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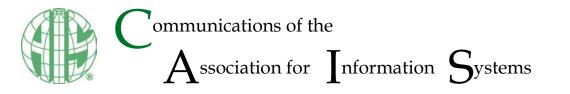
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Open Access: Just One Item in a Pandora's Box

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Open Access: Just One Item in a Pandora's Box

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Abstract:

The scholarly publication model is discussed and the impact of the current technological change on knowledge and communication generally on the scholarly publication model is set out. The proposal is made that rather than open access being the cause of the apparent and impending collapse of the scholarly publication industry, it is but one driver of a far wider change in scholarly publication. That change will have effects that extend well beyond the simple decision of whether a publication should be available by subscription or by one of the forms of open access. A number of other changes to scholarly publication are also itemized. The change is inevitable but its extent is as yet unclear.

Keywords:

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1   Introduction

The desire for open access to research is most definitely a contributor to the existing model of scholarly publication's coming demise. The current far-reaching changes to the existing model of scholarly publication are definitely rooted in the information technology-based changes that are transforming mass media systems and that have opened up a Pandora's box of alternatives to the existing scholarly publication model. In this new era, publication formats transcend print and images It is the changes in information technology permitting these new models that are definitely causing scholarly publication's demise.

However, maintaining the apparent continuity of open access to research is most likely the highest profile cause as far as academics are concerned for several reasons. It is a major issue for academics because they falsely assume that they have always had open access to research. In the paper-based era of publishing, monographs could be sourced through a library request, either for a local copy or an interlibrary loan. Journal papers were freely available as well, or, if the library was not a subscriber to the particular journal, a note to the author(s) would obtain a copy.

In all of this, the direct financial cost to the academic was nil, which fostered the belief that access to research was open and had always been so. There was, of course, a cost, but that was borne by the library and lost in the footnotes of the institutional budget.

The flip side of open access to research is that of researchers wanting their research to be openly available. This goes beyond a philosophical or ideological commitment to open access to research and is becoming a requirement of governments and other funding bodies. The open access debate and changes in technology that make universal open access not only possible but practical have brought home to these bodies that they were paying for not only the research to be done but also for it to be made available through journal subscription costs.

In this paper, I examine the current state of scholarly publication and the restructure which will, in my opinion, be inevitable.

2   The Current State of Scholarly Publication

Before examining the current state of scholarly publication, let us set some parameters for this discussion; specifically, I discuss why academics publish the results of their research.

Man, Weinkauf, Tsang and Sin (2004) examine scholars' motivations for scholarly publication. In their research, they identify three major existing findings on scholarly publications:

- Publications are the major output of scientific research (Rennie, Yank, & Emanuel, 1997).
- Publications are the most commonly used vehicles through which new scientific discoveries are conveyed to the rest of the world (Nelkin, 1998).
- Publications are also the principal currency for academic recognition and promotion for researchers in most Westernized countries (Rennie et al,.,1997)

Cullen and Chawner (2011) summarize the above findings as performing four key functions:

- Registration: identifying the "owner" of the intellectual property
- Certification: establishing the quality of the research
- Awareness: making the research available to others, and
- Archiving: long-term preservation to make the results available to future researchers.

These are interesting points, not just in themselves, but because of the times that they were promulgated. Man et al. (2004) were citing definitions that came three to four years after people began using Web browsers. The publication in which they were cited was published one year after 2003, the year

considered to mark the emergence of Web 2.0 and the significant advances in communication possibilities and directions it heralded. If we assume a year for the peer-reviewing process and for the paper to move up the queue for publication at their respective journals, then the date of publication is even closer to the genesis of those new publication forms.

Cullen and Chawner (2011) came much later, but their principles are similar and they are technology neutral. That last point is significant as Cullen and Chawner (2011) write about the impact of institutional repositories on scholarly publishing.

We can accept as self-evident that hardcopy journal publications were the major output of scientific research in 2004 when this finding was made, even though a survey of Israeli academics in 2003 showed over 75 percent preferred electronic sources rather than paper (Bar-Ilan, Peritz, & Wolman 2003). More recent research has identified researchers' uptake of social media. Bar-Ilan et al. (2012) examined researchers' involvement in social media and "found Web presence widespread and diverse: 84% of scholars had homepages, 70% were on LinkedIn, 23% had public Google Scholar profiles, and 16% were on Twitter". While they based these findings on a sample at the *International Conference on Science and Technology Indicators* (Priem, Piwowar, & Hemminger, 2012), researchers' uptake of social media has certainly grown since 2012.

Online publication has enhanced paper publications, including producing papers that incorporate text, audio formats, and interactive media (Anderson & McConkey, 2010). A 2012 survey of publications found that the online Mendeley system had a high degree of coverage of those publications and a significant correlation to one respected measure:

> *For sampled scholars' publications, social reference manager bookmarks were compared to Scopus and Web of Science citations; we found that Mendeley covers more than 80% of sampled articles, and that Mendeley bookmarks are significantly correlated (r=.45) to Scopus citation counts. (Bar-Ilan et al., 2012)*

If we consider monographs, Zhang and Kudva (2014), in examining readers' choices, conclude that e-books are not yet positioned to replace print books.

To summarize, using Cullen and Chawner's words (2011, p. 469), academics seem to be "operating productively within the existing methods of scholarly communication, while making use of subject repositories, and other channels to connect with their disciplinary community in ways that appear to satisfy their needs".

3   Restructuring the Scholarly Publishing Model

If we examine Cullen and Chawner's (2011) criteria, electronic publication satisfies the criteria of registration, awareness, and archiving, but not certification. Note that they examine the use of institutional repositories, but, for many on-line journals, the issue of archiving can not be said to be satisfied.

The archiving issues are twofold:

- The lack of stable URLs for identifying and accessing papers, and
- The abandonment of journals' operation.

Several mechanisms exist that provide some assurance of the permanence of stable access to online journals papers. Probably the best example is the DOI service (Crossref, 2014). This service provides a base URL and pattern with which they resolve the final target URL. For example, the DOI URL that references Gable (2006) is http://dx.doi.org/10.3127/ajis.v14i1.10 and resolves to http://dl.acs.org.au/index.php/ajis/article/view/10.

Even if a journal moves hosts or changes to or amalgamates with another journal, its papers' DOI links will remain stable as long as the journal updates the DOI database. Abandoning a journal's operation is a source for greater concern. In all likelihood, the owners will also abandon its website and paper storage. If that happens, the stability of the DOI link is irrelevant.

The issue of certification is not insoluble. Over the years, we have become used to double-blind peer reviewing as the gold standard of reviewing and ensuring high-quality papers. Unfortunately, there is increasing evidence that this is not always the case. Clarke, Hopewell and Chalmers (2007) found

numerous issues with the quality of reviewing, such as some trials that claimed to be the first in the field where they were not, either because the authors did not know that previous work had been done or because they did not wish to acknowledge it. Either way, that is a basic error that peer reviewing should have identified.

There are also other models for reviewing papers:

- Signed review
- Disclosed review
- Editor-mediated review
- Transparent review
- Crowd-sourced review
- Pre-publication review
- Synchronous review
- Post-publication review.

Some of these, such as post-publication reviewing, would be ideal for online publication. The Libre Project (Perakakis, 2013) uses post-publication reviewing and assigns a DOI to all reviews, which can then be cited in the same way as the primary paper being commented on.

The changes that are being introduced in some academic journals extend beyond technicalities of information management and peer reviewing. Indeed, several experiments with different online features are being explored in different journals.

For instance, the *Journal of Humanitarian Engineering* (Engineers Without Borders, 2012), which is targeted at developing countries, provides several value-adding measures:

- Plain language statements on each paper in multiple languages
- Simple Web-based versions of papers designed for low-bandwidth download on mobile devices
- Submit at any time and immediate publication on acceptance
- Photographs are encouraged, and
- Print on demand where online access is not available.

Volunteers (mostly native speakers from target countries) translate the plain language statements. The aim of these enhancements is to improve accessibility. Printed copies can also be produced in large format for the visually impaired. The strategy behind the plain language statements and low-bandwidth formats is to allow anyone reading the plain language statement to at least identify if the paper contains information that might be useful. At a later date, they could hence refer to someone able to read the full paper.

The move to plain writing is also encouraged by changes to research impact's definition. Two areas in the Australian Federal Government has issued policy and discussion papers (Australian Research Council, 2013; Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education, 2013) that extend the research impact concept significantly:

- Internal measures
  - Publication impact on the discipline (citations, altmetrics, etc).
- External measures
  - Impact on disciplines outside the author's discipline.
  - Impact on practitioners in the author's discipline.
  - Impact on society more generally.

Writing research papers in more straightforward language and discarding the archaic forms of language that are common in scholarly writing will also increase accessibility and widen access. This will be essential when such wider definitions advance beyond discussion papers. Helen Sword (2012, p. 3) has written an excellent book on this and issued a clarion call for better more readable scholarly writing:

> *There is a massive gap between what most readers consider to be good writing and what academics typically produce and publish. I'm not talking about the kinds of formal strictures necessarily imposed by journal editors— article length, citation style, and the like— but about a deeper, duller kind of disciplinary monotony, a compulsive proclivity for discursive obscurantism and circumambulatory diction (translation: an addiction to big words and soggy syntax).*

It will be interesting to see if the call for this form of improvement in scholarly language becomes a popular movement in academia and how academics respond to it. If academics are unable to make this change, we may see the emergence of a new occupation, the "science writer", which was forecast many years ago in one of Isaac Asimov's science fiction publications, The Dead Past (Asimov, 1956).

4   Conclusions

Researchers are generally held to have a low awareness of publishing issues and open access opportunities and are confused over copyright issues. Researchers are more concerned with the quality and prestige of the journals in which they publish (Reinsfelder 2012).

Improving academics' awareness on these issues has been flagged as essential: "Education is paramount; it is more important to prepare faculty to navigate the dynamic open access publishing environment than to attempt to create authoritative lists of ethical or unethical journals" (Beaubien & Eckard, 2014).

In essence, the sky is not falling. Yes, there will be change in the way academic results are communicated. Yes, some of these changes will be detrimental, but they will be outweighed by the positive ones. At the end of the day, funders of the research process will want to maximize the return on their investments in the research process. That applies just as much to government-funded research as it does to private or philanthropic support. We have no reason to expect that academia, alone out of all other fields of human activity, should be exempt from this driving force.

Publishers are also uncertain of the future and are responding by increasing subscription charges and imposing increasingly complex conditions on how content can be purchased and used (Reinsfelder, 2012). Publishers are also using the mechanism of the "big deal" packages, where a large number of products are bundled, which will potentially lead to an oligopoly of publishers controlling distribution through large-scale licensing (Odlyzko 2013). Multiple distribution licenses can lead to a library having multiple subscriptions to publications due to overlap between different "big deal" packages.

Administrators operate in an environment where prestige is a major consideration and where change comes slowly. (Reinsfelder 2012). In Australia, this is compounded by the prescriptive attitude of the federal government through the Excellence in Research for Australia program. This whole issue is also impacted by funding authorities' movies, and by the government generally, to have researchers more significantly justify the funds they receive in terms of the benefits their research will provide, and this is to be measured with a much wider definition of "research impact".

Like most of the activities in which we participate, the transformation of scholarly publishing is being enabled by the new possibilities that are being delivered out of the information systems innovations that many of us have had a direct role in researching and developing. We should be embracing these changes as vindicating the possibilities we have engendered.

I regard illuminated manuscripts as beautiful even though I never worked on them. It must have been an unremitting labor to produce them. I am saddened at the passing of letterpress printing, of gravure printing, and even of offset printing despite the toll that took on my back and skin. The number of people who could appreciate a perfect impression on fine cream wove and laid paper is sadly diminished. But I can't wait to see where we go next. I edit the Australasian Journal on Information Systems and am implementing several changes to contemporize and update the journal. Are they the right changes? Will the journal survive? The only thing I am sure of is that it will not survive if it fails to change. Arguably, its authors who also fail to change will suffer a similar fate.

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John Lamp is a one-time printer and now a Senior Lecturer in the School of Information and Business Analytics at Deakin University in Australia. His research interests focus on how people perceive and categorize information. He developed and has been running the *Index of Information Systems Journals* since 1995. From 2008 he has been actively involved with the Australian Government's "Excellence in Research" initiative in the area of journal ranking on behalf of the Australian Council of Professors and Heads of Information Systems. He is a member of the Australian Open Access Support Group and this, combined with his printing background, has increased his interest in the current transition from hardcopy publication. Since 2013, he has been Editor-in-Chief of the *Australasian Journal of Information Systems*, which is both open access and electronically published.