

# Towards a New Relevance for Research Libraries

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## Abstract

The invention of printing in 1455 by Johann Gutenberg and the invention of the World Wide Web in 1991 by Tim Berners-Lee have often been compared when it comes to making knowledge accessible. Both events marked a breakthrough with far-reaching social consequences. The printing press led to the disappearance of monastic libraries and their scriptoriums as sources of knowledge, to make way for university libraries and publishers. The Web is again a revolution in the distribution of knowledge, embraced by the academic community and culminating in the Open Science movement. This editorial is an exploration into the challenges that this development poses for the roles of publishers and libraries.

**Keywords:** Future library; open access; publishers

## 1. The Decline of Academic Libraries

Traditionally, every university had its own library – in the Netherlands required by law until 1980 – which built up a scientific collection and made it accessible through card catalogues. In the 1960s, the first non-paper sources of information emerged. Large files of excerpts from published papers became searchable both via telephone connections and later from CD. The articles themselves were then copied from the library’s paper journal collection. Not long after, libraries began digitising their own catalogs; often jointly, as in the Netherlands Central Catalogue. Then, when the publishers started supplying these metadata, the cataloging departments disappeared from the libraries, first for journals, later also for books.

The World Wide Web came into existence in 1991. Users got direct access to the available digital information, which grew exponentially. Through mergers and acquisitions, a small number of large publishers had established themselves at the top of the journal market where profit margins of 35% to 40% were the rule. Libraries could not follow the price increases and started to cancel subscriptions. Because the major publishers wanted to maintain their turnover anyway, they decided to further increase prices. This started a vicious circle that became known as the serials crisis.

In 2001, Elsevier was the first major publisher to break through this downward spiral with their move to the 'big deal'. This meant that a library committed itself to keep paying for its subscriptions list in exchange for digital access to all Elsevier journals. Other big publishers followed suit.

The big deals affected libraries structurally. First of all, digitisation made it unnecessary to bind the journals and store them in stacks. Then, the work of reference librarians became redundant as the package deals brought a selection of journals, and later also books, to an end. Finally, the classic university librarian, in those days a well-educated gentleman, had to make way for a change manager. In some universities the library, once a proud 'bastion of knowledge', became part of the facilities department of the university.

## **2. Open Access**

While publishers and libraries concluded their first big deals, the academic community formulated a number of 'declarations of independence': the Budapest Open Access Initiative (2002), the Bethesda Statement on Open Access Publishing (2003) and the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (2003), with the common message that from now on scientific publications should be circulated immediately and freely. The business model of publishers had to be overhauled; their revenue model would no longer be based on ownership and exploitation of copyrights, but on the provision of services. Copyright should remain with the authors or their institutions.

The publishing world reacted in diverse ways. A few open access publishers emerged, like BioMedCentral and Public Library of Science, with a business model based on article processing charges. Most subscription publishers kept

silent. The big ones reacted in an unfriendly manner and started opposing campaigns and lobbies, and the growth of open access publishing remained limited to 1% per year until about 2015. It was Springer who broke the deadlock. If a library was prepared to extend its big deal to a multi-year contract, they offered to make new articles of researchers of the corresponding institution openly accessible. When cOAlition S, a consortium of research funders, declared in 2020 that this was acceptable to them as a transitional route to open access, this approach became more widely accepted. Today, a robust share of all articles is published in open access, in some countries even the majority. But open access publishing as such has not yet reached its full potential. It is often slow, the main part of the process – the peer review – lacks transparency (Tsakonias, 2021) (thus enabling predatory publishing), authors may find their rights retention disputed or still meet financial barriers on their way to publish.

### 3. Solutions are Available

Initiatives have been developed to address these defects. Today, preprint services facilitate direct publishing, journal-independent peer review services offer transparency, and diamond open access journals circulate articles free of charge for both authors and readers. Together these components could constitute an adequate publishing infrastructure if only they were fully interoperable.

A preprint service – actually there are quite a few of them – posts a submitted article on its website, usually within two days together with a CC BY licence of the author's preference. The website makes clear that the article is not peer reviewed, although readers often have the opportunity to comment. Subsequently, the article may be submitted to a journal-independent peer review service (Brainard, 2022). If the service will consider the article, a dialogue starts between the author and the reviewers. The dialogue itself may remain undisclosed, but the final peer review reports and a conclusive recommendation are published. So, it is for everybody to see which issues are addressed in the peer review report, e.g. reproducibility. All contributors retain the copyrights of the documents they have written. The published documents are interlinked (via Crossref, <https://www.crossref.org/>) and freely at anyone's disposal.

Additional options are then available, such as:

- Circulation of the article in a specific community via, for example, journals, Wikipedia, websites/blogs/twitter/LinkedIn, ResearchGate, seminars and conferences, Society (<https://society.org/>), Google Scholar.
- Collecting article metrics such as citations, downloads, views, bookmarks, retweets/likes which may come from Google Scholar, Research Gate, Altmetrics, RePEc, Twitter, Crossref, and others.
- Long term preservation. Institutional repositories are perfect for this, as universities never go bankrupt. CLOCKSS (<https://clockss.org/>) might also be an option.

Bear in mind however, as the published article already has a CC BY licence, any journal could republish the article if they deem it relevant to their readership. The article could then be commented upon by editors or readers, the author could be invited to participate in the debate, a lay summary could be added, applications could be mentioned, etc. This need not be a costly process as it can be conducted completely digitally. Diamond open access journals could fulfill this role perfectly. What's more, they are one of two effective remedies against predatory journals (the other one being open peer reviews).

#### **4. Open Science, a Next Step**

Particularly after the Second World War, the impact of science on society increased sharply, but they remained separate worlds, with society as the recipient of scientific results. The Berlin Declaration of 2003 broke that paradigm by declaring scientific research part of the public domain. While open access publishing as such got off to a slow start, the socialisation of science was unstoppable and open access morphed into open science. The entire research process should become transparent: from the project proposal via research design, laboratory logs, clinical trials, data and code used, reports, dissertations, successive article versions and peer reviews, to evaluation and valorisation. Science journalists, bloggers, layman's summaries, open days and webinars provide more and more insight into the latest results. Citizen scientists, citizens who are actively involved in science, underline this development.

The major publishers have embraced open science. Through acquisitions of successful new initiatives, through mergers or through their own developments, they – Elsevier in the lead, followed by Wiley, Taylor & Francis and SpringerNature – have expanded their range of services, aimed at supporting the entire chain of proposal, research, publication and evaluation. And not to forget Clarivate, itself not a publisher, but owner of Web of Science, among others. These players integrate the separate services, which improves their efficiency and user-friendliness. It gives them deep insights into the underlying processes and data. Based on this, they can then provide services such as identifying experts, mapping research networks, monitoring funding opportunities, tracing literature use, evaluating research groups or investigating institutions. The academic world is watching this development with mixed feelings and is concerned about the information position these dominant players are thus building, and their use of it.

After tough negotiations, the Universities of the Netherlands and Elsevier agreed in 2019 to *“carry out a number of pilots to develop new Open Science Services for Research Intelligence and Scholarly communication.”*<sup>1</sup> Some pilots are underway, mainly concerning dashboards where aggregated data from various sources are presented in a neat way. But the Elsevier contract also raised a greater awareness about ownership and openness of data and software, and transparency of algorithms. As a result, a task force formulated ‘Seven Guiding Principles for Research Information’ (Bijsterbosch et al., 2022), which have been adopted by the Dutch academic community. An international context is *“considered especially critical in order to establish sufficient critical mass in a globalised market of information services.”* So far, however, both the Dutch contract and the guidelines seem to be unique.

## 5. Action and Support

An important issue concerns the financing of the new publishing developments. Today, substantial project funding comes from powerful financiers like Gates, Zuckerberg, Arcadia, Mellon or the European Commission. The long-term sustainability of the new infrastructures and services is often still an open question. However, if direct publishing and diamond journals become the norm, millions of Euros now paid by libraries to (expensive) journals fall free.

Research funders and universities could accelerate the processes if they:

- Require direct publishing of articles via preprint services (Sever et al., 2019). After initial hesitations publishers no longer seem to object that articles are published as preprints prior to submission to a journal. Actually, Web of Science<sup>2</sup> and Scopus (McCullough, 2019) now index preprints. And, of course, Crossref (<https://www.crossref.org/>).
- Recognise peer review as an essential academic task. This step harmonises with the revision of the academic recognition and reward system that is underway, first in the Netherlands<sup>3</sup> but recently Europe-wide (<https://coara.eu/>) and would create a win-win for both developments.
- Grant peer reviewed preprints an equivalent status to journal articles. cOAlition S (Plan S, 2022) and a growing number of funders (Pack, 2022) already do so.
- Put research intelligence as an item on their – international – agenda, as a critical issue in the context of academic sovereignty (Bündgens et al., 2022).

Libraries could contribute by

- Making authors and policy makers aware of the available new publishing options: pre-printing, journal-independent peer review, and diamond open access journals, and provide independent advice.
- Launching diamond journals which accept peer reviewed preprints. A small editorial team could then focus on the community they want to reach out to. Platforms such as PubPub (<https://www.pubpub.org/>) are there to help set up and organise a community. DIAMAS (<https://diamasproject.eu/>) is a large-scale European project to stimulate ‘*Institutional Publishing Service Providers (IPSPs) [...] with special attention for IPSPs that do not charge fees for publishing or reading*’.
- Circulating the ‘Seven Guiding Principles for Research Information’ among funders and university board members.
- Preparing the institutional repositories for participating in research intelligence processes, to begin with the portability of the data. The rise of preprinting could further enhance this role (Waltman, 2022). Some libraries are already active in this area, often in close contact with staff from CRISs (<https://www.researchintelligence.nl/>). This challenging domain is still under development.

Finally, LIBER can continue to help libraries for example by supporting communities of practice both for open research intelligence and new approaches in publishing.

## 6. Conclusion

With exception of the cultural heritage libraries, the classical university libraries (with their stacks, catalogues and reference librarians) were marginalised by the digital revolution. If they are able to metamorphose into open agencies for scholarly information services, they will have a future again.

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<sup>1</sup> <https://universiteitenvannederland.nl/files/documenten/Nieuwsberichten/FAQS%20around%20the%20Elsevier%20VSNU%20agreement%20FINAL.pdf>.

<sup>2</sup> <https://share.vidyard.com/watch/Egdr6MN7iUv7ENWq8NSi3s>.

<sup>3</sup> <https://www.universiteitenvannederland.nl/files/documenten/Domeinen/Onderzoek/Position%20paper%20Room%20for%20everyone%e2%80%99s%20talent.pdf>.

<sup>4</sup> <https://www.cwts.nl/people/ludowaltman>.

<sup>5</sup> <https://pleiade.nl/contact/>.