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## **Scholars and Libraries in a Radically Changed – and Changing – Publication Environment**

Working scholars face two basic problems when it comes to information access and distribution:

- **The access problem:** how to get the information they need in order to do their work;
- **The publication problem:** how to distribute the results of their work in ways that will maximally contribute to their disciplines while also enhancing their reputations and careers.

This paper will address several dramatic shifts in the information environment over the past 15 years that have changed the context in which scholars do their work and in which libraries support it, and will discuss some ways in which libraries may be able to make the current environment better for researchers, scholars and students.

The primary purpose of the research library has always been to solve the access problem. Traditionally, the library's role has been to anticipate the research needs of faculty and students, collect the resources that will meet those needs, organize them in such a way that they will be easy to find, and care for them in such a way that they will be available permanently. This oversimplified description of the library's activities hides a complex system of policies and practices designed to make maximum use of limited resources: because of space constraints, books must be removed from the collection as well as added; because of rising journal prices, subscriptions must be cancelled as well as initiated; because of limited budgets, some potentially useful and interesting book acquisitions must be foregone. All these activities, however, have a single purpose: to build a collection that is comprehensive enough to meet the needs of faculty and students within the constraints of space and budget.

In the current information environment, this particular library role is necessarily going to change dramatically, and in fact is already doing so. In the Gutenberg Era – when all or most information was distributed by means of ink on paper, and information distribution was therefore expensive, slow, and difficult – the only way for a library to meet its patrons' research needs was by anticipating them. A researcher who needed a book that the library did not own was not well served by the message "We will try to get it for you within the next four to six weeks." But during the print era, that was the best we could do; ordering a book generally meant sending a letter to a vendor and waiting for a response, and borrowing the book from another library involved essentially the same process. The only way to serve researchers well was by having the needed book in the collection before the researcher arrived. This was hugely problematic, because guessing what researchers will need before they know they need it is, to put it mildly, difficult. But we are no longer in the Gutenberg Era; today, virtually all formally published information is created electronically, and most of it is then distributed electronically – some to be printed later and bound into books or journal issues, but an increasing percentage of it to remain in the digital realm. This means information in all formats can be found much more readily and access to it obtained much more quickly and easily. This means, in turn, that our options for

meeting researchers' needs are much more open, and some of those options do not require the building of a just-in-case collection at all (though that is a subject for a different paper).

The library's role in solving the publication problem is less obvious. Traditionally, libraries have focused on bringing into the collection things that have already been published and have assisted faculty in the research process, but they have assumed little or no direct role in the process of actually getting things published. However, as we have left the Gutenberg Era and entered the Internet Era, one important impact of that shift has been the lowering of barriers to entry into the publication marketplace. Publishing online is by no means cost-free; however, the online environment does offer models that are substantially cheaper than those available in the print environment, and this means new publishing opportunities for tenure-seeking faculty, for students, and for just about everyone else as well.

It also means new opportunities for the library to make itself useful to faculty. Instead of acting only as a net that is thrown out into the ocean of previously-published information and gathers in the best and most relevant resources, the fact that most information is now born-digital means that libraries can also function in almost a reverse of that role, acting as a net that catches research results as they emanate from campus, retaining copies that can act as an archive, a showcase for the university's achievements, and a means of distributing the university's scholarship much more widely and effectively than traditional publications channels allow.

Why are traditional publication channels ineffective? Mainly because they are designed with the primary goal of generating revenue, not making access as broad and easy as possible. Some publishers sacrifice access for revenue more egregiously than others: one publicly-traded science publisher whose financial reports I studied recently has seen its profits increase by 150% since 2001, while the median per-page price of its journals has risen over the same period by roughly 18% (and per-title list price has risen by 56%). But even public-minded, nonprofit scholarly society publishers have to have an income stream. All traditional publishers, therefore, have a natural interest in restricting access to paying customers only. The more access is restricted, the fewer people can find and read our faculty's work.

Libraries have traditionally taken on the role of brokering researchers' access, making sure that students and faculty can read the journals they need to read in order to do their work, and in the past that arrangement has worked fairly well. Now, however, we face a significant problem: the price of journal access is skyrocketing, while higher education budgets are stagnating. While libraries in general (and those at the University of Utah in particular) are providing access to more scholarly information than ever before, the percentage of available information that we can provide is shrinking rapidly. Average journal price inflation across all disciplines runs from 8 to 10 percent annually, with scientific journal prices increasing even more rapidly. Few, if any, universities can afford to fund their libraries sufficiently to keep up with that kind of price pressure, so book budgets are reduced in order to keep the bleeding minimal in the journal collection, and journals and databases still have to be cut every year. Furthermore, while the digital environment makes it possible to search, manipulate, and data-mine enormous collections of raw data and published information, copyright restrictions in the online realm make that kind of research largely impossible.

Libraries have had little success in convincing publishers to lower their prices (or even to lower the rate of price increase), and are making only slow progress in exposing large amounts of proprietary data to deep searching and data mining. So many of us are exploring ways of offering alternatives to the traditional publishing model. One is the institutional repository (IR), which serves the reverse-net function mentioned above. The Marriott and Eccles Libraries have

collaborated to create an IR here at the University of Utah and have already begun working with faculty to fill it with copies of faculty publications.

The IR does a good job of meeting several university needs: keeping a record of faculty output, showcasing that output to the public, and making access to it widely available. However, the IR does not do a good job, by itself, of enhancing a faculty member's career or helping her earn tenure. The fact that a paper has been placed in an archive does not impress an RPT committee; what impresses an RPT committee is if the paper has been deemed worthy of publication by the faculty member's peers outside of the university. The clearest marker of such acceptance has always been formal publication in a traditional journal. But as the journal marketplace continues to consolidate and it becomes less and less possible for universities to subscribe to the journals they need, it is becoming clear that we need new and more sustainable ways of marking faculty progress and success.

One thing that can give us hope is the fact that so much of the work involved in publishing traditional journals is done by faculty members already – both authors and journal editors tend to be faculty members who are doing that work not for direct pay, but as part of their regular academic duties. This means that universities are already absorbing many of the costs of journal publication. Other costs have fallen as the journal-publishing world has left the Gutenberg Era behind: with very few exceptions, there is no reason why a new journal should have to exist in print at all, which means that printing and shipping costs can disappear entirely for those titles. Other publication costs do remain, however, and an increasing number of academic libraries are volunteering to redirect some of their budgets and staffing away from the purchase and management of commercial subscriptions and toward the support of in-house journal publication. Journals published in this way can be made freely available to the public, and thus have the potential to greatly increase the impact of the articles they contain – open-access journals are already proliferating under a variety of funding models, and initial impact data are extremely encouraging.

Obviously, a move in this direction would require some fairly significant changes in mindset. For one thing, we may need to broaden (without weakening) the publication criteria applied when considering tenure applications. We absolutely must not lower our standards – but a radically new information environment does call for at least a reassessment of how we recognize and mark high-quality research output. For another thing, even where more traditional publication practices are called for, we can encourage faculty to retain their copyrights wherever possible; the Scholarly Publishing & Academic Resources Coalition (SPARC) has provided a simple addendum that can be signed and turned in with any submission to a journal, reserving the author's copyright and allowing the author to deposit the article in an IR and otherwise distribute copies publicly on a non-commercial basis. Not all publishers will currently accept the SPARC addendum as a matter of course, but a growing number of publishers do. And there is a growing movement among universities to be more mindful of the rights that are routinely given away to publishers by their scholars. One result of that movement is the mandate recently passed by the Harvard faculty of Arts and Sciences (and later adopted by Harvard's law school as well), which requires faculty to retain their copyrights and make their articles publicly available. Waivers to the policy are available to any who ask for them – but what is significant about this arrangement is that it flips the default setting: where once the faculty routinely gave away copyright to outside publishers and retained it only in exceptional cases, at Harvard the opposite now holds true.

One more interesting area of opportunity for researchers and libraries alike lies in the realm of research data sets. Research conducted or documented in the digital realm tends to result in very large amounts of raw data, the curation of which has often been outside the library's purview. This traditional arrangement bears reexamination. Research libraries on many campuses are currently considering ways that they can act as data archives for faculty who don't have sufficient or reliable space in which to store the data they generate, and a number have already established such archives and are running them successfully – not only providing a safe and robust storage space for data sets, but also making the data available to other researchers on campus.

This brief presentation only scratches the surface of the possibilities that have opened up to us with the transition of the scholarly information world from a paper-based environment to a digital one. As librarians at the University of Utah, our goal is not only to continue providing you with all the resources you need to carry out your research and publish your work, but also to find new and better ways to help you achieve your scholarly and pedagogical goals. My hope is that you and your colleagues will help us think of more ways we can do that and help us create and implement services that will help move the University of Utah even more quickly towards its strategic goals.