



Making moves towards the large-scale transition to Open Access **An opinion piece by *Ralf Schimmer, Max Planck Digital Library***

In the years since the founding of the *Berlin Declaration* of 2003 there has been significant – albeit sometimes difficult – progress towards establishing Open Access (OA) as the fundamental principle of academic publishing. This paper gives an overview of the current state of affairs from a position of optimism about OA's prospects.

During the past year or so there has been a torrent of significant new contributions to the OA debate. A basic building-block that has become a reference document for the OA movement is the white paper published by the Max Planck Digital Library (MPDL) in the spring of 2015.¹ By collating and analysing ten years' worth of publishing data from all over the world, and paying particular attention to the issue of corresponding author share, MPDL has been able to combine hard data with reassurance by demonstrating that there are sufficient resources in the current publishing system to make the shift to OA financially viable. The output of the most recent Berlin Conference was the launch of Open Access 2020 (OA2020) in the spring of 2016. This initiative both invites commitment to a quite demanding *Expression of Interest* and offers guidance in the shape of concrete suggestions for action in a *Roadmap*, all with the goal of inducing the swift, smooth and research-oriented transformation of today's scholarly journals from subscription to Open Access publishing. In the same period, the various developments that have been taking place in Europe were adopted at the European level under the Dutch EU Council Presidency as the *Amsterdam Call for Action on Open Science*; and the Council of the European Union published its *Conclusions* on the transition towards an Open Science system, which include the recognition that this entails open access to the publication of research. There have been many other initiatives, not the least of which is the mushrooming of very practical offset agreements between publishers and libraries; these provide transitional stepping-stones on the way to Open Access.

Despite these very solid advances, there is nonetheless a troubling dilemma: while Open Access is strongly embraced as a *principle* – as seen in the numerous resolutions, policies and guidelines that are emerging – it is still rather weak as a *practice*. At this stage, OA accounts for only about 14% of new articles each year, with an annual rate of increase of just one percentage point according to MPDL's own data analyses based on the Web of Science. This shift does not of itself exert any transformative pressure on the entrenched publishing system: subscriptions

¹ Schimmer, R.; Geschuhn, K.K.; Vogler, A. (2015): 'Disrupting the subscription journals' business model for the necessary large-scale transformation to open access' (<http://dx.doi.org/10.17617/1.3>); Palzenberger, M. (2015): 'Number of scholarly articles per country. Data on Web of Science listed articles and reviews 2004-2013' (<http://dx.doi.org/10.17617/1.2>).

continue to prevail, and the big commercial publishers' returns on sales are booming, with margins ranging between 30 and 40 per cent.

Moving beyond the dilemma

Could it be that the great variety of measures that have been brought to bear – in generating awareness, creating mandates and devising various practical measures, all predicated on an effort to *move the researcher towards OA* – have reached the limits of their influence? In my opinion, it may be time to change gear and address the challenge from the opposite direction. Here, we could create the conditions in which OA supports researchers in every aspect of their workflows and routines, from accessing existing outputs to publishing the results of their own research, thus *moving OA towards the researcher*.

This less punitive perspective acknowledges that it is not the researchers who are the ones who should be obliged to change. If a scholar is attracted by a journal's reputation and wants to publish there, we should surely not view his or her stance as the obstacle; rather, it is the publishing system and its costly and restrictive underlying business model that needs an overhaul. Establishing OA as the standard for scholarly communication requires the large-scale shift of the corpus of academic journals to an Open Access business model, and it is crucial that OA should include the prestigious, established journals that offer a perceived level of quality and thus influence certain career opportunities.

Despite its limitations and its paywalls, the subscription system is so entrenched that it gives the appearance of inevitability; it will take sustained commitment and optimism to change it. Achieving a large-scale transformation to OA will call for pilot programmes and the elaboration of the necessary workflows; a large international coalition will need to coalesce, committing to the transformation and developing a transition plan. Establishing the necessary underlying confidence in such a radical overhaul calls for the demonstration of the financial viability of an OA world.

An OA transformation seems to be possible without financial risk

To allay fears about an insufficiency of resources or that an OA world would be even more expensive than the current subscriptions system, the MPDL analysed global annual operating figures, drawing on publishers' data and the current levels of article-processing charges (APCs). It is clear that there is indeed sufficient 'money' in the system to finance the outputs of scholarly communication in an OA world without financial risk. Not only will additional resources be unnecessary, but the savings that arise will enable the correction of funding imbalances and the emergence of new and creative approaches to information-sharing.

An overview of the global scholarly journal market and its financial dimensions can be summarised in a simple equation. The starting-point of our analysis is the figure of €7.6 billion as the total global budget.² The subscriptions-based market produces 1.5 million scholarly articles on the World of Science (WoS) index, or up to 2 million overall; this implies a cost-per-article of approximately €5,000 for WoS articles, or €3,800 overall. By contrast we note that, in an observably consistent picture, the existing APCs are substantially less than €2,000. If 2 million research papers are published at an APC of €2,000, then the resultant total of €4 billion gives a 45% buffer within the current system, allowing significant investment in new and improved services, remaining subscriptions, as well as other adjustments. This overview is summarised in Figure 1.

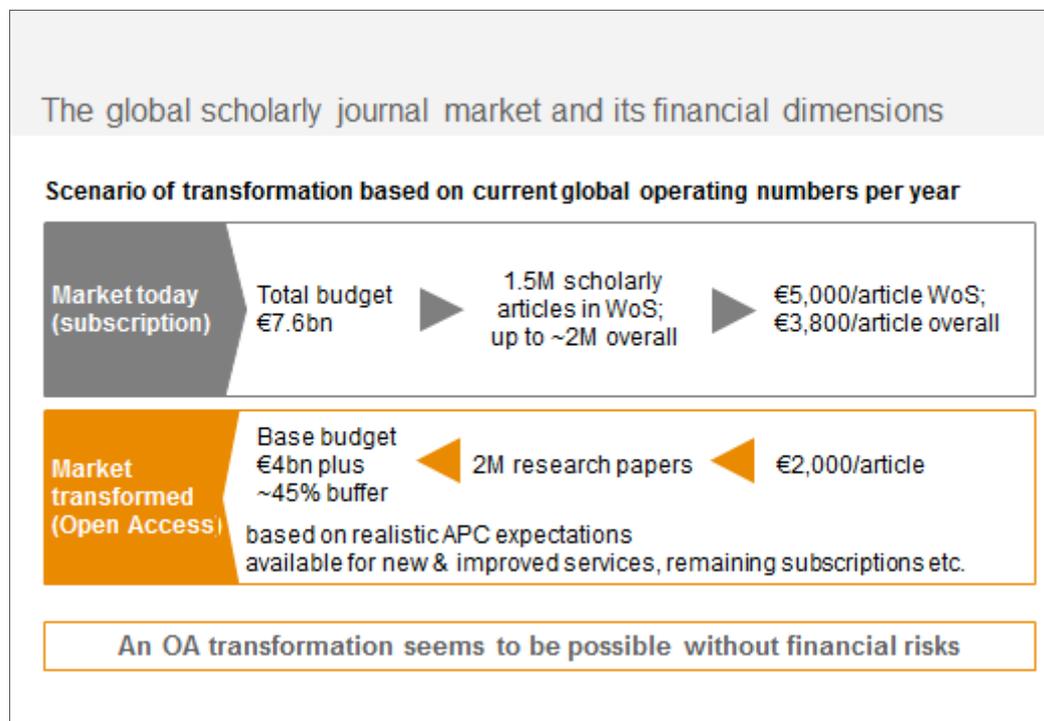


Figure 1: The financial dimensions of global scholarly journal publishing

It has been crucial here to recognise the need to de-duplicate the raw data that is drawn from bibliographies and institutional repositories, given that it reflects the reality that research is increasingly co-authored, by co-authors from different institutions and sometimes beyond national borders. While authors may be recorded recurrently in the bibliographies of all their home institutions, the costs of publishing services are a one-time event. In Europe, the proportion of co-authored papers is approximately 70%; in the larger and more insular contexts of China and the US, the share is higher, while in smaller or less research-intensive countries the share is lower. Our analyses of the publications volumes in Germany and Great Britain (Figures 2 and 3) show that whether one relies on a conservative view of publishing costs (i.e., assuming €2,000 per publication) or an actual average APC (i.e., taking the €1,300 from the Open APC Initiative³),

² This figure is widely accepted in the publishing industry. It is reported by various finance analysts such as SIMBA, and appears in the annual reports of the STM publisher association, cf. http://www.stm-assoc.org/2015_02_20_STM_Report_2015.pdf.

³ The most comprehensive source of APC evidence, the Open APC Initiative, currently reports a median fee of just below €1,300; cf. <https://github.com/OpenAPC/openapc-de>.

these countries' spending budgets are currently substantially greater than the costs of an OA model. Experts assess the spending of the German higher education institutions for their journal subscriptions to be in the range of €200 million per year. For the UK, those estimates vary from £160 million per year (according to Jisc Collections) to £192 million (according to Research Libraries UK).

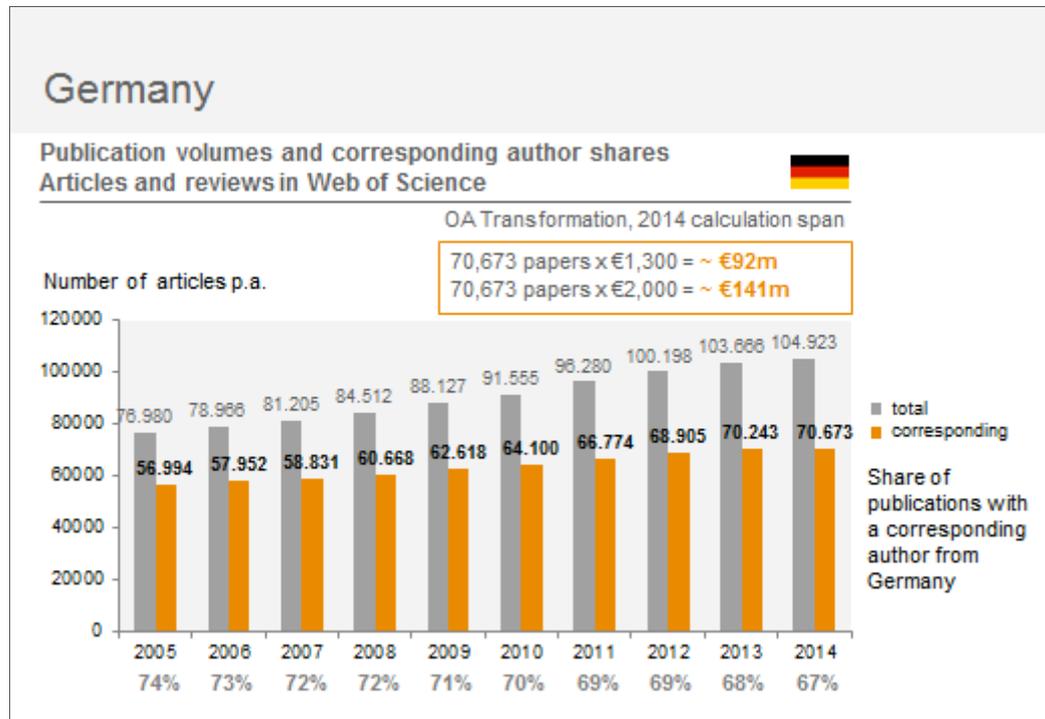


Figure 2: Cost projections for a fully-fledged OA scenario in Germany

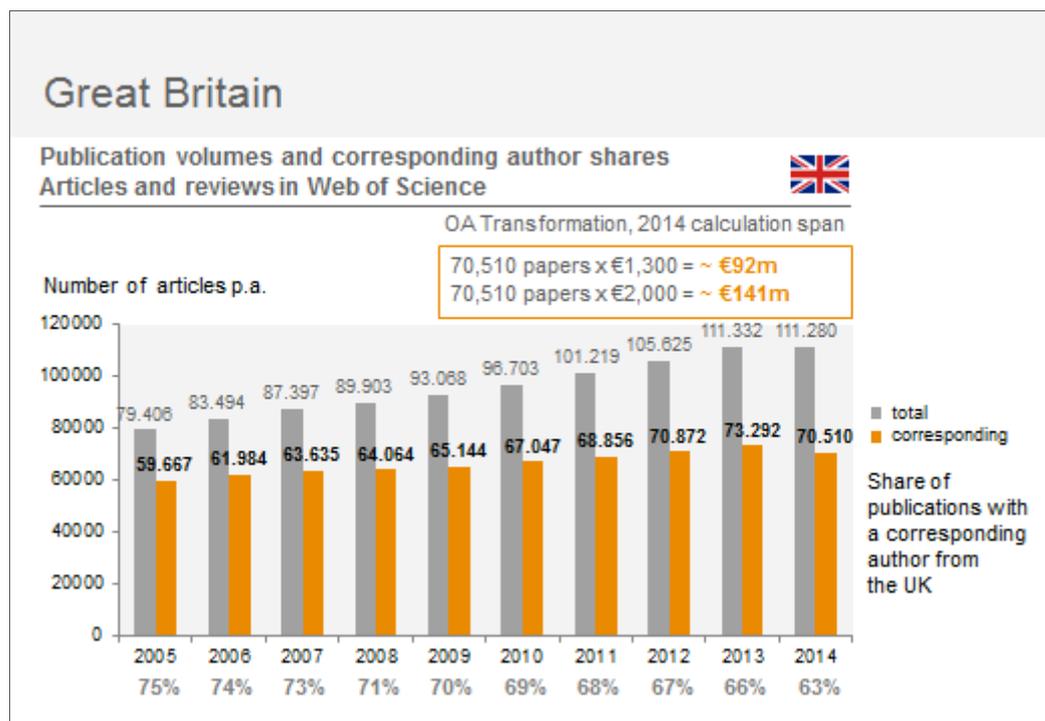


Figure 3: Cost projections for a fully-fledged OA scenario in the UK

More and more APC evidence available

In order to make OA transformation scenarios more viable, it is necessary to base the cost projections on evidence. In a move to bring transparency and transactional figures to the debate, increasing numbers of institutions and initiatives are starting to report their experience in financing OA publishing services. Examples are the annual financial reports of the Wellcome Trust and the Austrian Science Fund, and the APC price points as published on a regular basis by SCOAP3.⁴

At this point in time, the Germany-based Open APC Initiative is the most comprehensive source of APC evidence. It is positioned to develop into a global reference standard for the reporting of APC data. Universities and research institutions internationally are invited to contribute their APC expenditure data to Open APC in order to build up a comprehensive data set that allows for extensive analyses and fosters transparency on the evolving APC market. Costs are documented by institution, differentiating between Gold and Hybrid expenditures. Most recently, Open APC set up a dedicated collection of data sets comprising articles published under offsetting deals such as the Springer Compact pilot agreements. The Open APC data as such is collected in a Github system; through the introduction of Treemaps, a more powerful visualisation layer for the very same data could be offered, allowing for drill-downs through various layers, from country to institution, from publisher to journal, all the way to the individual article.⁵ Such possibilities provide insight not only into costs but also into the interest and relevance of a particular journal for a given research institution.

Opening the eyes to a deteriorating system

This exciting new work is emerging in the context of the ‘serials crisis’ that is requiring libraries to service readers’ requirements from budgets that are under ever-increasing pressure. Libraries have been devising compromises that include offering limited ‘on demand’ access to articles as an alternative to subscriptions, negotiating the purchase of single journals rather than bundles, and making informal requests through diverse channels such as personal connections or Twitter’s #icanhazpdf. These various ‘workarounds’ are evidence of the shortcomings of the current system, and yet they have so far had insufficient direct impact to effect fundamental change.

In what might be seen as the ‘Napster moment’ for academic publishing, Sci-Hub, a significant pirate provider of research papers, is playing out a version of Hans Christian Andersen’s fairy tale, *The Emperor’s New Clothes*, with its provocative challenge to the established order. This at-scale disruptor is currently giving access to 47 million articles, and continues to acquire material in response to specific requests. Users’ motivations may include convenience as well as

⁴ A comprehensive overview is provided on this by Romeu, C. al. (2014): ‘The SCOAP3 initiative and the open access article-processing-charge market: global partnership and competition improve value in the dissemination of science’ ([DOI:10.2314/CERN/C26P.W9DT](https://doi.org/10.2314/CERN/C26P.W9DT)).

⁵ <http://treemaps.intact-project.org/>.

necessity, given reports that many downloads take place in the relatively wealthy OECD countries, and that Sci-Hub provides a simpler interface than the arcane structures imposed by the current subscription system.⁶ The access Sci-Hub provides is free in both senses: it is open to all, and operates outside any financial model. Though the underlying sustainability of Sci-Hub's approach may be artificial, the provocation is real. By explicitly articulating a distaste for the publishers' extreme profitability and the implicit separation of the source of creation from the basis of reward, the pirate platform rattles any remaining notions in the academic world that the entrenchment of the subscriptions model is 'inevitable'. This confronts libraries and publishers with a painful challenge: can we really pursue 'business as usual', desperately attempting to stabilise a disintegrating, anachronistic system that is not fit for purpose in a 21st-century environment, now that our bluff has been called?

Reading the signs of the times

Beyond the Sci-Hub shock and its de-legitimizing of the current system, there is plenty of evidence that the publications landscape is in the process of being restructured. The transformation of academic publishing to OA requires a re-allocation of budgets and the conversion of journals to a new publication basis through the redesign of the processes. The OA2020 initiative focuses and articulates the rationale and plan for the large-scale transformation. We have sound, data-rich evidence that there is already enough money in the publishing system overall. There are sophisticated analyses available for cost-modelling, and increasing quantities of APC evidence are being collected and reviewed. Political initiatives are signalling serious top-down commitment to radical change, and these are being echoed in developments of solid infrastructure and guidance towards change, as in OA2020's *Roadmap* and the emerging standards in handling APCs (e.g., through ESAC⁷).

The increasing urgency for an orderly transition

The Berlin Conference's 2013 mission statement asserted the need for a 'viable, coordinated and transparent strategy' for the move into OA publishing that should address the issues of standards, quality, stability, and a smooth transition. In the quest for the multiple benefits of Open Access, there is no dispute about the value of academic publishing's core functions; the world of scholarship is clear about the need to retain these specialist inputs and remunerate them appropriately. However, as increasing numbers of individuals and organisations recognise that a centuries-old distribution system has reached its expiry-date, the days of the current 'business as usual' approach are numbered. Now that information can be tweeted around the globe in seconds, the existing mode of scholarly communication seems absurd.

⁶ Bohannon, J.: 'Who's downloading pirated papers? Everyone', in: Science Mag, Apr. 28, 2016. <http://www.sciencemag.org/news/2016/04/whos-downloading-pirated-papers-everyone>.

⁷ <http://esac-initiative.org/>.

Despite the progress that is under way, there nevertheless remains scope for sudden, disruptive and problematic shocks that could result in regrettable casualties. If the orderly transformation of academic publishing is not achieved within the next few years, it will not be long before the next generation simply pulls the plug on it. The proponents of Open Access must therefore build a strong bridge into the future that will also provide a secure way ahead in the face of the more chaotic changes that might otherwise come to pass.

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This is an opinion piece by Ralf Schimmer, Max Planck Digital Library; and SPARC Europe considers this as one of the various means to move forward with OA.