# The Digital Faculty:
# What's Happening in Scholarly E-Publishing

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This article explores some issues and developments in scholarly publishing revealing a complex landscape of online activity with multiple stakeholders – authors, librarians, publishers, researchers - all with different agendas, goals and activities.

## How do scholars find articles?

Years ago it was simple. As a researcher, you walked into your institution library and consulted the journals relevant to your subject. After browsing the contents, you read a few articles, and your work was done.

Such a straightforward situation sadly no longer exists. Firstly, there are too many journals to search by hand! According to the 2015 STM Report, the number of researchers is growing by around 4%-5% per year, and the number of journals published increases each year by around 3.5%; in the past few years the rate has increased further, to around 6.3% since 2003. The reality of publishing today is exemplified by the journal PLOS ONE, which publishes around 100 new articles each day; and that's just one journal.

How do researchers find the content they are looking for today? They have several possible routes: they can get to a scholarly article via a library website, via a publisher's website, via an abstracting and indexing (A&I) service such as Inspec, or by Google (usually Google Scholar). Which do they prefer?

Simon Inger and Tracy Gardner have for several years carried out a major survey, How Readers Discover Content in Scholarly Publications, a study of over 40,000 users, with the latest report published just a few weeks ago in March 2016. Their findings are revealing. The most common discovery methods, in order of priority, are:

- The A&I service
- An academic search engine (Google Scholar)
- A general search engine (typically Google)
- Library web pages
- The publisher's website

Although A&I services have declined in popularity, they remain the single largest starting point for academic searches.

Since this survey has been running for some years, Inger and Gardner were able to look at trends over time, and they comment: "Whilst A&Is are marginally the most important search resource, their importance has consistently dropped since 2008. General search engines have lost some ground here to academic search engines ... All search resources that are under publisher control – publisher website, journal alerts, journal homepage and society webpage – have made gains."

They mention that social media tools such as Academia.edu and Mendeley are playing a steadily increasing role in article discovery, although in overall terms they represent a small proportion of total discovery.

This interpretation was criticised by Roger Schonfeld of Ithaka S+R in a Scholarly Kitchen post. He pointed out that Inger and Gardner carried out their survey using names supplied by publishers. These people had both registered at the publisher site and had agreed for their names to be used for further activities (they had "opted in"). Schonfeld suggested, with some justification, that such users were likely to be self-selecting as users of publisher systems. It was not surprising, therefore, that the publisher stats looked so high. Publishers will of course want usage of their platforms to be as high as possible. So the moral here is to be careful before interpreting results about what the assumptions behind those results might be. Who carried out the research, or more fundamental still, who selected the sample? Each party in the process has a vested interest in maximising their role.

## What do Scholarly Publishers do?

This may seem a strange question, if you have worked for a scholarly publisher. But for anyone coming to scholarly publishing for the first time, compared with educational or trade (bookshop) fiction, the scholarly publishing business is quite different. Perhaps the most fundamental difference between trade publishing and scholarly publishing is that the authors aren't paid for their work. On top of that, the publisher doesn't do the selection of what is published – that is the work of peer reviewers, academics who review the work of others.

So, to summarise:

- The academic author writes a paper (free of charge)
- The paper is peer-reviewed (free of charge)
- A publisher collects peer-reviewed articles in a journal, then
- The publisher sells the journal to an academic institution (for lots of money, paid for by the very institutions where the authors work).

### *Delays in Publication of Published Articles*

Not only does it appear that scholarly publishers earn a lot of money without paying any royalties, but they also (if you want to be uncharitable) take a long time to publish an article!

Daniel Himmelstein, a research biologist, asked why it took so long for his article to be published. On investigating many journals, he found (revealed in his blog) that the review time – the time between submission and acceptance of a scholarly paper – is typically around 100 days, and has been for the last 30 years. Worse still, figures from individual journals show that the review time for many of them has increased (at Nature it is 150 days).

Himmelstein followed up his research with a further blog post, where he classified delays into a) acceptance delays (the time between a proposed article being received by a journal and acceptance by that journal) and b) publishing delays (the time from acceptance to publication). Acceptance delay is around 100 days, as before, and publication delay has been reducing - it is around 25 days).

Overall, the time to publication, including both acceptance and production time, has not been substantially reduced since the advent of digital publishing, especially if you allow for submission to multiple journals. As a result, researchers are increasingly looking outside the standard scholarly publishing system, to alternative systems for making article available. Life scientists, for example, looked enviously at ArXiv, the dominant pre-press system for physics, following which bioRxiv for life science was launched 2013. Many of these pre-press archives are managed not by publishers but by not-for-profit institutions (a research laboratory for bioRxiv, Cornell University for arXiv).

Given the above, it's not surprising, therefore, that there are many calls for publishers to be replaced by libraries and institutions doing their own publishing. An example is a recent report by Ann Okerson and Alex Holzman (July 2015) published by Washington DC's Council on Library and Information Resources, which looks at libraries as publishers – not just of library catalogues, but of original scholarly works.

Okerson and Holzman go on to estimate how much it costs to publish one scholarly paper; they find a 2015 estimate that suggests the cost of creating a scholarly monograph to be $12,000, and they suggest this cost should be borne by institutions where the author works.

Of course, there are already some key examples of libraries acting as publishers. The initiatives they cite include some that would be described as publishing, Project MUSE, for example, (founded 1993, a collection of 600 peer-reviewed academic journals and 20,000 ebooks) and some that you might not define as publishing at all – more online content platform provision, like HighWire. It is not clear if they are suggesting that libraries are involved in the management of HighWire ("library staff have made appropriate

contributions to High Wire's activities" – what does this mean?) I would guess that HighWire runs independently of Stanford or of any other library. Whatever its achievements, it is not an example of libraries acting as publishers.

So you could say, if scholarly publishers don't pay authors, and they don't choose the articles that are published, then what do they do? Kent Anderson, a former scholarly publisher himself, has been publishing a regularly updated blog for some years to answer this and other questions. In his latest, 2016 version, he lists 96 tasks carried out by a scholarly publisher. They are grouped into five areas:

- Editorial
- Marketing
- Community
- Technology (e.g. metadata tagging, XML conversion, social metrics)
- Finance and business

His is certainly an insider view, the view of the publisher - he talks about "we" publishers, and it is certainly true that publishers will feel comforted and encouraged to learn they are doing so many things in the course of publishing scholarly articles, and that far from being superfluous, their job is important and undervalued. But on looking more closely at these 80 activities, many of them are statements of intent rather than actual activities. Of course publishers vary widely in the services they provide – many publishers are more active in broadcasting to their authors than listening to them and establishing a community (the third of Anderson's five categories). In fact, John Sack, head of HighWire, stated at the recent Academic Publishing in Europe Conference in Berlin "Do we as publishers want to support the full interaction around the knowledge, or do we want that happening somewhere else?" There is an increasing recognition amongst publishers that much of the activity around scholarly publishing passes the publisher by.

But for the moment, perhaps that doesn't matter. Perhaps the best summary of what scholarly publishers do was given by David Nicholas of CIBER Research, at the same Berlin Conference mentioned above: "The main currency for the scholar is not power nor wealth, but reputation. However, reputation has been built upon one activity - research, one output – publication and one measurement - citation. It is a narrow view of reputation that has, so far, served publishers well."

In other words, the scholarly publisher provides the reputation on which an academic career depends. The publisher-controlled journals, for the most part, have the greatest reputation. It is generally agreed that an article that appears in Nature has greater kudos and credibility than if the same article appeared in pretty much any other journal. To gain that credibility, academics need publishers.