

**“AUTHOR SPONSORED JOURNALS”, A PRACTICAL  
VARIATION OF THE “OPEN ACCESS” BUSINESS MODEL**

KLAUS KAISER

1. CONVENTIONAL BUSINESS MODELS FOR JOURNAL PUBLISHERS

All publishers, whether they are “mega”– publishers, like Springer or Elsevier, or “micro”– one journal publishers, are constantly trying to find their optional business model in order to stay competitive and financially sound. In the following article, I will discuss the advantages and disadvantages of different business options from the perspective of a typical micro publisher: the *Houston Journal of Mathematics* (HJM), of which I am the editor.

Before the electronic revolution there was practically only one source of income for journal publishers: library subscriptions. This brings us to

**1.1. Subscription based business models for print copies.** Calculating revenue through subscriptions is simple and straight forward: Subscription revenue is more or less proportional to the number of subscribers. Rates must go up if subscriptions are going down. For publishers there are not many options left to offset declining subscription revenue through more efficient production. Efficient use of  $\text{\LaTeX}$  has reduced greatly, or even eliminated, the need for traditional (that is typing) secretarial assistance. Authors can be provided with journal-specific style files which allow them to prepare papers exactly as they will appear in print. For a properly prepared  $\text{\LaTeX}$  file, changing print style is only a minor task which can be completed in the journal’s office. Another cost saving measure is the elimination of free off-prints. Authors seem to no longer care about printed copies of their articles, providing the final PDF file to authors for no fee is sufficient.

While HJM has implemented those cost saving factors for more than a decade, not all publishers have been doing this. In his article “*The Future of Mathematical Publishing*”, Michael G. Cowling, an editor of an Australian Mathematical Society

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Journal, describes in [1] a completely different experience. He claims that “*L<sup>A</sup>T<sub>E</sub>X* has not reduced the cost of producing journals....and that some journals retype all articles that are sent to them...” Of course, retyping articles that have been typed before is a terrible waste of a publisher’s resources. While HJM has accepted submissions where authors had used something like MS-WORD with the equation editor, for final submission we only accept properly prepared L<sup>A</sup>T<sub>E</sub>X files.

In a pure subscription based model, rates are bound to go up for most journals. Besides inflationary pressures caused by printing and ever increasing postal rates, subscription cancellations can also be a major factor for price increases. The Internet makes subscriptions less necessary and subscriptions for multiple copies superfluous. Besides that, commercial publishers also have to meet investors’ expectations for higher profits. Journal production is considered a prototype for an “inelastic business environment” where very few major providers compete in a limited market. For publishers of research journals, the market consists of internationally recognized research universities, of which there are approximately one thousand, worldwide, and, of those, perhaps only a handful of publishers qualify as very major.

It looks to me that through their marketing divisions, the major publishers are in a stronger position to obtain new subscribers to offset cancellations, especially in academically strong but still under-represented countries, like China and South America. Journals like HJM depend in this respect more or less exclusively on the initiative of their authors.

I think that unless small journal publishers try to find new revenue sources, their subscription rates may go up more than is justified by inflation rates and, as a result over time, they may lose their traditional advantage of providing inexpensive alternatives to commercial publishers.

**1.2. Providing online subscriptions, opportunities and pitfalls.** In 1996, I became the managing editor of HJM. About four years later, electronic publishing was still in its infancy and L<sup>A</sup>T<sub>E</sub>X started to replace the older and much less user friendly versions of T<sub>E</sub>X. There were serious concerns that independent journals were ill-equipped to cope with changing technologies, and some publishing authorities predicted even the demise of independent journals. And indeed, the number of journals that are still run by a few individuals from their local mathematics departments is certainly smaller than it was ten years ago, and seems to be not growing. Some formerly independent journals have been absorbed by commercial publishers or have joined academic organizations, like `Project Euclid`.

My educated guess is that creating a subscriber base for restricted online access has been the main concern for small academic publishers, and a primary reason for them to join larger platforms. While HJM has been contacted by other publishers, none really made a convincing argument for HJM to move its operation outside the department.

In this context, I firmly believe that files of published material should remain in the hands of the publisher. Of course, HJM supports the major reviewing organs by allowing them free access to our files. I also believe that preserving and archiving of files has become a major responsibility of the publisher, and/or in co-operation with affiliated libraries. Besides providing archiving, organizations like *Portico* and *Lockss* can also arrange for perpetual access. But for inexpensive journals this additional service is of little or no importance. Of course, some librarians may disagree with me on this point. As I see it, for publishers, ownership of files constitutes a major asset and files should not be given away easily, certainly not for free.

I never believed in “moving walls”. As I see it, moving walls are bad business because they take away one important incentive for libraries to subscribe to online access: Most online subscription plans either include the archive for free, that is what HJM does, or make access available to subscribers of the current editions for a surcharge.

At the 2002 meeting on electronic publishing in Beijing I mentioned that HJM would be prepared to make electronic files freely available only if a sufficient number of major research libraries would agree to pay a somewhat higher subscription rate, in order to offset possible cancellations. There was an immediate response from one of the organizers, namely the head librarian of one of the “digital mathematics world libraries”, who spontaneously responded: “I would never agree to something like that”. For HJM this was the end of an idea. However, HJM decided to offer free online access, but only for subscribers of the print editions. A print subscription comes with free access to the whole archive, regardless of subscription history. Of course, we also offer “online-only” for the price of print-minus postage. Online access ceases with cancellation. For subscribers of HJM there is no post-cancellation access possible. For inexpensive journals which provide immediate unlimited access to the complete archive and for all of its current volumes, this might be a most reasonable policy.

Setting rates for the "**Online-Only**" option is somewhat tricky. Including online-access with a print subscription is what HJM does. But also some commercial publishers, like Springer, and most societal publishers, like the AMS, are

doing the same. There are some arguments that the ‘‘online-only’’ option should be lower priced than ‘‘print+online’’ or ‘‘print only’’:

While providing online access requires additional work, Internet presence is now a necessary and expected part of journal production; and an essential portion of it (Tables of Contents and Abstracts, for example) is actually offered for free. Only hot links to PDF files need an online subscription, where of course the PDF files should be the same as the ones used for printing. Of course, print obviously requires additional expenses for the publisher but also for the subscriber, for example in form of binding and re-shelving . HJM decided that the price for ‘‘online-only’’ should be the same as for ‘‘print+online’’ minus local postage. In a previous article [4] I have elaborated on this issue quite a bit more.

However, Elsevier does not offer a combined rate for ‘‘print+online’’. Print is offered by Elsevier at the same rate as online. While publishers are free to set their own rates, I think that this kind of pricing policy is puzzling. A library that wants to offer journal access in the periodicals room, but also provide access through its registered computers, obviously has to pay twice for journal content. For example, about \$7,000 for Elsevier’s Journal of Functional Analysis. This is considerably more than the advertised price of about \$3,200 for an institutional online subscription. It seems to me that Elsevier is discouraging print editions.

Moving walls are the same as free online access but delayed by a number of years. For the publisher, the same drawbacks we have seen for free online access should apply. Besides that, papers in mathematics stay ‘‘current’’ for many years. In a typical bibliography of an HJM paper, about eighty percent of all references are older than five years. The HJM policy agrees very much with the one of the *London Mathematical Society* which provides free access of recently published issues, but after a few months all papers are put behind a ‘‘subscription wall’’ [2].

Commercial publishers seem to change their policies concerning moving walls all the time. Ten years ago at an ICM 2002 satellite conference in Beijing, a major publisher, Springer Verlag, announced the five year moving wall for most of its mathematics journals. It now seems that Springer has modified its policy concerning access of ‘‘non-contemporary’’ articles. Another major publisher, Elsevier recently announced the introduction of a four year moving wall, probably in response to the highly publicized boycott movement.

Besides establishing moving walls, allowing files for Inter Library Loans (ILLs ) seems to be a questionable idea. A library that e-mails a file to meet a request from a non-subscribing institution does not experience any loss of usage, on the grounds that no loan has taken place. The HJM license has always excluded files to fulfill ILL requests. Actually, so far a majority of librarians agreed

with me on this point, especially because we offer the pay-per view option for a price that beats library expenses for fulfilling ILL requests.

Most publishers restrict postings of final published files on arXiv. There is a very interesting article by Susan Hezlet [3] related to this issue. In her article *Shifting Editorial Boards* she describes the fate of the prestigious Journal *Topology* after the whole editorial board resigned and the journal found a new home in the **London Mathematical Society**. This journal is now published by Oxford University Press under the new title *Journal of Topology* (JOT). While JOT is technically a new journal, everybody knows that it is the old *Topology* with a new cover. Actually, Elsevier's *Topology* has been discontinued.

It certainly came as a surprise to many people that according to Susan Hezlet, "...the *Journal of Topology* is not covering all its costs." As one explanation for the disappointing number of library subscriptions for JOT, Hezlet cites the very high number, namely about 90%, of JOT articles available as preprints on arXiv. Hezlet is probably correct when she says that "*discouraging authors from placing their pre-acceptance versions on the arXiv would clearly be unacceptable to the topology community*".

HJM has currently no official policy about posting files of published articles on arXiv. But HJM does not post articles on arXiv for archival purposes, and probably never will. arXiv is now fully owned and operated by Cornell University. This might lead to conflicts of interest because of Cornell's prominent role as a publisher and World Digital Mathematics Library. Only the future can tell us how arXiv will develop over the years.

## 2. ON OPEN ACCESS

Open Access (OA) is somewhat of a misnomer. Access is free, but only for the reader. For authors there are "processing charges". The non-profit publisher **Oxford University Press** charges for its **Oxford Open** option \$3,000 per article, while charges for **Hindawi** journals depend on the journal. For **Hindawi's** new journals, like *Algebra*, there are currently no fees, while for **Hindawi's** more established *Abstract and Applied Analysis* charges are \$1,200 per article. For publishers, OA is synonymous with the "*Author pays Business Model*". Peter Suber [6] calls this a "*common misunderstanding*". Suber seems to be conflating the vast number of OA journals that impose processing charges and the very few (at least for mathematics) non-fee based free access journals. The latter might be called **FA** journals, versus **OA** journals. Most **FA** journals depend on volunteers who work for free or receive small academic stipends. Sustainability of **FA** journals

remains on shaky grounds unless they can find a sponsor, say the host institution. Exclusive dependence on volunteers does not constitute a viable business model, in my opinion.

Proponents of OA don't like the idea of authors using money out of their own pockets to pay for processing charges. Their solution is that for non grant supported papers, library funds should be used for this purpose. According to Suber [6], "*A growing number of universities maintain funds to pay publication fees on behalf of faculty who choose to publish in fee based OA journals*". Indeed, some university libraries advertise on their web sites support of the OA movement and some libraries even organize OA meetings on a regular basis. My experience with librarians from such places has been mixed. First I have to mention Göttingen which has arranged for its faculty the **Open Choice** option for publications in Springer journals. This agreement between a major German University and Springer Verlag has been highly publicized. Springer charges for its Open Choice \$3,000. However, Göttingen provides this kind of support of OA only for Springer journals and it is probably part of a larger deal involving subscription rates and the inclusion of older Springer journals in the GDZ. The GDZ is a rather comprehensive open archive of books and journals. From my own dealings with Göttingen I got the impression that Göttingen does not support per-se page charges of its faculty. But Göttingen supports academic journals, like HJM through subscriptions. Unfortunately this cannot be said about all places which support some aspects of OA.

While the majority of OA supportive libraries which I contacted concerning page charges just ignored my request, I had somewhat more luck with a non-subscribing university in Germany. I sent them an invoice for the amount of \$600. We had accepted a paper, 60 pages in length, by a junior faculty member at that university. HJM's suggested fee is \$30 per page. But because of the paper's length I applied a \$1,200 discount. The library agreed to pay \$300. They argued that the remaining half of the fee \$300 should be considered as covered by the subscription of the co-author's library in Italy. The local author was also informed to be prepared to pay \$100 as his share of the deal. Of course, I accepted the offer in order to stay on good terms with this university.

This whole process took several months involving numerous email exchanges. The emails were not exactly on friendly terms, in part because the head of the author's group found it inappropriate to ask a subordinate about a possible subscription. The head of the author's group also expressed his belief that page charges were not ethical. He obviously was not aware of his own library's policy providing funds for page charges.

John Ewing's newly established blog [7] on Mathematics Journals deals with *Who Pays in Author Pay?*. In this article the former executive director of the AMS declares somewhat categorically: "*The author-pay model is exactly that—the author pays. We should not try to obscure reality with fanciful promises. Right now, the fee may come from the university or some funding agency, but inevitably the author “authorizes” the charge.... Over the long-run all journals will require payment somehow—they must. If one insists on gold open access, this is the price one pays. It may be worth the cost, but pretending there is no cost is foolish.*" When Ewing declares that *all journals will require payment..* he probably means all OA journals.

Most societal and independent journals allow for **green** access. That is, authors can post their refereed and edited papers on departmental websites and public repositories. Some journals go even further, the final published version can be posted on arXiv. While HJM does not encourage authors doing this, we also don't disallow this practice. At least for the time being. For HJM it all depends on arXiv's future behavior. For example whether arXiv starts adding meta-data to pre-prints which were not provided by the author. Unfortunately, if history is any guide, libraries are going to abuse such laudable activities as subscription *ersatz*. But another factor is that, legislations requiring free access to federally funded papers may force us to change our liberal arXiv policy. Clearly, requiring that certain papers *must* be posted on arXiv entails for the publishers that certain papers *cannot*.

Proponents of OA want to see subscriptions disappear. Here again I can cite Suber [6] with his subscription free vision of the future: *... as OA spreads, libraries will realize large savings from the conversion, cancellation, or demise of non-OA journals*". Suber does not say what libraries will do with the savings. He might not be aware that they might spend it on more big deals with the mega publishers. According to information I got from an author, his major university in Belgium cancelled all journals that were not part of package deals. Only after heavy protest from the math faculty, could AMS journals be saved. For journals like HJM there was no money left.

HJM is subscription based but since its inception in the year 1975, HJM has asked for voluntary page charges. But until recently, only few authors considered our request seriously. In recent years the situation has changed quite a bit. Despite that HJM publishes primarily in traditional areas of pure mathematics, a substantial portion of published papers are grant supported, and major grant providing organizations, like NSFC, DFG etc. explicitly allow for page charges. During the year 2012, for about 20% of accepted papers we received payments that were

close to the suggested amount of \$30 per page. Because of this additional revenue we were able to maintain our low subscription rate of \$0.10 per printed page.

While primarily subscription based, HJM is certainly not alone in asking for page charges. For example, *Indiana University Mathematics Journal* has been doing this for years. Societal publishers, like SIAM and ACM are on and off on this issue. But professional societies receive substantial income through membership and registration fees, and also their book programs probably subsidize journal production. Amongst non-mathematical and computer science journals, policies expressed by the journal *Evolutionary Ecology Research* [8] agree very much with the philosophies of HJM. In particular HJM fully agrees with the statement on publication fees made by the managing editor Michael L. Rosenzweig of this journal: *Rather than abandon the subscription model, EER is adopting the mixed model of funding that is described above.* This is exactly what HJM is doing.

My take: As long as a journal has a measurable subscription base, going OA doesn't make much sense because then the authors must make up for lost subscription revenue. Well-established research journals may have about 300 subscribers. While this sounds like a small number it is not bad at all considering that there are not more than about 1000 major research libraries as potential customers around. Asking authors for money is a sensitive issue and requires a case by case decision. Authors should be affiliated with major national universities and be supported by national grants. In case that their University library doesn't subscribe, asking such authors to do something about that is a very reasonable request, even in cases where the author feels that asking for page charges is not appropriate. However, for some countries, or type of authors, asking for any sort of support is a hopeless case.

In asking for contributions, journals like HJM acting a bit like public television: Subscriptions play the role of public funding and asking authors for money are our perpetual fundraising events. Only inexpensive non-profit journals can do this in good conscience. However, this kind of fund raising is very time consuming. It involves heavy correspondence with authors, invoicing and book-keeping. The money doesn't come in for free.

Authors who contribute to defray our publication costs must be given incentives and benefits to do so. As I mentioned before, like most academic journals, our journal does not impose much of a copyright restriction. Also, so far none of the authors who contributed money wanted his paper published under what is referred to as the **Open Choice** option. That is color coded as freely available amongst papers that require a subscription for access. However, a somewhat expedited publication is highly appreciated. This is what we offer. We do this



also in order to stay competitive with OA-journals where publication is more or less immediate after acceptance. For grant supported authors this may be necessary in order to meet deadlines of publication. Especially in cases where the refereeing process alone may have taken well over a year. Our backlog as published in the *AMS Notices* is close to two years. Of course, we sometimes apply other editorial criteria for faster publication. Also younger authors are routinely given preference.

Asking for page charges resembles the “author pays” aspect of OA. The main difference is that in our case, page-charges are strictly voluntary. For OA journals they are mandatory, unless a waiver has been granted, usually at the time of submission and before the refereeing process has even begun. For OA journals publication is immediate after acceptance whereas we can offer only expedited publication, often negotiated with authors to meet their specific needs. Referees of OA journals know that rejection of a paper means loss of income for the journal. This is not the case for subscription-based journals.

### 3. CONCLUSION

Only the future can tell whether pursuing this type of “hybrid” version of OA will be successful: Subscription-based with very low rates but asking for modest voluntary page charges, mainly from grant-supported authors. But I am quite optimistic. Besides providing some benefits for contributors, it is also a matter of convincing authors about the virtues of supporting a journal that is run and owned by the mathematics community.

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HOUSTON JOURNAL OF MATHEMATICS, DEPARTMENT OF MATHEMATICS, UNIVERSITY OF HOUSTON, HOUSTON, TEXAS 77204-3008, U.S.A  
*E-mail address:* [kkaiser@uh.edu](mailto:kkaiser@uh.edu)