

New Gateways to Scholarly Communication through Open Access

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Abstract

The dramatic changes in 21st century has been occurred in the world of publication of scholarly communication. One of the phenomena is of Open Access Publishing Model. The open access movement is increasingly guiding the publishing practices of scholarly research. This paper will look at developments in the open access movement, how open access affects scholarly communication, and what eventual role librarians will play in its progress.

1. Introduction

Publishing now takes place through blogs, social networks, and social media sites. Included in this evolution is the way we think about scholarly communication. The open access movement is increasingly guiding the publishing practices of scholarly research. Publishing can now be an immediate process accessible by anyone in the world with an internet connection. This information has been made free not only to read but also to sample and remix, to create something new without fear of reprisal. New forms of scholarly communication are beginning to impact the way the publishing industry operates, a trend which may have lasting effects. This paper will look at developments in the open access movement, how open access affects scholarly communication, and what eventual role librarians will play in its progress.

The road to open access

In addition to the practical reality of increased costs, there are intangible factors that influence circumstances, giving rise to the argument for open access. Basic philosophical differences underlying the missions of libraries and publishers may account for part of the dichotomy. Libraries have always advocated the free sharing of information. Whether through print or digital format, libraries view the widest possible distribution of information as enhancing creativity and innovation. Publishers' livelihood, on the other hand, comes from the sale of information. Profit margins are important in advancing the business model and tend to increase with broader proprietary rights. Restrictive copyright laws and licensing practices have prompted academic libraries to look to the collaborative spirit of the internet, and open access publishing in particular, to gain back some control.

Open Source Softwares

With the advent of the internet came a global sharing of ideas. The Open Source Movement came about when those working on software projects were easily able to communicate and share important code online. A variety of innovative improvements were made to the code, stretching its use in ways that no one person alone could have foreseen. It was in this spirit of competitive teamwork that advances to open source software increased. To ensure that the code remained free for all, licenses like the GNU General Public License were created (GNU, 2008). These licenses, also known as copyleft licenses, stipulated that although the developer could use the code to make derivative works, they must apply the same type of license to their own design so the next person would have the same privilege of use. Open source software was, and is, successful, in both the commercial and non-commercial realms, and continues to proliferate. The larger concept of freely sharing ideas and materials has taken hold in other ways as well. Many in the education world wanted to extend the use of their learning materials to others. But aside from the GNU General Public License, which was originally created for software, authors had only the basic copyright laws for their protection. For many the copyright laws were too restrictive. The choice was either to maintain all rights or waive all rights by placing their work in the public domain. Encouraged by the GNU license, Creative Commons (CC) (with their signature takeoff phrase “Some rights reserved”) began to offer licenses that could be matched appropriately to the author’s needs. These licenses provide optional combinations of attribution, non-commercial use, or the copyleft requirement called Share Alike (Creative Commons, 2007). Although there is disagreement about the compatibility of CC licenses, they have become widely accepted in a short time. Eric Steuer, writing on the Creative Commons blog page, reports that since Creative Commons’ inception in 2001 until June of 2008, over 130 million such licenses had been adopted. The licenses can be used for anything that would fall under the normal copyright laws and could include such things as lesson plans, blogs, photos and other images, recordings and videos. Creative Commons licenses help pave the way for Open Access venues.

3. Golden Road to Journals

Open access publishing has evolved in two separate directions. Self-archiving in institutional and disciplinary repositories is known as the “green” method while the “gold” version of OA publishing refers to the distribution of open access articles in online journals. The journals, freely accessible on the internet, can be “read, downloaded, copied, distributed, printed, searched, or linked to, crawled to index, or used for any other lawful purpose” (BOAI, 2008). Authors have the right to be credited and cited for their work. Two examples of “gold” publications are The Public Library of Science (PloS) and BioMed Central (BMC). PLoS is a nonprofit open access publisher publishing seven peer-reviewed journals in the areas of science and medicine. Articles are immediately published along with tools to compute impact advantage rates. In addition, PLoS offers Web 2.0 means for community dialoging (PLoS, n.d.). BioMed Central, on the other

hand, is a for-profit open access company which publishes 195 peer-reviewed journals. It offers additional products and services which can only be accessed through a subscription fee. Another supporter of the “gold” model includes the Directory of Open Access Journals (DOAJ) hosted by Lund University Libraries in Sweden. An aggregate of peer reviewed scholarly articles, the DOAJ boasts a listing of over 3700 journals and almost 22,000 articles (DOAJ, 2008). In April 2008, the Scholarly Publishing and Academic Resources Coalition (SPARC) in Europe announced a new program to reward journals using Creative Commons By (CC-BY) licenses with the “SPARC Europe Seal for Open Access.” The seal was created in hopes to ensure proper copyright statements are being used. A second requirement for earning the seal is to make journal metadata available to the DOAJ in order to assure its OAI compliance.

This seal serves not only to provide validation of journals that receive it, but also to bring about more visibility through standardized metadata harvesting (Peek, 2008). In the past, the “gold” model has been viewed as less viable with the issue of sustainability playing a large role. The distribution process for OA publishing is far less costly than for traditional subscription models, made possible by the use of affordable open source software, the elimination of subscription tracking and authentication, and dedicated volunteers performing peer reviewing and editing. The Budapest Open Access Initiative (2008) finds that the average cost per article in traditional print publishing is about \$4,000 whereas the cost of an open access article is about \$400. Open access journals do not charge the reader or the producer (BOAI, 2008). So where do the needed resources for sustainability come from? Government and foundations may fund journals or for-profit publishers offering value added products or services. New pricing models for open access journals however, are increasing as the impact of open access publishing is realized. “Author pays” models, that charge the author for each article published, are becoming more prevalent. These fees can be passed on to the research institution or organization while prepaid membership fees act as a debit card offsetting article processing fees (Oppenheim, 2008). Oxford Journals, a division of Oxford University Press, now offer what they call “hybrid” open access (Oxford Journals, n.d.).

This provides the authors of accepted papers with the choice of paying the publishing fee up front for immediate inclusion in an open journal or to submit their article for standard publication. Journals will have a mixture of both open and standard published articles. Van Orsdel and Born (2008) point out that Oxford University Press has actually lowered their journal subscription prices two years in a row by using income from authors’ fees. Open access publishing is gaining recognition as demonstrated by the founding of a new association. The Open Access Scholarly Publishers Association (OASPA) launched on the first ever Open Access day in October, 2008, defines its mission as one of support and representation for the interests of open access journals. Membership is open to both scholarly and professional publishers who have demonstrated their concern for OA publishing by having signed either the Berlin or Budapest Initiatives. In addition they must publish at least one full OA journal. Founding members include, BioMed Central (recently attained by Springer) PloS, SAGE, SPARC, and a list of others (EurekAlert!, 2008).

4.Green Road to Repositories

Further changes are taking effect as the “green” branch of Open Access publishing continues to grow. Self- archiving in both institutional and disciplinary repositories has become increasingly acceptable. Disciplinary archiving, focused on subject- dependant articles, became attractive as researchers in the sciences sought to disseminate their findings in a more immediate manner than traditional publishing could provide (Ginsparg, 2001). One of the earliest and most successful disciplinary repositories is arXiv. Funded by Cornell University, it was created at the Los Alamos National Laboratory, New Mexico in 1991 before the advent of the Internet. Originally designed by and for scientists, the repository as of October 3, 2008, held more than 510 thousand entries in six subjects that include: physics, mathematics, nonlinear sciences, computer science, quantitative biology, and statistics. The site supports the Open Source Initiative (OAI) providing metadata for all its articles as well as providing support for RSS feeds and social bookmarking.

As disciplinary repositories in the sciences began to expand, those in the social sciences trailed in both their establishment and submission rates (Xia, 2007b). One exception to this trend was RePEc (Research Papers in Economics) a well- received economics database managed by volunteers in 63 countries. As with the scientists who constructed arXiv, economists, too, wanted to attain information quickly. The RePEc database was created so scholars could selfarchive their works over the internet for the fastest distribution. Now drawing from over 40 participating educational institutions and publishers, including proprietary publishers such as Elsevier, Wiley Blackwell, and Springer, the repository holds over 650,000 items, 545,000 of which can be accessed online in full- text. In addition to housing journal articles, the holdings are comprised of working papers, software components, book and chapter listings, institutional listings, and author contact and publication listings (RePEc, 2008).

Other notable repositories in the social sciences are in the field of library and information sciences. Close to a dozen such repositories have sprung up with varying degrees of apparent sustainability (Xia, 2007b). Their number indicates the explicit endorsement libraries assign to open access repositories. Established in 2003 E- LIS (E- prints in Library and Information Science) is an international resource with information about the repository published in six languages including English. E- LIS is non- commercial and like other repositories relies on volunteers for its operation and support. A wide array of document types pertaining to LIS is accepted. These include journal articles, working papers, preprints, theses, book chapters, conference proceedings, and more. The archiving method is fairly intuitive and submissions, written in any language, can be made either online or by E- mail. They will be checked by one of three editors in a given country to ensure they are relevant to the field and are finished in form. Editors may then accept, refuse, or return submissions for modification. The repository currently boasts 8593 documents. (E- LIS, 2008). As the open access movement continues to thrive, it is expected that submissions to disciplinary repositories will increase, as will the creation of and deposits in institutional repositories.

In an effort to reclaim some control over library budgets and offer alternate publication means for faculty communications, universities began to advance the use of institutional repositories (IR). In addition to disseminating information, scholarly repositories serve as a way to market the institution by showcasing its intellectual output. Often built with open source software, the IR is able to store digital copies of peer reviewed faculty publications as well as other institutional data. The ability to aggregate materials in one place replaces old disjointed models of individual or departmental websites which are often incomplete and out- of- date (Swan, A. and Carr, L., 2008). Experiencing a renewed support among universities IRs have met with some resistance in the past.

One major concern in using IRs is the matter of interoperability. How can articles located in any one repository be easily located and used by any one researcher, wherever that researcher is located? In 1999, the Open Access Initiative (OAI) was established to address such issues. As an organization, the OAI is committed to the development and promotion of standards that enable interoperability across a wide range of digital environments. Such standards like the OAI Protocol for Metadata Harvesting (OAI- PMH) enable cross- archive searching and access of registered repository records. Extensible Markup Language (XML) is used to describe document metadata which can then be read by third- party service provider harvesters, facilitating document retrieval (Yiotis, K., 2005). One such harvester, OAIster, is a “union catalog of digital sources” hosted at the University of Michigan. E- prints, Dspace, Fedora, and BEPress are just some examples of OAI compliant archives with over ten million items held (OAIster, 2008).

Another problem posed with IRs, is the reality that faculty often show a reluctance to post their works in these local repositories. While research notes this tendency may vary by discipline, several reasons appear to contribute to the obstacle. One such complaint is that faculty members are already overburdened with teaching duties and administrative obligations (Xia, 2007a). Lack of time to learn new systems and to add metadata to records, turns IR self publishing into a low priority. Concerns about copyright are also troublesome as faculty might not understand copyright laws (Oppenheim, 2008) especially as they pertain to their pre- print and post- print articles and .pdfs of fully published journal articles. In addition, faculty may feel that IR publishing holds no rewards as related to the retention, tenure, and promotion process.

Assuming a lower citation rate, and therefore lower research impact for IR publishing, they prefer to publish in the traditional manner, targeting journals of high prestige with a traditional peer reviewing process. Many of these worries can be alleviated by librarians. Librarians have recently adopted liaison programs forming closer partnerships with department faculty to personally assist them in their research, help with copyright questions, and inform them of library services and materials. Librarians can direct faculty to sites such as OpenDOAR (a directory of open access repositories) and the Scholarly Publishing and Academic Resources Coalition (SPARC) so they can learn more about OA repositories and their supporting communities.

Generally possessing a better understanding of metadata schemes, librarians can assume maintenance of the IR including preparing and performing uploads for faculty. Collaborating with teaching staff can create greater understanding between the library and the campus as a whole. Assuring faculty of the benefits of IR publishing, librarians can also point to research that confirms higher impact for OA journal articles over toll access articles (Norris, M., Oppenheim, C. and Rowland, F., 2008). Although reasons for greater research impact are unclear, findings clearly demonstrate citation advantage for open access articles. From sample searches of 4,633 articles using OAIster, OpenDOAR, Google, and Google Scholar, 49 percent had a mean citation of 9.4 while toll access articles had a mean citation rate of 5.76. Variation was uncovered among disciplines. Sociology demonstrated the highest citation ratings with the lowest amount of OA articles while ecology had the lowest citations ratings with the fewest OA articles. This article, in addition to previous findings, should indicate the advantage of using IR for self archiving.

5.Role of Librarians

Swan and Carr (2008) state that, “It will soon be rare for research based institutions not to have a digital repository.” But IRs may experience even wider success as smaller campuses realize their advantages. As open access practices advance the creation of these institutional repositories (which seems likely after the Harvard mandate) how will the role of the librarian change? Librarians have always been entrusted with keeping and preserving the human record. Until recently, they have been seen as passive gatekeepers of information. The internet, however, has changed this role and librarians are becoming active collaborators and creators of new knowledge. Repositories offer librarians an even more pronounced role central to the mission of the university.

As stated earlier, librarians have become library liaisons, initiating closer ties with department faculty. It is through these relationships with faculty that they can now assume the role of advocate for the open access movement. While faculty have been slow to embrace a move away from publishing in established journals, they can understand the ever increasing costs in purchasing licenses for online journals and the library’s subsequent budget constraints. As partners in the dissemination of knowledge, librarians will propose the implementation of IRs to house faculty’s open access peer- reviewed scholarly articles, as well as other types of educational and administrative resources. Librarians structure information in ways that facilitate its access. Adding OAI compliant metadata to records helps to ensure the information’s retrieval.

Librarians may insert controlled vocabulary (Novak and Pardo, 2007), construct thesauri, or add folk tagging mechanisms to the repository. While print materials make up the majority of items, librarians must support the dissemination of new formats of faculty expression. Staying informed of new technologies will be required to keep deposits viable. Librarians at QUT (Cochrane and Callan, 2007) noted two areas of IR publishing that elicited the faculty’s concerns. One was their skepticism about citation reference. Librarians can reassure them of the advantages of open access with tangible evidence of increased citation and download counts. Open access articles generally receive higher

counts and these can be recorded by embedding metrics into the repository. Metrics will provide a variety of statistical information for assessment purposes (Norris, Oppenheim, and Rowland, 2008). Another area of apprehension was copyright management.

Librarians, familiar with vendor licenses and copyright laws through interlibrary loan and e- reserves, are better equipped to administer licensing and in doing so will ease faculty's reticence. Classes for those wishing to learn more about these subjects or general information about the repository and depositing could be offered and taught by instructional librarians. Bringing awareness to the campus and larger community is vital for the acceptance and use of the IR. Conversations with faculty and administration should include ways to publicize IR efforts. Course management systems like Blackboard, Web CT and Angel could have embedded links, not only to the library's catalog but also to the repository. Information literacy instruction could include how to search online repositories and open access journals in the same manner that they currently instruct searching in commercial databases.

Positive experiences and success stories should be publicized. Librarians excel in creating interesting add- on materials. Complementary bibliographies, webliographies, or images could be linked to deposit sites. Articles featuring faculty, their research, and classes could be offered as supplements. In addition to advocating for implementation of IRs, eventually more libraries may offer to pay author submission fees for open access journals as has recently been approved in Canada (Morrison, H. and Waller, A., 2008). In September 2008, the University of Calgary instituted the "University of Calgary Open Access Authors Fund." The \$100,000 annual fund will provide faculty and graduate students the means with which to pay submission fees for accepted articles headed for publication in open access journals. Calgary's Vice President for Research, Dr. Rose Goldstein expressed her pride, stating, "The Open Access movement is a significant initiative in bringing our research activity more quickly and broadly to the awareness of the scholarly community and to the public at large. The establishment of this fund by Libraries and Cultural Resources is a crucial development for our faculty and graduate students" (University of Calgary, 2008).

References

- 1.arXiv. (2008, November 17). arXiv.org. Retrieved November 29, 2008 from <http://arxiv.org/>
- 2.Budapest Open Access Initiative. (2008, October 25). Frequently Asked Questions. Retrieved October 30, 2008 from <http://www.earlham.edu/~peters/fos/boaifaq.htm#openaccess>
- 3.Cochrane, T. & Callan, P. (2007). Making a difference: Implementing the eprints mandate at QUT. *International Digital Library Perspectives*, 23, (3). 262- 268. Retrieved October 30, 2008 from QUT eprints repository <http://eprints.qut.edu.au/archive/00006916/>

4. Creative Commons. (2007, July 13). *About*. Retrieved October 26, 2008 from <http://wiki.creativecommons.org/History>
5. DOAJ (Directory of Open Source Journals). (2008). *About*. Retrieved November 29, 2008 from <http://www.doaj.org/doaj?func=home>
6. E- LIS. (2008, November 17). Welcome to E- LIS. *E- LIS E- prints in Library and Information Science*. Retrieved November 29, 2008 from <http://eprints.rclis.org/>
7. EurekaAlert! (2008, October 14). Announcing the launch of the Open Access Scholarly Publishers Association, OASPA. Retrieved October 20, 2008 from http://www.eurekaalert.org/pub_releases/2008- 10/spu- atl101408.php
8. Ginsparg, P. (2001). Creating a global knowledge network. *About arXiv: Some background blurb*. Retrieved November 29, 2008 from <http://arxiv.org/>
9. GNU Operating System. (2008). Licenses. Retrieved October 20, 2008 from <http://www.gnu.org/licenses/licenses.html#GPL>
10. Lewis, D. W. (2008). Library budgets, open access, and the future of scholarly communication: Transformations in academic publishing. *College & Research Libraries News*, 69, 271- 273. Retrieved October 30, 2008 from Library Literature & Information Full Text.
11. Morrison, H., & Waller, A. (2008). Open access and evolving scholarly communication: An overview of library advocacy and commitment, institutional repositories, and publishing in Canada. *College & Research Libraries News*, 69, 486- 90. Retrieved October 30, 2008 from Library Literature & Information Full Text.
12. National Institutes of Health Public Access. (2008, September 4). *Frequently asked questions*. Retrieved October 31, 2008 from <http://publicaccess.nih.gov/FAQ.htm#a1>
Open Access 14
13. Norris, M., Oppenheim, C. & Rowland, F. (2007). The citation advantage of open- access articles. *Journal of the American Society for Information Science and Technology*, 59, (12). 1963- 1972. Retrieved October 19, 2008 from Academic Search Premier database.
14. Novak, J. R. & Pardo, L. A. (2007). The evolving nature of faculty publications. *Legal Reference Services Quarterly*, 26, 209- 232. Retrieved October 19, 2008 from Library Literature & Information Full Text database.
15. Nguyen, T. (2008). Open doors and open minds: What faculty authors can do to ensure open access to their work through their institution. *SPARC/Science Commons*. Retrieved October 19, 2008 from <http://arl.org/sparc>

- 16.OAster. (2008). *What is OAster?* Retrieved October 31, 2008 from <http://www.oaister.org/about.html>
- 17.Oppenheim, C. (2008). Electronic scholarly publishing and open access. *Journal of Information Science*, 34, (4). 577- 590. Retrieved October 14, 2008 from www.sagepublications.com
- 18.Oxford Journals (n.d.) Open Oxford. *Oxford Journals*. Retrieved October 31, 2008 from <http://www.oxfordjournals.org/oxfordopen/>
- 19.Peek, R. (2008). Open access publishing/legal aspects. *InformationToday*, 25, (6), 19- 20.Retrieved October 19, 2008 from Library Literature & Information Full Text database.
- 20.Public Library of Science (PLOS). (n.d.). *Which is the right journal for my research?* Retrieved October 30, 2008 from <http://www.plos.org/journals/journals.php>
- 21.RePEc. (2008, November 24). RePEc (Research Papers in Economics). Retrieved November 29,2008 from <http://repec.org/#major>
- 22.Snyder, Chris. (2008, October 22). Will the economy kill “free” on the Internet? *Wired Blog Network, Epicenter*. Retrieved October 30, 2008 from <http://blog.wired.com/business/2008/10/will - the- econom.html>
- 23.Steuer, E. (2008, September 18). Creative Commons launches study of “noncommercial use.”
- 24.*Creative Commons*. Retrieved October 26, 2008 from <http://creativecommons.org/press- releases/entry/9554>
- 25.Swan, S. & Carr, L. (2008). Institutions, their repositories, and the Web. *Serials Review*, 34, 31- 35. Retrieved October 14, 2008 from Library Literature & Information Full Textdatabase.
- 26.University of Calgary. (2008, June 23). Access to new funds. Retrieved October 30, 2008 from <http://www.ucalgary.ca/news/june2008/authorsfund>
- 27.Van Orsdel, L. (2006). Journals in the Time of Google: While the Struggle over Open Access Plays Out, Librarians, Vendors, and Publishers Continue to Trade Within a Market Dominated by All Things Electronic. [Electronic version]. *Library Journal*, 131 (17), 39. Retrieved October 19, 2008 from Academic Search Premier database.
- 28.Van Orsdel, L., & Born, K. (2008). Periodicals Price Survey 2008: Embracing Openness. [Electronic version]. *Library Journal*, 13. Retrieved October 26, 2008 from <http://www.libraryjournal.com/article/CA6547086.html>