience as the "toll-access" model, access to the content of the journal or an individual article depending upon a payment by the user or the user's intermediary, such as a library. Growing in importance is an alternative business model which recovers the cost of publication through a payment in advance of publication. This model is described as the "open access" model, the payment in advance of publication enabling the content to be made available to users without any payment by the user or the user's intermediary. The publication payment may be made by an individual author (hence the frequent description of this model as "author-pays") or – more commonly – by the author's funding agency or employing institution. Under either business model the cost of publication may be supported by additional sources of income such as advertising revenue. Some publishers use only one of the two basic business models but increasingly publishers operate with a mix of the two models.

Costs incurred in the two business models.
Many publication costs are common to the two basic business models. Most toll-access and open access journals incur similar costs in preparing articles for publication and in ensuring their quality, normally through a peer-review process. All journals incur an element of editorial cost for all articles submitted for publication whether or not the article is eventually published (this cost is often described as the "submission cost"). The two basic business models also incur different costs which are derived from the fundamental difference between the two models. Journals published under the open access model do not incur as great an expenditure on marketing, because the income stream does not depend upon selling the journal to users or users' intermediaries, although some costs are incurred by open access journals in attracting authors. Journals published under the open

access model incur possibly higher costs for the collection of their income, as the business model is based upon payment for individual articles. Toll-access journals may incur lower costs in the collection of income because much of their income will come through subscriptions to a large number of articles or journal titles. One factor which has been changing the cost structure for both toll-access and open access journals is the move to electronic publication, which is reducing editorial costs but which will increase the cost of investment in equipment and systems. As well as incurring differing costs, the two business models may also lead to different funding flows within the scholarly communications system, as differing costs may be met by different stakeholders in the publishing process.

The cost of publishing a journal.

Each journal has its own cost profile, but a number of studies have been published over the past twenty years providing information on average costs. Donald King and Carol Tenopir have published several studies, calculating an average cost per article published and relating the cost of a journal to the number of subscriptions needed to recoup that cost[1]. Tenopir and King began their research before the advent of e-journals on a large scale but they have up-dated their cost calculations to take into account the electronic format of traditional journals. A more radical approach to the potential of the electronic format was taken by mathematician Andrew Odlyzko in 1994, in an article entitled "Tragic loss or good riddance? The impending demise of traditional scholarly journals"[2], in which the estimated lower cost of electronic publication was predicted to challenge the survival of the journal itself. Odlyzko's forecasts have not proved to be accurate in detail, as long-standing journals have flourished rather than

1. A useful article by Donald King appeared in Learned Publishing vol 20 no2 (2007), pp 85-106 http://alpsp.publisher.ingentaconnect.com/content/alpsp/lp , and this article includes a review of earlier studies on publishing costs. A shorter paper presented by King and Tenopir at an ICSU Workshop in 1998 is "Economic cost models of scientific scholarly journals" available at http://www.bodley.ox.ac.uk/icsu/kingppr.htm .
2. Text available at http://www.dtc.umn.edu/~odlyzko/doc/tragic.loss.txt .

disappeared through the change to e-format. Nevertheless changes in the publishing and research environments led to studies which looked not only at the cost of publishing a journal but also related that cost to the overall economic structure of the journals market.

The nature of the market for scholarly journals.

The debate on journal business models was moved on through two studies SQW Limited undertook for the Wellcome Trust in 2003 and 2004. The first study was an "Economic analysis of scientific research publishing"[3] which looked at publishing costs in the context of cost to the purchaser of journals and came to conclusions about the nature of the market. This study raised the possibility of interventions in the market by funding organizations to increase access to publicly-funded research. The second study, on "Costs and business models in scientific research publishing"[4], was the first study to make a direct comparison between the costs of the toll-access and open access publishing models, and the study concluded on the best evidence available in 2004 that "open-access, author-pays models appear to be less costly and to have the potential to serve the scientific community successfully". The authors of the study did however make it clear that the study "does not undertake a full evaluation of the different models". A further study carried out by Mary Waltham for JISC in 2005 on "Learned society open access business models"[5] identified society publishers' interest in open access in principle but recognised their concern over the financial sustainability of a switch to the open access business model. Even as this study was published a number of publishers were planning trials of a hybrid model, offering an open access option while retaining the perceived security of a subscription income.

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3. This SQW study for the Wellcome Trust is available at http://www.wellcome.ac.uk/stellent/groups/corporatesite/@policy_communications/documents/web_document/wtd003182.pdf .
4. This SQW study for the Wellcome Trust is available at http://www.wellcome.ac.uk/stellent/groups/corporatesite/@policy_communications/documents/web_document/wtd003184.pdf .
5. A link to the study is available in the "Documents and Multimedia" section of the JISC Scholarly Communications page at http://www.jisc.ac.uk/aboutus/committees/workinggroups/scholarlycomms.aspx .

Business models in the "big picture".

Scholarly journals are published within both an academic and a commercial environment, with different stakeholders having differing priorities. Most publicly-funded research is published in journals also funded from the public purse, either in the form of subscriptions or of open access publication charges. Several recent studies have placed journal publishing within this "big picture" of the scholarly communications process. The study on "Activities, costs and funding flows in the scholarly communications system in the UK"[6] undertaken by Cambridge Economic Policy Associates for the Research Information Network "modelled the impact of four possible changes to the scholarly communications system", viz. e-only publication of journals, author-side publication fees, cash payments to those who peer review, and increases in research funding. In each case the report forecasts a higher overall cost once the funding flows have been adjusted. The authors are careful to point out that the data included in the study is only of costs and funding and does not attempt to quantify the benefits of any change. In the story of investigations into journal business models the CEPA study advances our knowledge – particularly in taking into account the effect of funding flows – but is lacking an important element in the "big picture", viz. the economic and academic benefits from the different journal business models.

It is this gap in our knowledge of journal business models that the various studies by Professor John Houghton and his collaborators have attempted to fill. The first Houghton study on journal publishing was published from Victoria University Melbourne in 2006[7]. More recently Professor Houghton has collaborated with colleagues to publish comparisons of the economic impact of three publishing models – subscription publishing, open access

6. http://www.rin.ac.uk/files/Income-&-cost-flows-report-(full-version)-final.pdf

7. See "The economic impact of enhanced access to research findings" by John Houghton and Peter Sheehan http://www.cfses.com/documents/wp23.pdf or "Estimating the potential impacts of open access to research findings" in Economic analysis and policy vol 39 no1 (2009), available at http://www.eap-journal.com/download.php?file=696 .

publishing and open access self-archiving[8] – in three European countries, viz. Denmark, the UK and the Netherlands. The three national studies are consistent in their conclusion that the economic value of either open access business model is greater than that of subscription or toll-access publishing[9].

Future studies on journal business models.

Further studies of journal business models are needed, particularly of the new open access models in practice. The benefits to be gained from those models are clear, but both the economic and the academic benefits need to be measured over time. The impact of the open access models upon the publishing industry also needs to be monitored, and collaboration with toll access and open access publishers in gathering information about costs and benefits will be important. One feature of recent studies is that more information is emerging about the costs of the various elements in journal publishing, and greater transparency about the costs and benefits for both toll-access and open access journals holds out the promise of a more cost-effective publishing structure for publicly-funded research.

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8. Open access self-archiving by the author of a research paper is a legitimate way of making the results of publicly-funded research publicly-available, but the funding flows for self-archiving will be different from those for journal publication.

9. A report comparing the three national studies and links to the national studies can be found on the Knowledge Exchange web-site at http://www.knowledge-exchange.info/Default.aspx?ID=316 .

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