Submission Fees - A tool in the transition to open access?

SUMMARY OF REPORT TO KNOWLEDGE EXCHANGE

This report summarises the findings of a study commissioned by Knowledge Exchange and conducted by Mark Ware Consulting, investigating the feasibility of submission fees in open access journals and the issues arising.

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1. Background

Introduction
Knowledge Exchange (www.knowledge-exchange.info), a partnership of JISC (UK), SURF (Netherlands), DEFF (Denmark) and DFG (Germany), commissioned Mark Ware Consulting (MWC) to undertake a study into the feasibility of submission fees in open access journals. This report summarises MWC’s findings as presented to Knowledge Exchange; nothing in this report should be taken to represent the views of Knowledge Exchange or its partners.

Study methodology
The study consisted of an initial literature survey, followed by an exploration of the experience of those currently using submission fees conducted via interviews (primarily with journal editors and publishers). We then developed some possible models for submission fees within open access that were tested and refined through discussions with relevant stakeholders. Finally the potential viability of these models was explored through a series of semi-structured interviews with stakeholders including publishers, libraries, research funders, research institutions and individual researchers. In total some 40 interviews were conducted.

Submission fees
“Submission fees” refer to charges levied on authors on submission of a manuscript to a journal, sometimes referred to as administrative or handling charges. They are typically non-refundable (although there can be some exceptions). Submission fees should be distinguished from charges levied on acceptance of the article such the article processing charge (APC) in open access journals, or colour charges or page charges in subscription-based journals.

Which journals currently use submission fees
Although not widespread across all fields, submission fees are quite common in business, economics and finance journals (where perhaps some 33-50% of journals use them), and to a lesser extent in experimental biology. Table 1 provides some examples. Submission fees are used by some large and well-established prestigious journals as well as some newer and innovative journals.

At present submission fees are much more likely to be employed by subscription-based than open access journals, though this may largely reflects the greater number of the former and their longer establishment. Submission charges at subscription-based journals are also more likely to be found at society/not-for-profit than commercial publishers, particularly in the US. In this regard they are similar to page charges.

Previous discussion
The idea of part-financing open access journals via submission fees is not new and was given greater circulation by the 2004 Wellcome Trust report Costs and business models in scientific research publishing (SQW 2004). This report gave illustrative figures for a “good-to-high-quality” journal (i.e. ~88% rejection rate) and a medium quality journal (50% rejection rate), using a submission fee of $175.

Different options currently in use
The most common model is to require the payment of a fee as part of the submission process. Fees typically range from $50 to $200 (with a few higher fees, up to $400-500).
### Table 1: Examples of journals using submission fees

<table>
<thead>
<tr>
<th>Journal</th>
<th>Publisher</th>
<th>OA?</th>
<th>Submission fee ($)</th>
<th>IF</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Physiological Society journals (x14)</td>
<td>American Physiological Society</td>
<td>N</td>
<td>50</td>
<td>varies</td>
</tr>
<tr>
<td>Cancer Research</td>
<td>AACR</td>
<td>N</td>
<td>75</td>
<td>7.5</td>
</tr>
<tr>
<td>FASEB Journal</td>
<td>FASEB</td>
<td>N</td>
<td>50</td>
<td>6.8</td>
</tr>
<tr>
<td>Hereditas</td>
<td>Wiley</td>
<td>Y</td>
<td>150</td>
<td>1.2</td>
</tr>
<tr>
<td>Ideas in Ecology &amp; Evolution</td>
<td>Queens U</td>
<td>Y</td>
<td>400</td>
<td>-</td>
</tr>
<tr>
<td>J Biological Chemistry</td>
<td>American Soc Biochemistry Molecular Biology</td>
<td>N</td>
<td>60 (dropped from 2010)</td>
<td>7.4</td>
</tr>
<tr>
<td>J Bone Mineral Research</td>
<td>Wiley</td>
<td>N</td>
<td>50</td>
<td>6.4</td>
</tr>
<tr>
<td>J Clinical Investigation</td>
<td>ASCI</td>
<td>N</td>
<td>70</td>
<td>16.6</td>
</tr>
<tr>
<td>J Immunology</td>
<td>American Association of Immunologists</td>
<td>N</td>
<td>50 (free to members)</td>
<td>6.0</td>
</tr>
<tr>
<td>J Investigative Dermatology</td>
<td>NPG</td>
<td>N</td>
<td>50</td>
<td>5.3</td>
</tr>
<tr>
<td>J Neuroscience</td>
<td>Society for Neuroscience</td>
<td>N</td>
<td>100</td>
<td>8.3</td>
</tr>
<tr>
<td>J Nutrition</td>
<td>American Society for Nutrition</td>
<td>N</td>
<td>75</td>
<td>3.6</td>
</tr>
<tr>
<td>J Pharmacology Experimental Therapeutics</td>
<td>ASPET</td>
<td>N</td>
<td>50</td>
<td>4.3</td>
</tr>
<tr>
<td>J Physiology Pharmacology</td>
<td>Polish Physiological Society</td>
<td>Y</td>
<td>45</td>
<td>4.5</td>
</tr>
<tr>
<td>J Veterinary Internal Medicine</td>
<td>Wiley</td>
<td>N</td>
<td>50</td>
<td>1.9</td>
</tr>
<tr>
<td>JMIR—J Medical Internet Research</td>
<td>JMIR</td>
<td>Y</td>
<td>90 (standard) 500 (Protocols)</td>
<td>3.6</td>
</tr>
<tr>
<td>American Economic Review</td>
<td>AER</td>
<td>N</td>
<td>200 100 (member)</td>
<td>2.2</td>
</tr>
<tr>
<td>BE J Theoretical Economics</td>
<td>bepress</td>
<td>N</td>
<td>Initial: 75 Speedy: 350 Re-sub: 175</td>
<td>-</td>
</tr>
<tr>
<td>J Finance</td>
<td>Wiley/AFA</td>
<td>N</td>
<td>140 70 (member)</td>
<td>4.0</td>
</tr>
<tr>
<td>J Political Economy</td>
<td>Chicago University Press</td>
<td>N</td>
<td>125 75 (member)</td>
<td>3.7</td>
</tr>
</tbody>
</table>

Policies on fees for resubmitted articles vary substantially: some journals charge no additional fee, others charge at a discount to the original submission fee, while a few charge more for resubmission than the original submission.
Discounts are often offered to society members or for journal subscribers. Waivers or discounts may be offered for authors unable to pay. In some cases waivers are available on request but not publicised.

In most cases the submission fees are non-refundable but some journals offer refunds for accepted articles, for submissions that are rejected without peer review, or occasionally if the journal fails to give an editorial decision within a prescribed time limit. (Refunds for accepted articles are less relevant for open access journals with article processing charges, of course.)

A few journals explicitly use the submission fees to reward reviewers (or those meeting certain criteria such as producing an acceptable quality report on time). Some allow payment in kind (by reviewing for the journal).

**Funder policies**

Feedback collected by this study suggests that submission fees at subscription-based journals are treated like other publication costs (e.g. colour or page charges) and charged by authors to the same funds (research grants or institutional funds), where available.

The published policies of research funders and of open access publishing funds established by institutions (sometimes as part of an OA mandate) are typically silent on whether or not submission fees are included (presumably reflecting the relative rarity of submission fees in OA journals) but two newer funds (Harvard and Cornell) explicitly include them. Our discussions with funders leads us to believe that funders will treat submissions fees in OA journals as any other publication charge, i.e. they will be seen as a valid part of the research process.

**Arguments for and against submission fees**

Various commentators writing in the literature have proposed arguments in favour of submission charges that would apply to all journals (i.e. both subscription-based and open access):

- deters frivolous, premature, unrealistic or "long-shot" submissions
- improves journal quality by reducing submission numbers (and possibly reducing lower-quality submissions disproportionately), reducing frivolous submissions and reducing pressure on editors and reviewers
- reduces total load on all reviewers by reducing long-shot, multiple sequential submissions
- fairness: rejected authors as well as accepted authors contribute to costs of (administering) peer review
- better allocation of scarce resources (i.e. editors/reviewers’ time and attention)
- better scalability with growth of research output

For open access journals some specific advantages have been advocated:

- provides a viable economic model for open access journals with very high rejection rates
- allows the article processing charge to be set independently of the rejection rate
- allows the article processing charge to be set as low as possible

The main concerns raised

- it might deter authors, thus putting journals adopting submission fees at a disadvantage, and making it difficult to introduce to a field without any prior experience of submission fees
- lack of clarity on whether funders would allow the charges to be reimbursed
- possible impacts on authors without research funds or from poorer economies etc.
need for systems to collect and administer the payments and their reimbursement

These arguments were tested in our interviews with stakeholders and the extent to which they were supported is discussed in the following section.
2. Discussion and conclusions

What problem is addressed by submission fees?
Our objective was to examine how submission fees might support open access journals, with an emphasis on the revenue and business model aspects (as opposed to other proposed benefits such as encouraging responsible submission behaviour from authors).

How might this occur? We could make the following hypotheses:

- a submission fees model might offer a generally better business model for OA journals. This could encourage a move to OA by attracting new entrants and encouraging existing publishers to convert existing TA journals to OA and/or to launch new OA journals.
- a submission fees model could offer a better business model for high rejection rate journals which suffer from the problem of the relatively few accepted papers having to carry the peer review costs of the many rejected papers. This would encourage OA in a similar way as above, though on a more limited scale (since high rejection rate journals are in the small minority).
- a submission fees model could conceivably be more attractive to authors than the standard OA Gold model, perhaps because the “combination price” (submission fee + APC) could be lower (for higher rejection rate journals) than the APC alone, or perhaps because the model was perceived as fairer.
- it is also conceivable that submission fees could strengthen subscription-based journals (by offering an additional revenue stream) which might slow down any transition to an OA model.

In addition, there has to be a sufficiently large advantage for publishers to make the transition; funders and institutions (including OA publication funds) would need to support the model, at least to the extent of allowing the charges; authors would have to accept the principle and find it simple enough in practice; and there should be no unintended negative consequences elsewhere in the system. These were the main issues explored in the project.

Advantages
We initially identified the benefits that have been proposed for submission fees either in the literature or by journals that are currently using them (see page 4). These proposed benefits were then tested in interviews with stakeholders. In summary:

- publishers tended to agree that there would be potential advantages to this business model for OA journals, particularly for high rejection rate journals
- however, for OA publishers the potential advantages were seen to be outweighed by the risks involved in making the transition (see below)
- in fact, we found more current planning for the introduction of submission fees among subscription-based journal publishers, who were considering them as a potential additional revenue stream at a time when library budgets were expected to be very constrained
- in discussing the advantages, publishers tended to talk in general terms about a better system rather than identifying clear financial advantages specific to themselves
- similarly, the advantages identified by other non-publisher stakeholders were rarely such as to convey a benefit directly on the speaker or their organisation. For example, OA supporters in research institutions or funders could benefit indirectly if a better business model led more open access but this is not an immediate, direct benefit to the organisation in the same way that increased revenue would benefit a publisher
Knowledge Exchange: Submission Fees – a tool in the transition to open access?

• there was a fair degree of support for the notion that submission fees would encourage responsible and realistically assessed submissions, although a similar proportion disagreed there would be an effect. (The main arguments against were that the benefits of publication dwarfed the relatively small submission fee, and in any case an author submitting to an open access journal was already committed to paying a publication charge.) Although this could be beneficial for scholarly communication generally, it is not specific to OA journals and gives no incentives to any of the stakeholders to move towards OA

• there was very little support for the hypothesis that submission fees could improve the quality of a journal1.

Disadvantages
As for the advantages, we identified the objections that have been raised to submission fees either in the literature or by journals that are currently using them (see page 4). These objections and other possible disadvantages were also tested in the interviews. In summary:

• there were two main kinds of objection: first, specific disadvantages like those listed below; and second, the objection that although there may be advantages, promoting submission fees (at this stage) would be the wrong priority to encourage OA. Implicit in this second class of objection is the idea that the advantages of submission fees are simply not sufficient to outweigh the perceived risks

• the main objection raised by publishers was the disadvantage (loss of authors) that would be suffered by a journal charging submission fees when its competitors did not. This could be thought of as a transition issue (see below) because it affects the journals that go first; if the model became common the relative disadvantage disappears. The extent to which authors would in fact be deterred is of course an empirical matter for which most publishers have little, if any, actual data. This objection is therefore based on an assumption that could be tested (see below)

• publishers were also concerned about the additional administration and transaction costs. The direct transaction costs would not be large if all authors could pay by credit card (though this seems unlikely to be feasible) but indirect administration (e.g. dealing with transaction-related queries and correspondence) seems likely to be a real issue

• publishers had some concern that submission fees would not be reimbursed by funders or institutions. This can be dispelled by the findings of this study

• publishers were concerned about potential negative perceptions that introducing a new fee would give rise to. This can also be seen as a transition issue

• some research institutions were concerned about the additional administration too and especially the additional burden placed on authors.

Preferred model
There are potentially a large number of possible variants on a theme but we have considered four main models for submission fees in OA journals:

• the Wellcome Trust model (see SQW 2004): a submission fee plus APC. The respective fees are set at levels that aim to balance acceptability with the author community with securing a meaningful mix of revenues

1 Although in fact at least one author has demonstrated a correlation between submission fees and journal quality for economics journals (Chressanthis & Chressanthis 2004)
Knowledge Exchange: Submission fees in open access journals

- the Leslie model (Leslie 2005): a submission fee plus APC; payments to referees (provided quality and timeliness criteria are met); refunds for accepted articles

- the “bepress” model: authors are expected to act as reviewers in lieu of paying submission fees (typically 2 reviews = 1 submission fee); a “credit bank” keeps track of authors obligations and optionally allows trading in credits; authors can opt to pay the submission fees rather than reviewing

- submission fee-only model: authors only pay a submission fee with no subsequent APC.

Based on the interviews and our modelling we see the first model as the most practical for open access journals. The Leslie model seems really only appropriate for subscriptions-based journals in economics (for which it was devised). The bepress model is complex and may help with other objectives (such as building community around the journal) but is less good from the business model perspective because it (by design) aims to encourage reviewing rather than collecting fees. A submission fee-only model would require higher fees that would most likely limit author acceptance and provide a weaker, not stronger business model.

What constitutes a better business model?

What specifically would make submission fees a better business model? Some options might be:

- it is better for high rejection rate journals because it spreads the costs more evenly over rejected as well as accepted authors. This argument is often made but it does not seem to us to amount in itself to a better business model, i.e. one that would provide publishers with an incentive to adopt it. It might be fairer, but if authors are willing to pay sufficiently high APCs to cover the rejected papers, fairness in itself does not make a better business model

- it would allow OA journals to increase (net) revenues in a way acceptable to authors. This seems plausible (see below)

- it would reduce risk by reducing the sensitivity of revenue to variation in the rejection rate. This is also seems plausible (see below) but it is also true that reducing the downside risk by reducing sensitivity also reduces upside gains. (And while multiple revenue streams are generally seen to be less risky, in this case the source of revenue is the same in both cases.)

- it could increase submissions, and hence revenues, if the model were more attractive to authors (and/or those influencing authors) than the standard Gold model. This seems highly implausible, even given the limited data we have

- it could be a better strategic fit for the current or likely future business environment, e.g. because it scales better with increasing research outputs, or perhaps because it offers a route to disaggregating journal services. These arguments seem unlikely in themselves to persuade existing publishers.

Of these options, increasing revenue and/or reducing risk seem the strongest and we explored them further in some simple modelling. This illustrated that a submission fee + APC model can have somewhat lower risk (i.e. revenue variability, and offers a potentially easier option to increase revenues, than an APC-only model.

Some previous models have over-simplified the issues involved by ignoring certain factors. A more realistic model would take account of a mixed environment, in which the journal competed with journals that did not charge submission fees (and hence a proportion of authors were deterred from submitting by the submission fees), where rejection prior to peer review exists and in which transaction costs association with payment of submission fees are non-zero. Our modelling extended the Wellcome approach in this way for three fictional but illustrative types of OA journals considering introduction of submission fees:
• We considered first a large, prestigious high-rejection rate OA journal with an APC of $2500. We assumed it received 4000 submissions per year, rejected 35% of these without peer review and then rejected 85% of the remaining papers, thus publishing around 10% of submitted papers. The large number of submissions gives this journal a lot of options, even allowing for a deterrence effect on authors. For example, the journal could cut its APC to $1150 if a submission fee of $150 were charged to all submissions, or to $1550 if only peer-reviewed submissions were charged, while holding net revenues constant. In both cases the combination price of submission fee + APC is substantially less than the original APC, a potential selling point for authors.

• Consider next a good quality second-tier journal receiving 1000 submissions and publishing 280 papers (hence overall rejection rate of 72%), with an existing APC of say $2000. Using similar assumptions as above, it could reduce its APC to $1550 with a submission fee of $150 for all submissions, or $1650 if the submission fee were only charged to peer-reviewed submissions. As with the first journal, the combination price is less than the original APC, though in this case the margin is smaller.

• Lastly, consider a journal somewhat closer to the average for peer-reviewed STM journals, receiving 300 submissions a year and publishing 139 with an existing APC of $1500 (its rejection rate of 54% is thus a little above the average rate of 50%). In this case, the journal could reduce its APC to $1400–1450 with a submission fee of $100. In this case the combination price is the same or higher than the original APC.

It is clear that the impact of submission fees on the journal’s business model in the case of lower rejection rate journals under these assumptions are less substantial than for higher rejection rate journals. In the case of average or lower rejection rate journals, if our assumptions are realistic there would appear to be little point in adopting a submission fee model. At the other end of the scale, a high-rejection rate publication like our example could reduce its APC significantly and benefit from a roughly equal split of revenue between submission fees and APCs.

One benefit to the publisher of the mixed revenue model is that revenue is much less sensitive to changes in rejection rates than with an APC alone.

The other potential benefit to the publishers of high-rejection-rate journals would be that they could use the introduction of submission fees as a way to increase total revenue while at the same time reducing the “headline” APC (by setting the submission fees and APCs at appropriate levels).

Support for submission fees

In the interviews we found a range of views, as you might expect for any moderately complex policy issue. In a change scenario, however, the onus is on the supporters to lead the charge, and in particular it is only really the publishers who can make the change. (Plus new entrants, of course, though for obvious reasons we are not in a position to judge their level of interest.) The views of publishers are therefore critical. There is certainly interest in the model among publishers and a degree of support, but at this stage it appears that support is too qualified to lead to an early spread of the model without additional intervention. In essence, the current level of support mostly falls into the category of seeing it as an interesting idea, worth further exploration but not an immediate priority.

The open access publishers we interviewed did not buy into the model. Although they saw some (theoretical) advantages, they believed that these were outweighed by the risks. They particularly disagreed that reducing inappropriate (e.g. frivolous, premature, long-shot) or just lower quality submissions was an important advantage, because they were generally in a growth mode and/or because they believed there were better ways to handle over-supply of submissions (e.g. editorial triage or cascade peer review).
Support was also reduced among those who did not disagree that there may be some benefits but felt it was the wrong priority for OA supporters to confuse matters by introducing a new and untested model at a time when the current model still had far to go.

Overall, therefore, it seems there is interest in the model but the risks, particularly those involved in any transition, are seen to outweigh the perceived benefits. As we also noted above, there is also a problem in that the advantages cited are often general benefits that might improve the system but do not provide individuals with direct incentives to change.

**Transition**

How could a transition to a submission fees model be supported, assuming the advantages were seen to be large enough to warrant this? We could suggest the following:

- funders, institutions and OA publication funds could clarify their policies on reimbursement, making it clear that submission fees would be an allowable cost. (Most current policies are currently simply silent). This would reassure publishers and authors.
- a lot hinges on the extent to which authors would accept the model or would be deterred by submission fees. This could be researched or tested; see below for some more ideas on this.
- further work could be done to establish workable models for billing and collection at the institutional rather than individual author level, and/or to establish the extent to which an online-only credit card-based payment system would be acceptable to authors and institutions
- interested parties might encourage or support the establishment of a pilot.

**Publisher strategies**

What lessons could a publisher that was potentially interested in adopting a submission fee model learn from this study that could help improve their strategy?

- there appear to be some business model advantages (for OA journals using the standard Gold model), even allowing for transaction costs, non-peer review rejection and a degree of author deterrence …
- … provided the journals have a reasonably high rejection rate: the minimum sensible level is probably around 70%, with correspondingly higher benefits at higher rejection rates
- authors may be more willing to accept submission fees than publishers assume, particularly for existing OA journals (where authors are already committed to payment) and if the case can be made in terms of strengthening the OA movement.
- there are probably more journals currently using submission fees than most publishers (outside economics) may realise. Some of these are very large journals.
- potential negative reactions to the introduction of a new fee could perhaps be mitigated by arranging for the combined price (submission fee + APC) to be less than the previous or otherwise proposed APC (this assumes an OA journal with a high rejection rate). This could also reduce author resistance.
- it will clearly be easier to introduce submission fees where there is some existing awareness.

**Administration and practical issues**

We found concern about the potential impact of increased administration on publishers, institutions and researchers.

As the model makes most sense for higher rejection rate journals, there will be a substantially higher number of payments required at an OA journal compared to the standard Gold model, and the new transactions (the submission fees) will be for relatively low amounts. From the publishers’ perspective
it would make most sense to collect such fees via automated online credit/debit card or PayPal-type system. (The leading online submission systems have modules that could support this.) Despite the fact that existing journals collecting submission fees require this payment method, it is far from clear that it will be a simple matter for many authors. First, although institutions do of course have corporate payment cards for online use, they are not necessarily easily available to individual researchers. Second, some universities are prohibiting the use of personal credit cards and subsequent reimbursement except where there are no practical alternatives. Instead these institutions would require a purchase order and matching invoice.

An alternative approach would be to offer institutional accounts which would allow centralised billing and collection. This is not straightforward, however; for instance, there is no current easy way for an administrator to verify that a billed submission fee related to a genuine submission from an author entitled to use the institutional affiliation without getting the paperwork from the author, which defeats the object. (Centralised accounts would also vitiate any potential benefit of reducing inappropriate author submissions since authors would be insulated from the admin and the cost.)

**Author acceptance**

Author acceptance of submission fees is obviously critical to its success. It is an observable fact that authors will accept them in some circumstances. Sceptics argue, however, that these are special cases that tell us nothing about other areas: in economics this is an historical accident and happens to fit with the economic world-view, whereas the life science journals are primarily leading, highly prestigious titles that are in a position in effect to dictate to their authors. There is also a historical perspective in that the life science journals are generally US society titles that have traditionally employed a diversity of revenue streams including page and colour charges as well as subscriptions. A parallel could be drawn with page charges, which many society journals were forced to drop through competition with commercial titles without page charges. In this view, the recent dropping of submission fees by the *Journal of Biological Chemistry* (“to expedite the submission process and hold down costs to authors”) may be seen as a straw in the wind.

**Testing author acceptance**

Author acceptance is, however, an empirical matter that could be tested. We could suggest two approaches: market research or a pilot/live test.

**Conventional market research techniques.** In order to get representative results, quantitative techniques such as an online survey with a robust sampling process would be required. Getting reliable results on consumer responses to pricing proposals is notoriously difficult, however, because ticking a box is very different from making an actual payment, and because respondents may wish to influence the surveyor. We could suggest a technique whereby respondents are asked to choose between specified alternatives. For instance: “Imagine you have a paper you would like to publish in Journal X, which happens to be an Open Access journal. On submission, you can choose between two payment options: (a) no submission fee and an APC of $2500, or (b) a submission fee of $150 and an APC of $1500.” etc. Multiple different price combinations could be employed either on the same or on different respondents to build a picture of author preference. Other questions could explore motivations for OA journal choice, payment and administration issues, and so on.

**Live testing.** Rather than conduct the thought experiment proposed above, the experiment could be done for real by a willing publisher. In other words, authors could be given a choice between submission fee+APC or just APC at the point of submission. If the journal had enough submissions, the publisher could test different price and payment options. Authors could also be sent a follow-up questionnaire to explore the reasons for their choices.
3. Selected bibliography

**Anon (undated)** "OA journal business models" on the Open Access Directory (wiki), http://oad.simmons.edu/oadwiki/OA_journal_business_models


