

## ScienceOpen: the next wave of Open Access?

**Author :** Editor

**Date :** 24 November, 2014



The internet is transforming the way researchers communicate. And the pace of change is increasing. A number of issues have arisen under increasing public scrutiny. These include peer-review transparency, open data, evaluation of research impact—both based on articles and authors—as well as research reproducibility. At the same time, demand for real time Open Access (OA) to the latest scientific and medical results has rocketed.

As a result, the number of information sources and service providers is expanding. It is into this crowded and competitive—yet vibrant and creative environment—that we launched [ScienceOpen](#) in May 2014. It is a self-described “research + OA publishing network” that is designed to offer rapid publishing services and to facilitate expert peer review after publication either of the articles our network publishes, or of one of the OA articles from ArXiv and PubMed Central—which encompasses the content of OA publishers such as PLOS, F1000R and PeerJ content—aggregated under the umbrella of our publishing platform.

### **Origin of the concept**

The idea stemmed from my experience of working for two decades as a physicist, a publisher and now as a professor of publishing management at [HTWK Leipzig](#). This convinced me that there was too much revenue at stake within the traditional publishing industry to facilitate the

rapid evolution of truly open communication of scientific ideas and results. Legacy publishers seem to be prisoners of their past. They are trapped by the business model that they have inherited. They are squeezed by their shareholders. Above all, they are paralysed by their need to maintain the high profit levels to which they have become accustomed.

Transitioning away from the publishing industry into academia, gave me the time and space to more objectively view the challenges that face scholarly publishers. And to better understand the perspective of the audience of researchers that they serve. These scientists seem to have largely been forgotten in the publishing process.

From these observations, I concluded that newcomers in science publishing would need to display greater openness. To demonstrate this vision of the future of scientific publishing, I partnered with Tibor Tscheke, a scientific publishing expert who runs a content management software company, called Ovitax, based in Boston, Massachusetts, USA. Together we decided to launch ScienceOpen.

### Underlying philosophy

What lies at the heart of our vision for our new publishing network is the premise that scholarly publishing is not an end in itself. Instead, we believe that it is the beginning of a dialogue to move research forward. We do not want to be just another new OA journal. But will develop our platform into a service-provider for research authors from all disciplines; from the natural sciences and medicine to the [humanities and social sciences](#). This way, we wish to spread OA to all research in its broad diversity and make even more of the world's knowledge freely available to read and re-use.

Our idea is to offer an improved service during the publishing process. For example, we have brought back basic author services that used to be a *de facto* publishing standard but disappeared from some OA services, such as proofing, copy editing and language help. We have also addressed the revision process, which takes place, for example, in response to peer review recommendations. It seemed to us that versioning would be helpful. This is why we facilitate two versions—minor or major—to ensure that the full history of the article is completely visible.

To address a key issue of concern to researchers, we wanted to improve the pace of publishing. Rather than waiting months for research to be published under a traditional pre-publication peer review system—such as that still used at PLOS ONE—we set ourselves a goal of publishing results online with a Digital Object Identifier (DOI), within about a week after an internal editorial check. We call this a preview article since it has a DOI and is published under the ISSN 'ScienceOpen Research.' Since our publishing network was built on a flexible content management system, we are able to offer all article types for cost-effective price of \$800 (€640).

Naturally, we believe that OA is a pre-requisite for the future of scientific publishing. But it is not the only dimension that needs fixing! Put simply, the current peer review system does not work. In traditional peer review, editors attempt to predict the future importance of an article. By acting as gatekeepers, they effectively ensure that a great deal of submitted manuscripts will never be

published. In addition, the behind-closed doors peer review selection process also slows science down while being rewarded by higher impact factors. Both of these aspects makes the traditional publishing cycle difficult to break.

### **Post-publication peer review**

As a solution to this dilemma, we offer non-anonymous post-publication peer review as illustrated in these [examples](#). Authors can suggest up to ten people to review their article. Reviews of the articles we publish and any of the nearly 1.4 million other OA papers aggregated on our platform, are by named academics. To be eligible to become post-publication reviewers, researchers need to have at least five publications on their [ORCID ID](#). This is our way of maintaining the standard of scientific discourse. We believe that those who have experienced peer review themselves should be more likely to understand the pitfalls of the process and to offer constructive feedback to others.

All reviews require a four point assessment—using five stars—reflecting the level of importance, the validity, the completeness and comprehensiveness of the work. There is also space to introduce and summarise the material. To give credit to busy researchers, who are tired of participating to peer-review without recognition, each review receives a DOI. This means that others can find and cite the post publication peer-review analysis. The contribution thus becomes a registered part of the scientific debate.

When peer review is done in the open by named individuals, we believe it should be more constructive. And potential issues will surface more quickly. The resolution of matters arising is not simpler or quicker because they are more obvious, but at least they can be seen and addressed.

### **Participatory science**

The aggregated OA articles on our platform are from other leading OA publishers such as [PLOS](#), [F1000 Research](#), [PeerJ](#). Over the coming months and years, we will expand this mirrored content.

We would like to explore what advances become possible when a growing proportion of the literature—be it from scientific, medical or from other disciplines—is published on a single platform, and is available for curation by the research community. This is why we recently [announced](#) the ability for members of the community, called Community Editors, to create and visually customise their own content collections and receive a modest stipend for their efforts. We also hired [Richard Gallagher](#), an esteemed Nature and Science Alumni, to lead this part of our vision.

We believe that access to the data that underlies articles will likely become an extremely important element in the way communication surrounding research is taking place. Each article then increasingly becomes merely the ‘wrapper’ for an ongoing conversation about the research. This may reveal in the future that the article format is not adequate for this task.

What is also clear is that replicating and reproducing experiments would be facilitated by an increasing focus on the data. This means that –in the spirit of full transparency-- negative results also become a vital part of this equation.

### **Next stage**

It has taken approximately ten years for OA to lay the ground work for a more open dialogue around research. This is not a quick shift by any means. Nonetheless everyone involved has a great deal to be proud of. I think that science publishing will continue to evolve and that the pace of change is starting to increase in a way that is noticeable.

My wish is that all research stakeholders, including previously underserved authors, will benefit from better, faster and cheaper OA publishing services. I also hope that this will enable science to move forward more rapidly and transparently. Ultimately, I hope that public faith in the way research is communicated will be restored through greater replicability and fewer retractions.

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Photo credit: Alexander Grossmann