

Mathematical Publishing: a transitional moment?

ICM 2014 Panel Brief

Mathematical publishing was the topic of a panel discussion at the ICM 1998 in Berlin. Then (as now) ever-escalating costs and increasing numbers of journals were central themes. Familiar to many then was the painful experience of joining with departmental colleagues and the librarian to decide which journals might well be cut in the coming year, in anticipation of a limited budget.

During the last 16 years we should ask what – in broad overview – has changed. First, there is growing interest, indeed commitment, by many to some form of open access to research results.

1. The Big Deal has penetrated widely via both country-wide access negotiations, and smaller consortia formed at province or state levels, or through other affinity groups. See Odlyzko, Notices AMS, April 2014, for a discussion of how this has wrought a much wider reach for more journals. At the same time, a side effect is disintermediation of subject specialist librarians. Gatherings of mathematics librarians no longer trade tips on how to cancel journals. Through the same developments, publishers have greatly lowered their risk of cancellations.

A recent study by T.C. Bergstrom et al "Evaluating big deal journal bundles," <http://www.pnas.org/content/early/2014/06/11/1403006111> suggests that "commercial publishers have not been able to induce most research libraries to sign big deal contracts, and the number to do so has fallen between 2006 and 2012."

Is bundling likely to play as central a role going forward?

2. New journals: lots of new titles – hundreds of them – are being founded by new entrants into the publishing business, with the objective of attracting author fees for "gold" open access publishing. It is unclear whether the mathematical community fully embraces the "author pays" basis for their journals. [See K. Fowler, "Mathematicians' Views on Current Publishing Issues: a survey of researchers" 2011. <http://www.istl.org/11-fall/refereed4.html>]

Today's newly founded subscription journals do not find many subscribers, unless they are made part of some (usually modest) sized journal grouping. Open access and big deals share the feature that it is not possible to cancel access to individual titles, which helped maintain quality both in library collections and in the publishers' journal portfolios. What concrete mechanisms can be used to discourage publishers from publishing low quality journals?

3. E-books in mathematics: often handled by general scholarly publishers as an afterthought, yielding bad presentation of mathematics in html or merely pdf copies of the printed text. This because the book side of the publishing process was dominated by humanities and social science considerations, rather than particular needs of mathematical expression.

4. ArXiv.org shows continuing growth in the mathematics area, while physics and some other areas of the server are leveling off in size. Financial support mechanisms seem to be coming into place, as well as extended governance structures for determining management direction of this service.

5. Newer forms of communication are being adopted by some segments of the mathematical community: blogs, wikis, special compilations and databases, e.g. The Stacks Project, LMFDB, Q&A sites (Quora), Math Overflow. What, if any, parts of these will be under consideration for long term digital preservation?

6. In order to introduce positive changes in the system for supporting mathematical communication, boycotts cannot be the only tools and means. What do panelists see as means for introducing change? Will existing programs of scholarly societies be inevitably damaged in the process?

7. What is the message we should be sending to the new mathematicians entering the field? They are the people who are best positioned to see change through. They are the ones struggling the the tenured positions. Can the panel suggest how this important group can have their say?