

The cost and economics of Open Access

Open Access represents a whole different funding game for scholarly journals. While they were typically supported by subscriptions (and often submission fees), meaning only selected people had access, the advent of OA meant that this revenue stream was lost. This means new ones had to be found.

While the most commonly known method here is that of APCs, or “article-processing charges”, there are a number of models that can be used to cover journal costs.

There are many publishers that started up as OA-only publishers (or “born OA” publishers), such as PLOS, Hindawi, Frontiers, MDPI and BioMed Central. These big commercial publishers are almost exclusively funded through these APCs.

But what exactly is an APC? These are author-facing fees that are designed to cover the cost of publication, or processing, of an article. This can include both direct processing costs, as well as indirect costs, such as those of running a company. Often, these fees are not paid by the authors themselves, but come from grants or libraries if based at a research institute.

For learned society journals, in 2007 a study showed that 83% of OA journals do not charge these publication fees. As of June 2018, only 26% of journals in the Directory of Open Access Journals (DOAJ) required payment of APCs. Another analysis by Heather Morrison found similar results:

As of January 31, 2018, 71% of the 11,001 journals listed in DOAJ do not charge APCs. 28% do charge APCs, and the remainder have no information on APCs.

Therefore, **OPEN ACCESS IS NOT ALL ABOUT APCs**. Just to make that absolutely clear.

Free is in freedom, not as in beer

Often, in spite of this, you will hear the rather tedious rhetoric that “Open Access costs money” or “someone has to pay”. This is usually a corporate tagline from a publisher who has had their business model completely threatened by the Web and wants to do everything they can to protect their revenue. We know it costs money. We know it is not free.

However, this statement is little more than a diversion. The true question with more substance, which is more difficult to answer, is “How much should it cost?”

The reason why it is so difficult to answer is that for the most part, the actual costs of OA publishing remain unknown. Some publishers will charge \$3-5,000 for a single article, but we have no idea where the costs for this come from. It seems to be a sum of the actual costs of publishing, the indirect costs of maintaining a business, a large chunk to maintain profit margins, scaled against the perceived ‘prestige’ of a journal, what difference disciplines can afford, and simply how much a publisher can get away with charging.

This is because the present scholarly publishing market does not actually function as a market. There is no price sensitivity, there is no substitutability between ‘products’, and there seems to be little desire to challenge these problems in any real way. There are quite a number of examples that help to illustrate this present state.

A recent study showed that the actual costs associated with publishing can be as low as around a few dollars to a few hundred dollars per article at scale. The Journal of Open Source Software (JOSS) costs about \$2.71 per article. Critical services like arXiv costed \$925,000 to run in 2017, publishing 123,523 articles during that time - around \$7.48 per article, without any peer-reviewing/editing/publishing work. By comparison, Springer Nature estimates that it costs between €10-30,000 euros per article for publishing in one of their Nature-branded journals. In fields such as Palaeontology, most OA journals do not charge APCs and are subsidised by other means or have much more efficient running costs; whereas those from the big publishing houses typically cost between \$2,500-3,500 per article.

Let that all sink in. The prices vary on 3 orders of magnitude between services, and yet most of the money goes to the most expensive options, rather than the most cost-efficient. And we are talking about significant amounts of public money here too - on the order of billions of euros each year.

Now, even with Plan S, things are not getting better. Recently, Germany gave €26 million to Wiley, for publishing 9,500 articles per year over 3 years; around €2,750 per article using a back of the envelope calculation. Wiley has an operating net profit margin of around 29.5%, which means that of this contract, around €7.7 million goes straight into Wiley's shareholder pockets. A similar deal between Wiley and Dutch universities seems to be costing more than €4,000 per article at the present. Remember, existing services demonstrate that this can be done at scale at a tiny fraction of that cost.

A recent study has even shown that the current status of OA, and its increasing favour on commercially-driven companies with high APCs, is creating a second crisis due to hyperinflation and the lack of market control. Oops.

What is the future?

There currently is a growing debate regarding the linked ideology and ethics between OA and APCs. Often, these charges are being created and managed by commercial publishing conglomerates together with some national and international academic institutions and government bodies. What APCs do, sadly, is create another financial barrier to participate in the communication of knowledge. This discrimination is why many journals offer fee-waiver policies to authors with demonstrable need.

Some no-fee OA journals have direct or indirect subsidies from institutions like universities, laboratories, research centers, libraries, hospitals, museums, learned societies, foundations, or government agencies. Some have revenue from a separate line of non-OA publications. Some have revenue from advertising, auxiliary services, membership dues, endowments, reprints, or a print or premium edition. Some rely, more than other journals, on volunteerism. Some undoubtedly use a combination of these means. But we don't know how many other sources of revenue might be missing from this short list. We don't know how many no-fee journals use which method, and we don't know how the methods compare with one another for financial sustainability. Peter Suber, 2006

Other innovative ways of covering costs can be seen in PeerJ and the Open Library of Humanities. PeerJ operates under a membership model, with different tiers allowing for one (\$399), two (\$449), or five (\$499) peer-reviewed publications per 12-month period. This represents a significant departure from the APC model. The Open Library of Humanities is funded by an international library consortium model, which enables them to publish journals with no author-facing APCs.

Other low-cost platforms including PubPub. This system enables anyone to set up their own journal, including all hosting and publishing workflow services including peer review management. It is Open Source, exclusively OA, non-profit, researcher-friendly, and a member of MIT'S Knowledge Futures Group.

The Free Journal Network exists to promote scholarly journals that are run according to the Fair Open Access Principles; primarily, journals that are controlled by the scholarly community, and have no financial barriers to readers and authors.

So, we have a complex present economic landscape. It is tied to both the research evaluation system, which is often driven by scholarly journals, the commercial interests of a powerful, private industry, and globally very heterogeneous. The future of it all is quite uncertain at the present.