Rebooting
Open Access

The publishing world has changed dramatically with the relentless progress of the internet, but publishers continue to bank on strategies from the age of print. We present a case for the necessary transformation of the scholarly journals' business model – and an outline of the path to get there.

TEXT **RALF SCHIMMER**

For well over ten years there has been a demand for free access to the outputs of scholarly work, with open access (OA) being the focus of an approach that stands, full of promise, in complete contrast to the prevailing model. Despite this demand for open access, only about 15 percent of scholarly articles per year are currently available in this format. Proponents of OA are therefore now beginning to wonder whether the initiative's strategic direction needs to be reconsidered: whether open access needs a reboot, so to speak, to achieve the very concrete goal of transforming the publishing industry's business model, which – despite the demand for OA – is still based on subscriptions.

Only 15 percent of scholarly articles per year are currently available through open access

Today it is almost impossible to imagine doing academic work without the opportunities the internet offers. Publishing environments already utilize digital technologies to support every aspect of the production process, from manuscript preparation to submission and peer review, and in almost all cases, publications appear in electronic form regardless of whether there is a parallel printed version. But at that crucial moment of the finished product's distribution, the digital process is fatally disrupted. Rather than being exhaustively promoted through the extensive real-time distribution possibilities that are an inherent feature of the internet, the laboriously created and quality-controlled publication is managed according to a philosophy of scarcity that, from a 21st-century perspective, can only be described as artificial. Publishers go to great technical and legal lengths to place content behind paywalls and eliminate opportunities for unrestricted access. >

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This scarcity is caused by the remarkably tenacious conventions of the subscription system – by entrenched policies and procedures that were established between publishers and libraries over the course of many decades and that restrict access to the content of a scholarly journal to those readers whose library has acquired a subscription. This basis of exchange, to which both libraries and publishers readily accede, has remained surprisingly unaffected by the modernizing pressures of digitization. Hardly any other area of scholarly communication has escaped change to this extent, which is all the more perplexing given both the overall importance of journals to scholarship and the substantial amount of money involved.

The concept of scholarly journals dates back 350 years to a period in which the compilation of scientific papers and particularly their distribution presented significant challenges; these two dimensions governed access. This centuries-old production challenge has defined the approach to scholarly communication up to the beginning of the 21st century. Although this physical distribution challenge has been eliminated in today's internet environment, the subscription-based distribution and financing model persists, along with its inherent scarcity effects. It is beginning to dawn on the scientific community that the subscription system itself is the most significant barrier to open access, and that it will be necessary to tackle this problem if OA's breakthrough is to be achieved on a larger scale.

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Free – in the sense of unrestricted – access to the results of scholarly work through the removal of all the barriers that exist is, in principle, the central objective of every open access initiative. As the initiator of the 2003 *Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities* and co-host of twelve Berlin Conferences so far, the Max Planck Society has always been at the center of the debate and is recognized the world over as one of the driving forces behind the movement. Together with a steadily growing number of scholarly institutions in many countries, the Max Planck Society is involved in projects, alliances and pilot enterprises to advance the principle of open access. After a decade of international development work, open access is now firmly established in scientific policy discourse all over the world. It is significant that the Global Research Council, established in 2012, immediately devoted attention to this topic, devising a corresponding resolution within a year of the Council's foundation. At the national level, too, predominantly in Europe, various initiatives have articulated increasingly ambitious goals. In the first half of 2016, these developments were adopted at the European level under the Dutch EU Council Presidency as the *Amsterdam Call for Action on Open Science*.

There is a striking gap between the widespread embedding of open access as an objective in scientific policy-making and the rather sobering fact that, despite all this support, only 15 percent of scholarly papers per year are published as open access. Perhaps even more significantly, this OA proportion – which is currently increasing by about one percentage point per year – does not by itself exert any transformative pressure on the subscription system. So far, there has been no sign of any shift in the prevailing distribution and financing arrangements, nor any attenuation of the relentless cost pressure on libraries as a result of the annual price increases demanded of them year after year by a monopolistic journal publishing industry. Despite the many achievements of open access to date, the traditional subscription system for academic journals continues to prevail. Indeed, it is thriving: the return

on sales of the big commercial publishers continues to rise, with margins ranging between 30 and 40 percent. There is much more money to be made in publishing scholarly information than in the automobile or oil industries; only Google and Apple are similarly profitable.

Proponents of open access are increasingly realizing that, while all the measures of the past ten years have certainly been useful – as seen in the adoption of requirements and mandates, the set-up of institutional repositories as instruments of the "green road" of secondary publication, and the countless recommendations and other documents supporting a broad advocacy strategy – a new strategy is nevertheless needed to establish open access on a grand scale. The measures implemented during the past ten years have been excessively focused on adjusting scientific practices to a particular notion of open access. It had been envisioned that scholars would have to move toward open access, so the governing idea was to steer their behaviors in a certain direction. Perhaps it is time to reverse that focus and move in the opposite direction. Rather than putting the onus on scholars to have to act in the spirit of OA, an alternative approach would be to embed this functionality anywhere it concerns them in their day-to-day work.

It is crucial that open access include the familiar and established journals that offer a perceived level of quality and certain career opportunities. If a scholar is attracted by a journal's reputation and wants to publish there, we should surely not view the scholar's stance as an obstacle, but rather the journal's expensive and restrictive business model.

Establishing OA as the standard for scholarly communication requires that the corpus of scholarly journals – currently distributed through the subscription model and withheld from free use behind a paywall – be shifted to an open access business model on a large scale. The transition of existing journals is the ultimate and crucial goal of the transformation of publishing to open access: the payment streams that have traditionally been directed toward financing journal subscriptions, and hence read-only access, should be redirected toward the immediate payment of publishers' publication services. For more than a decade, such pioneering publishers as Biomed Central and PLOS have been demonstrating how OA-conforming business models can be developed and managed. Many publishers have followed their example, which is based on publication fees – so-called article processing charges (APCs). However, the practice of open access publishing also embraces other successful financing models that shouldn't be overlooked.

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Many individuals and organizations are involved in advancing the debate about the transition to OA and the eventual elimination of the subscription system, not least of which is the Max Planck Society. In April 2015, the Max Planck Digital Library (MPDL) published a white paper (http://dx.doi.org/10.17617/1.3) that established the fundamental feasibility of a large-scale transition to open access based on a careful analysis of both publication data and academic publishers' sales figures. Market analyses show that academic publishers generate annual revenues on the order of 7.6 billion euros from global journal subscription sales. According to relevant publication databases such as the Web of Science, around 1.5 million articles are published annually in journals with an international reach. Doing the math, we arrive at a figure of about 5,000 euros being paid for every single article under the current subscription system; this is a substantial

sum that far exceeds the costs we have seen to date in the purely OA publication market. The declared costs in that market segment currently yield an average price of 1,300 euros for German universities. Even assuming that publication numbers and average prices will ultimately be higher, all the available evidence suggests that converting the subscription model to OA would be feasible within the limits of the financial resources that are already being deployed, without additional costs. In short, it is clear that there is already enough money in the publishing system to transition to OA.

Since its release in the spring of 2015, the MPDL white paper has become a central reference document for the global transition debate. The interest it stimulated was apparent at Berlin 12, a two-day international conference in late 2015 at which 100 representatives from 19 countries accepted the Max Planck Society's invitation to discuss an accelerated path to open access. There was general agreement at the meeting that the participants should collectively work toward the transformation along the lines of the arguments presented in this paper. The outputs of the conference, an Expression of Interest and a Roadmap action plan, were released in March 2016 as part of the Open Access 2020 campaign. Since then, there has been a steady increase in the number of scholarly organizations that have committed themselves to this campaign by signing the Expression of Interest. At the same time, increasing numbers of individual organizations and associations are recognizing that the subscription system is well past its expiration date, and that the financial flows need to be adjusted in order to effectively reform a system in which the substantial current spend produces levels of accessibility that appear meagre and intolerably restricted in the 21st century's digital world. It is becoming increasingly clear that a vastly superior system of scholarly communication could be developed and financed at no greater level of investment than the current system requires.

What needs to happen to bring about the desired transformation? The key to success is in the hands of those institutions that administer the funds and decide where to allocate them and where not to; namely, the academic institutions, represented in this matter by their libraries. A substantial part of the campaign for change must therefore be directed toward libraries and their umbrella organizations. Now that the financial viability of OA has been demonstrated, a planned transition of the basis of payment from subscriptions to publishing services will involve applying new parameters and developing new process workflows. Libraries will need to gather much more accurate information than they have in the past about the volume of publications and their distribution among the various publishers, so as to develop transition scenarios and cost models, and on this basis establish target-oriented transition models with publishers. Such transition approaches have been steadily spreading for about two years, and are the furthest advanced in the UK, the Netherlands and Austria. In Germany, the MPDL has been actively working on transition models, and has been involved in a pilot project with Springer since late 2015. Other institutions have been following this lead, with the result that new announcements and contracts can be expected very soon.

In Germany, the Max Planck Digital Library has been actively working on transition models

A new contract model – described in professional circles as "offsetting" – has been established to support the transition; it provides a good entry point for a systematic redeployment of licensing costs (subscriptions) as publication costs. This approach attempts to release the stranglehold of subscriptions by demanding additional open access services based on current sales volumes. In this mod-

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el, the library remains a subscription customer, continues to receive the required access rights, and secures for its patrons the right to publish in open access – all of which should ideally be achieved within the range of the current spending level. Offsetting's wider aim is a system change; it is a transition model, since it is not only the contracts' basic rationale that must be changed in the spirit of open access, but also the underlying financial flows and related accounting processes.

Academic organizations are using such transition models to offer publishers the opportunity for an orderly transformation. Although the targets of the transformation are the business model and the basis of payment to publishers, the aim is nonetheless to preserve publishing services as such and ensure that they continue to be remunerated fairly and appropriately. The disruptive element of the transformation is directed only at the financial flows, not at the exchange relationships between researchers and publishers overall. Research and publishing can unite in a large-scale transformation of these old-fashioned business models to put an end to the current artificial scarcity of academic content and create an environment that is geared toward maximum distribution, thus satisfying the legitimate expectations of today's digitally enabled world. At a time when information can be tweeted around the globe in seconds, the existing mode of scholarly communication seems absurd. If the orderly transformation of academic publishing is not achieved within the next few years, it won't be long before the next generation simply pulls the plug on it. ◄

THE AUTHOR

Ralf Schimmer, born in 1962, is Head of the Information Division and Deputy Head of the Max Planck Digital Library in Munich. A Doctor of Social Science, he is responsible for the centralized provision of electronic information to all Max Planck Institutes and has been involved in the Max Planck Society's open access objectives since the Berlin Declaration of 2003. Schimmer is a member of the advisory boards of various information facilities, EU projects and scientific publishers. He is currently Project Manager of the Open Access 2020 initiative and a member of the Steering Committee of the Priority Initiative "Digital Information" of the Alliance of Science Organisations in Germany.

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