Is a cost-neutral transition to open access realistic?

Björn Brembs

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Current estimates for the cost of subscription articles converge around US$5,000 per article. This number is reached by dividing the estimated US$10b spent on subscriptions annually world-wide by the two million published articles every year. Current initiatives aiming for a transition from subscriptions to gold (article processing charges, APC-based) open access emphasize that the transition has to be cost–neutral.

How realistic is a cost-neutral transition from subscriptions to open access?

There is ample material on how much the publication of a scholarly open-access article costs. SciELO publishes for under US$100 per article. SciELO, however, publishes largely in regions of the world where labor and other associated costs are comparatively low. How much costs do other organizations cite? The Open Library of Humanities is on the record with about US$500, Ubiquity, Hindawi and PeerJ are also on record within the US$100-500 range and Scholastica, RIO Journal, Science Open, F1000Research or arpha mention similar figures. Thus, there are now about ten different companies or organizations which all agree that open access publishing costs about US$100-500 and Independent analysts agree: it is established that the actual costs of publishing a scholarly article are in the low hundreds of US$.

Thus, the maximum we could theoretically get out of a transition deal are about 90% savings as an upper bound for potential savings. This would result in about US$9b annually which we could, for instance, invest in modern technology for our publication infrastructure. If there is such a huge potential for savings, why do all these open access initiatives only aim at a "cost-neutral" decision? Surprisingly, when planning their transition, these initiatives never looked at costs, only at current prices. Current open access prices (for those journals where they are charged) come to lie around US$2500 and US$3500. Because the most expensive journals such as, e.g., *Nature* (which is on record to have to charge US$50,000 per article to maintain current revenue levels) are not yet open access and prices are expected to rise over the time of the transition period and beyond, these initiatives calculate with higher APCs.

There are three main components as to why legacy publishers are charging so much:

1. Inefficiency – with a profit margin of 40% and a market that carries essentially any price increase, there is little pressure to cut down on costs
2. Paywalls – legacy publishers have to maintain a huge infrastructure related to preventing access. The internet was designed to enable access, not to prevent it, so the technical and administrative challenges are huge. It is thus credible when publishers routinely justify their scheme of big deals, which enclose all of their journals, to be cheaper than any smaller selection of their journals, by the increased costs of making sure they can accurately distinguish whether a user from university X has access to journal Y and not journal Z. The frequent mishaps with paywalls for nominally open access articles are a testament to how difficult and hence expensive something like this is to maintain. Of course, therefore, it makes great business sense for a company that still has paywalls, to have all revenue contribute to these costs, even open access revenue. "Double-dipping" is a normal, sound business practice which contributes a fair amount to the high open access prices (APCs) we pay today.

3. Profits – legacy publishers are accustomed to profit margins of about 40%, i.e., about US$2,000 of the US$5,000 they are collecting per subscription article, on average. So these kinds of sums are added to any cost-based APC of legacy publishers.

Even for publishers without paywalls it may be tempting to just ride on the wave of high APCs just because the customer-base provides for that sort of revenue. For instance, Emerald recently increased the APCs by ~70% merely for such competition-based reasons.

From this list one can estimate a lower bound of what a transition to open access should at least yield, if the transition was totally botched and these initiatives didn't get any advantage at all into their scheme. Let's assume legacy publishers are half as efficient than their modern competitors, so their cost would be US$1000 per article and there would, as now, still be no competition that would force increased efficiency. Let's hypothetically assume the public purse is generous enough to leave current profit margins at outrageous 40%, then the APC *price* would amount to US$1,400 per article. There are no more paywalls to cross-finance so these costs fall by the wayside.

Thus, from these calculations, the worst case scenario for a transition to open access is savings of about 72% and the best we could do is about 90%. Anything worse than 72% is a free, tax-payer funded gift to an international oligopoly. Why would the scholarly community support such a give-away?

Hence, what everybody should be asking of these initiatives is why they are campaigning for a cost-neutral transition to US$5,000 per article with legacy publishers, when there are many competitors that would perform the same service for 500€? How can they justify a tenfold cost to the taxpayer in favor of big, international corporations (does anybody know if any of their names have cropped up in the Panama or Paradise Papers, btw?), to the disadvantage of smaller, modern publishers? What are their reasons to prop up a legacy industry with an obscene waste of tax funds? What service could these legacy publishers possibly perform that one may use to explain to a non-scientist tax-payer why they should pay ten times as much?

A different question is, of course, how to achieve this reduction. For now, only one component stands out as crucial for the transition: the exchangeability of service providers. Only this exchangeability allows for actual competition to put pressure on costs. One of the many afflictions of our current system (and one shared with APC-based gold open access) is that publishers cannot easily be switched, as every article resides only with one company. Merely switching subscription funds to APCs would not make the service providers exchangeable, because journal rank would still force authors to publish where their field dictates them to, preventing competition. One of (hopefully) several solutions would be a shared publication infrastructure where service providers are chosen in a bidding process and can be replaced if their services become too expensive or their cost-effectiveness drops.