Framing the Scholarly Communication Lifecycle

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Framing the Scholarly Communication Cycle

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SCHOLARLY communication is evolving from a buzzword into a discipline. Before exploring the intricacies of open access, institutional repositories, license infringement, journal pricing, and authors’ intellectual property rights, I’ll take a breath and begin to frame what I mean by “scholarly communication.”

The scholar’s world interconnects research gathering, formulating ideas, and writing—with help from librarians, publishers, and colleagues. I would argue that scholarly communication follows a cycle. Between the steps in the cycle are issues that influence each segment of the cycle.

Although any starting point in the cycle will work, this discussion will start with Research, defined as work done by scholars for promotion, teaching, professional development, or social good. Most scholars are faculty members who are testing ideas, developing chemical compounds, exploring policy statements, or possibly writing poetry. This process is dependent upon access to information. It results in the use of search and discovery tools.

As the research continues, the idea Develops. It is presented at conferences and in working papers, is sent around to colleagues, or pops up in blogs. Additional authors may be added or dropped at this stage. Authors search for previous work and/or browse journals and other sources to be inspired by new discoveries. They formulate their intellectual properties with each completed experiment, survey, or sonnet.

The next step is putting fingers to keyboard and Writing the manuscript. This is done by scholars when they are ready to submit their works to a print or electronic publication. At this stage, they have complete control over their intellectual properties. All their sweat and hard work in the creation of their articles or books becomes a commodity called copyright, which has an economic value and can be traded.

THE PUBLISHER FRAME

A Publisher takes or buys that copyrighted material—a new procedure to detect arthritis, a case study on negotiating a deal, an artistic photograph—and distributes it to the world. Commercial and nonprofit publishers traditionally provide the services and production necessary to distribute books and journals in print or over the Internet. This production includes managing the peer-review process and the resubmissions by the original authors, as well as editing the work and coordinating all the logistics of the operations.

Publishers produce Resources such as journals, books, Web sites, and other methods of documenting scholarly communication. This resource is the finished product on
which authors develop their reputations. It becomes a record in their fields of study, available for others to build upon. Publishers, jobbers, and aggregators distribute these resources.

The resources are destined for Collections. The most obvious examples of collections are libraries, but there are also commercial databases, institutional repositories, personal collections of scholars, and other places that hold knowledge. Libraries collect from distributors and act as points of access for scholars doing research. Traditionally, access has included interlibrary loan services as well as other ways in which the fair use doctrine has helped the scholarly community.

DIFFERENT STROKES FOR DIFFERENT TIMES

This cycle worked well in the halcyon days, when disciplines were relatively stable. Printed journals and books were the primary media of scholarly communication, and the library was the best place to find what one wanted. Today, however, there are pressures that are distorting the rhythm of the cycle. According to Library Journal, ISI journal prices have, on average, increased by 39.63 percent between 2001 and 2005, while overall national inflation, as defined by the CPI, has risen only 10.29 percent over the same time period. This has resulted in fewer titles being purchased even where budgets have increased to keep up with normal inflation.

Powerful commercial entertainment interests are working to influence national copyright laws, resulting in diminishing fair use access. Increasingly, commercial publishers see intellectual property as a commodity. They have created tighter restrictions, affecting the flow of scholarship, which result in publishers punishing authors for posting on the authors' own Web sites. In response, the same scholars have created institutional repositories and other new alternative publishing avenues for the dissemination of scholarly information. An example of this is the development of open access journals (OAJs).

There is an alphabet soup of organizations grappling with problems and solutions in the field of scholarly communication. What I propose is a simple model to frame the discussion and show how everything is interconnected. As an example, I will review some issues relating to open access journals and how they fit within the Scholarly Communication Cycle.

OPEN ACCESS JOURNALS

The world of scholarly communication includes many examples of journals with atrociously high annual subscription rates: Journal of Chromatography ($13,674), Journal of Magnetic and Magnetic Materials ($8,253), and European Journal of Operational Research ($5,034). There are some journals that make more than a 40 percent profit for their predatory publishers, but most publishers make about a 5 percent profit. The publishers need this money to support the logistics of preparing articles for print and electronic publishing. Commercial publishers sometimes pay experts to review submissions and are developing systems to speed the production of journals, sometimes with the help from companies such as EBSCO Publishing [www.epnet.com] and Allen Press [www.allenpress.com]. They also are using their profits for mergers, acquisitions, and new journal title introductions.

Some of these activities result in über-titles with high impact factors that have to be bought at any cost or in more titles that fill smaller and smaller niches in fractured disciplines. More journals means more money spent. Leaders in the open access journal movement are asking noncommercial journals to fill the smaller niche markets without over-inflating the price of access. Noncommercial publishers, such as those affiliated with associations, universities, or societies, are motivated by a need to distribute research because they view the information in the journal as a common good. They use their journal profits to support conferences, fellowships, scholarships, and operating costs. Nevertheless, some nonprofit organizations have outsourced their publishing logistics to the commercial publishers and don't even know if their publishers are predatory or reasonable.

THE SCHOLARS' CHOICE

Since the power is in the hands of those who control the content, scholars can try to make a difference by choosing where to publish their works. The Scholarly Publishing and Academic Resources Coalition, SPARC [www.sparc.org], has published "crisis documents" that state, "Scholars are losing control of the scholarly communication system." One solution SPARC suggests is to create more open access journals. These journals support different business models than the traditional print journals and operate only on the Web. Because the cost of production falls upon the authors, researchers can have free access through search engines on the Web, such as Google Scholar. Copyright remains with the authors, who can either keep it, transfer it to publishers, or use some Creative Commons license agreements to allow others to use the work. Peer review is still in the hands of the
publishers; however, other models of assessing the validity of the work are more likely to come out of open access journals than commercial publishers.

Open access journals [OAJ] are a fine example of how scholarly communication has changed with the advent of the Internet and escalating journal subscription prices. However, it is erroneous to claim that scholars have total freedom to choose publication in an open access journal over a traditional print journal. For instance, a scholar's tenure may depend on whether he or she is published in a top-tier journal such as Surface Science, which has an impact factor of 21.35 but charges $13,708.52 for an annual subscription. How can we put all these issues together? The Scholarly Communication Cycle is an easy way to understand the complexity of open access journals.

OPEN ACCESS PRODUCTION MODEL

The most obvious issue that the OAJ model solves is the cost of the journal, which falls squarely in Production. Production falls between Publishers and Resources. For-profit and nonprofit publishers have expertise in print and electronic publishing logistics. This is where most of the cost is expended in producing the resource and where the publishers start the peer-review/editorial-review process. Authors, institutions, or granting agencies would pay to have the work published, rather than subscriptions paying for the resources needed to fund the effort. This is not the same as a vanity press because OAJs also have a stringent peer-review process.

One benefit of OAJs is that they are free from traditional fee-based dissemination models, such as ScienceDirect from Elsevier, or from aggregators like ProQuest's ABI/INFORM. Dissemination models would fall within Distribution, which lies between Resources and Collections. All scholars want a way to maximize access to their research. Distribution is a business arrangement between the publisher and collector, where prices are negotiated. Traditionally, it is the only point where the scholar is not directly involved. However, for open access journals or institutional repositories, authors can have some control over the release of their research. Copyright laws also play their biggest role in the distribution of information. OAJs choose to be less restrictive and more open, because their funding derives from authors and not subscriptions.

The only prerequisite for Access to OAJs is access to the Internet. Access is between Collections and Research. There are issues when scholars try to get to information kept in collections. Sometimes these issues are directly related to the distribution of a resource or the operation of the collections. Archiving is also a component of access. That is why the archiving service Portico was created to preserve Web-based journals, including those in open access.

SEARCH AND DISCOVERY

OAJs also influence how information is found using Search and Discovery Tools. Search and discovery tools come into play between Research and Development of ideas. To a scholar, the process of idea generation may include use of discovery tools, such as browsing journals, listening to presentations at conferences, talking to colleagues, or reviewing the literature of the field. Search tools are based on entering keywords into the search string of an alert service, an RSS feed, Google Scholar, Yahoo, or another Web search engine. This is where the role of communications and media matters. A principal distinction between OAJ and print journals is that OAJs are accessed primarily by directed searches rather than by traditional browsing.

Since OAJ are Web-based and not restricted by physical printing, they offer more opportunities for scholars to distribute their Intellectual Property Rights (IPR). These fall between Development of the idea and Writing it down to be sold or given away. Intellectual property consists of the research notes, experiments, surveys, data, literature reviews, interviews, or anything else that is used to create a finished product that is ready for submission. Every country has its own laws or policies governing IPR. For example, in the U.S. some scholars' works are the property of the institutions for which they work, while in Europe the scholars own their IPRs. Once intellectual property is distributed, this becomes a copyright issue.

COPYRIGHT AS COMMODITY

OAJs also use a different interpretation of Copyright. Copyright is between the completion of a scholar's product and the negotiation with the publishers. It is a commodity that can be sold or given away. Because copyright laws protect the distribution and use of the copyrighted materials, if the scholar wants to use derivative works based on his or her material he or she will need to retain some rights in the agreement signed between the author and the publisher. OAJs turn these restrictions upside down because authors control their own works.

By using the Scholarly Communication Cycle as a framework, the complicated issues of open access journals can be discussed in context. The cycle allows researchers to see the interplay of issues among scholars, publishers, and other researchers.

This framework can be viewed in detail at http://digital.georgetown.edu/private/jb and is in Creative Commons with an Attribution NonCommercial ShareAlike 2.5 Deed. This is not a peer-reviewed article. However, I thank Ken Fishbein, Sandra Hussey, Mark Jacobs, and Joan Cheverie for their input. I chose to disclose the Scholarly Communication Cycle in a trade journal because of the speed of publication, wide readership, and print record it provides.