

BEYOND ACCESS: The business models behind open access

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Introduction

Advocates of open access have generally focused on the benefits that an open access publication model will have in terms of providing researchers with increased access to scholarly literature. However, there are equally important benefits that open access can have in creating a more economically efficient market for scholarly journals. A business model based on publication charges can potentially enable far greater competition between publishers, ultimately leading to a more functional market than currently exists in the subscription world.

In evaluating the various business models that can provide open access, it is important to understand the impact that each model will have on the economics of the scholarly publishing industry. While there are several models that have been proposed for funding journals in an open access world, a number of them reproduce, or in some cases even worsen, the inefficiencies that currently exist in the subscription model. Although providing increased access to scholarly literature is clearly an important aspect of an open access publication model, we must also understand the impact that any new model will have on the long-term efficiency of the scholarly publishing market.

New business models that provide increased access while limiting the competition between publishers will ultimately have a negative impact on the efficiency of the scholarly publishing market, as was the case with the “Big Deal” and consortium-level subscription deals. However, a business model that is based on publication charges, paid directly from the research budget of contributing authors, has the potential to provide increased access to scholarly literature, while at the same time creating a more functional market for scholarly journals.

Weaknesses of the subscription model

Before evaluating the various business models that have been proposed by advocates of open access, we first need to understand why the subscription model has failed to produce an efficient market for scholarly journals. First, in a subscription model, the costs of publication are mainly paid by libraries, which have little or no input into where articles are submitted for publication. This feature of the subscription model has been largely responsible for the inefficiency of the scholarly publishing market, since, as Fytton Rowland explained, “the existence of a healthy free market has the prerequisite that ‘he who pays the piper calls the tune.’ In scholarly publishing this has never been the case. Authors control the journals (by their choice of where to submit their work) and it is there for their benefit; but libraries pay the bills” [F. Rowland. February 22, 2007]. Since authors in the subscription world are not responsible for paying the publication costs of their work, they have little incentive to make economically efficient choices about where their work is published.

A second feature of the subscription market that has largely contributed to its inefficiency has been the lack of transparency regarding the price paid by the research community for articles published in a given journal. Even the most price-conscious researcher would have a difficult time deciding which journal provides the best value in the subscription world, since the cost

paid by the community is distributed over an unknown number of subscribing institutes. Journals with a large subscription base can afford to keep their subscription rates low, while at the same time collecting several times the revenue-per-article of a comparable journal with a smaller subscription base. As Jan Velterop explained in a recent post to the American Scientist Open Access Forum, “A ‘cheep’ journal can, on a per-article basis, take more money out of Academia than an ‘expensive’ journal... A substantial number of not-for-profits have seemingly low subscription prices, but take more money per article out of the academic market than even the most expensive commercial publishers” [J. Velterop. February 22, 2007]. Clearly, any new publication model must enable researchers to make informed decisions about the costs associated with publishing in a given journal if we are to have any hope of creating a more efficient market for scholarly publishing.

A third feature of the subscription market that has contributed to its inefficiency has been the inability of smaller publishers to compete with the largest and most well-established publishers. When starting a new subscription-based journal, smaller publishers are faced with a vicious circle. A journal must already have a large base of subscribers in order to attract the best authors, since authors do not want their articles to be limited to only a handful of subscribing institutes. However, a new journal needs to have already published high-quality material in order to attract subscribers, especially at a time when library budgets are under substantial pressure. Large publishers have an easier time getting new journals off-the-ground, since they can include newly launched titles in their subscription bundles, ensuring that they will be available in a reasonable number of libraries right from the start. However, these subscription bundles, along with consortium-level pricing, have largely distorted the subscription market. In an article that was published in the *Antitrust Law Journal*, Aaron Edlin and Daniel Rubenfield explain how the “Big Deal” has made it increasingly difficult for smaller publishers to launch new subscription-based journals, since funds cannot easily be redirected from large subscription bundles to pay for independent titles from smaller publishers [A. Edlin and D. Rubenfield. 2004]. The result of this has been that smaller publishers are becoming increasingly unable to develop, or in many cases even sustain, the subscription base of their journals.

Open access funded with publication charges

In order for an open access publication model to improve the efficiency and sustainability of the scholarly publishing industry, it must overcome the weaknesses of the subscription model that are described above. First, in any new model, it is important that the person responsible for choosing where an article is published is also responsible for paying the publication costs of that article. What Rowland describes as “he who pays the piper calls the tune” is an essential element for a healthy publication system, since one cannot expect authors to take the cost of a journal into account when choosing where to submit their work if they have no incentive to choose more competitively priced journals. This certainly does not mean that authors should make their decisions based entirely on price, but rather that they should weigh the cost associated with a particular journal against the prestige, publication speed, impact, and production services that the journal provides.

If authors are required to pay the publication costs of their work with funds from their research budget, funds which could otherwise be spent on conferences, lab supplies, or graduate students, there will be a much greater incentive for them to consider the costs associated with a particular journal when deciding where to publish. Journals with fast publication speeds, high rejection rates, or extensive production services would still be able to charge higher publication fees, but to do so they would have to provide increased value that authors are willing to pay for. Researchers regularly make decisions about how to best spend funds from their research budget, taking into consideration their particular needs and

resources, and there is no reason why scholarly publications should be any different. In a healthy market, consumers must be responsible for paying the costs of what they consume, otherwise they will have no incentive to make economically efficient choices.

A second requirement of a healthy publishing market is that the costs associated with a given journal must be clearly visible to the academic community. In a model based on publication charges, the cost associated with publishing in a journal can easily be compared with that of competing journals, enabling authors to make good decisions about which journals provide the best value. In contrast, any model that is based on a system of negotiated prices, whether negotiated by an author's institute or research funder, is far less likely to enable an efficient market, since authors will not be able to make good decisions about the cost associated with a given journal.

Finally, in understanding the impact that a new business model will have on the efficiency of the publishing market, we must look at the degree to which smaller publishers will be able to compete with the largest and most well-established publishers. In the subscription model, a smaller publisher may be able to create a new journal that attracts a healthy flow of submissions, but if they are unable to sell a sufficient number of subscriptions, the journal will not be financially sustainable. In a model that is based on publication charges, publishers who can attract authors by providing them with the best value will be able to create financially sustainable journals, without the need for large sales teams that can promote the journal to potential subscribers.

Having examined some of the benefits that a publication fee based open access model can provide, it is now time to examine several other models that have been proposed by various advocates of open access. While each of these models can provide substantially improved access when compared with the subscription model, they do not adequately address the economic weaknesses of the subscription market, and therefore should not be expected to improve the efficiency of the scholarly publishing market.

"Green" open access with continued subscriptions

A vocal group of open access advocates have proposed that the best way to achieve open access is to continue with the existing subscription-based market, but require that authors deposit some version of their article in a freely accessible repository. The view of many "green" open access advocates is that self-archiving can peacefully co-exist with the existing journal publishing market, while providing universal access to scholarly literature. Unfortunately, even if self-archiving can provide full open access, at least to the author's version of an article, a system of "green" open access with continued subscriptions reproduces, and in some ways even worsens, the inefficiencies that exist within the subscription market.

Even if one accepts the premise that "green" open access will not lead to cancellations, it does not provide any good mechanism for overcoming the inefficiencies of the subscription market. It will continue to be nearly impossible for researchers, funding agencies, or librarians to compare the value provided by various journals, since they will have no way of knowing how much each journal is collecting in subscription revenue. Moreover, authors will have no incentive to publish their work in competitively priced journals, since they will not bear the financial burden of their decision. Finally, in a "green" open access world, smaller publishers will not be any better-equipped to compete with the market power of large publishers than they are in the existing subscription-based system. In fact, in a world where subscriptions and self-archiving "peacefully co-exist," smaller publishers will have an even harder time competing with the largest publishers for library subscriptions.

In a world where subscriptions continue to be the main source of revenue for scholarly journals, but in which all manuscripts are made freely available in an open access repository, smaller publishers will find it nearly impossible to compete with the largest publishers for institutional subscription revenues. Despite the incredible power that large publishers can exert on library budgets, smaller publishers are occasionally able to create journals that can attract a reasonable subscription base, by publishing content that is essential for libraries to have. Often the only way for smaller publishers to grow their base of subscribers is to rely on researchers to pressure their library into subscribing. However, researchers will have far less incentive to spend their time trying to convince their library to subscribe to a new journal if they can access the articles that they need from an open access repository. So, although self-archiving can provide researchers with increased access to scholarly literature, it fails to address the weaknesses seen in the subscription market, and it threatens to tip the balance of power even further towards large publishers.

The Wellcome Trust's open access policy

Because of the leading role that the Wellcome Trust has played in promoting open access publishing, their policy of paying open access publication costs on behalf of their researchers has the potential to become a prevailing model for “gold” open access publishing. However, because of the way that the Wellcome policy is structured, it may create an even less efficient market for scholarly journals than currently exists in the subscription world.

The essence of the Wellcome Trust's policy is that they will pay the publication costs, on behalf of their researchers, for an article that is published in an open access journal, or one that is published in a subscription journal with an open access option. The motivation behind this policy is that it allows the Wellcome Trust to provide open access to the outputs of the research that it funds, without placing the burden on its authors to pay for the costs of open access publishing from their research budget. Unfortunately, while such a policy may provide greater uptake of open access in the short-run, it provides no incentive for publishers to compete in terms of price, and therefore has the potential to create an even less efficient publishing system in the long-run.

The main problem with the Wellcome Trust's model is that it does not give researchers an incentive to publish in competitively priced journals, since authors are not responsible for paying the costs associated with the journals in which they publish. In addition, this system doesn't provide any good mechanism for creating an efficient pricing system, since there is no system in place for the Wellcome Trust to determine an appropriate price for every scholarly journal. In a discussion that took place on the Liblicense mailing list, Robert Kiley explained that in the Wellcome Trust's model, “the specific costs are set by the publishers- and though it is true that the OA costs are coalescing around \$3000, some publishers have lower (e.g. ASBMB charge \$1500) and some have gone higher (e.g. Cell Press charge \$5000)” [R. Kiley. March 29, 2007]. In a later post, Kiley further explained that “the Wellcome has not set an upper limit. However, if a publisher set a price that was significantly higher than the norm, then we would want to know why” [R. Kiley. April 3, 2007]. If this sort of funding model were to be adopted by a large number of funding agencies, publishers would have no incentive to compete on a price basis, since there would be no benefit in charging less than the maximum amount that a funder is willing to pay. By directly paying publication charges on behalf of their researchers, rather than simply allowing their researchers to include funds for publication charges in their regular grant proposals, the Wellcome Trust has eliminated one of the greatest benefits of a publication fee based open access model, namely that authors will have an incentive to publish in journals that provide their services at a competitive price.

The Sponsoring Consortium for Open Access Publishing in Particle Physics (SCOAP³)

Within the particle physics community, CERN has taken a leading role in advocating a shift to open access publishing that will rely on a consortium of research funders to negotiate and fund the conversion of existing subscription-based journals to an open access model. The essence of this proposal is that “journals are paid through contracts between publishers and a single financial partner, the ‘Sponsoring Consortium for Open Access Publishing in Particle Physics’ (SCOAP³)” [SCOAP³ Working Party. March 9, 2007]. In such a model, journals would be sustained by funds coming directly from the sponsoring consortium, rather than by charges paid from the research budgets of contributing authors. The main advantage of this model is that it will enable a rapid shift to open access, without the need for new journals or the conversion of existing subscription journals to a publication fee based system. However, if such a conversion is to take place, it could potentially have disastrous consequences on the scholarly publishing market, since it eliminates any semblance of a free market system.

While the SCOAP³ proposal is clearly driven by good intentions, the proposed funding system could have a detrimental impact on the scholarly publishing market. For example, the report that was recently released by the SCOAP³ Working Party states that “it is expected that SCOAP³ will contribute to stabilizing the rising cost of access to information in the HEP domain... by increasing the author awareness of costs and prices, by linking price to value, and by fostering new competition in the market” [SCOAP³ Working Party. March 9, 2007]. However, on the previous page the report states that “An important asset of the SCOAP³ model is that it will centralize all OA expenses that will therefore not have to be directly borne by authors and research groups. This contrasts with so-called “author-pays” OA options.” Moreover, it is not even clear if authors will be aware of the cost of each journal, since the price will be determined by negotiations directly between the sponsoring consortium and publishers.

In addition, since the SCOAP³ proposal is mainly focused on 5 “core” journals in high energy physics, it threatens to distort the market in favor of these journals. As the SCOAP³ report explains, “The aim of the SCOAP³ model is to assist publishers to convert these ‘core’ HEP journals to OA and it is expected that the vast majority of the SCOAP³ budget will be spent to achieve this target” [SCOAP³ Working Party. March 9, 2007]. These 5 journals, which together publish just over half of all articles in high energy physics, will be given a huge advantage over any competing journals, since they will be able to provide seemingly free open access. Given the considerable power that these core journals already have due to their prestige, it is unclear how any competing journal would be able to survive. Even if smaller journals are given funding, they will most likely receive a substantially lower rate than the 5 core journals, since they will have much less bargaining power during the funding negotiations than their larger competitors. By giving well-established journals a nearly insurmountable advantage over their competitors, and by determining prices via a bilateral negotiation between the sponsoring consortium and publishers, the SCOAP³ proposal could prove to be disastrous to the long-term health of the publishing market.

Conclusion

While the overwhelming focus of the open access movement has been enabling unrestricted access to scholarly literature, it is important for advocates of open access to consider the economic implications that a new publication model will have on the scholarly publishing industry. New models that provide increased access, but do not create an efficient market for scholarly journals, should be viewed with great caution. If we are to create a new model to replace subscription-based publishing, we must take great care in choosing a model that will

create the most efficient market for scholarly journals, since in the long run an efficient market will provide the best publishing services at the lowest cost to the research community.

A business model based on publication charges that are paid from the research budget of contributing authors can enable an innovative and efficient publishing market, while at the same time providing full open access. However, the transition to such a system will require a change in behavior from researchers, librarians, research funders, and publishers, and in some areas the transition will be more difficult than others. While there are several models that can potentially ease this transition, including “green” open access with continued subscription, the Wellcome Trust’s open access policy, and the proposed SCOAP³ model, they will be unable to produce a healthy market for scholarly journals. Making authors responsible for the publication costs of their work, and providing them with the funding that this will require, is not going to be a simple process; however, only by doing so can we create an efficient and sustainable system that can ensure the long-term sustainability of open access journals.

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