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## **DEVELOPING NEW SKILLS AND EXPERTISE TO SUPPORT DIGITAL SCHOLARSHIP AND SCHOLARLY COMMUNICATION**

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### **ABSTRACT**

The growth of the Internet and digital technology has caused a dramatic and rapid change in scholarly communication practices, giving rise to new forms of digital scholarship and emerging scholarly publishing models. As libraries respond to—and help promote—these changes, they face a number of new challenges and opportunities. Libraries must develop new specialists with specific skills in digital content production and management. At the same time, they must develop a broad, general understanding, among staff across the entire organization, of how changes in scholarly communication practices affect the library enterprise as a whole. This paper discusses three new areas of activity for libraries supporting digital scholarship and scholarly communication: the development of institutional repositories, electronic publishing services, and scholarly communication outreach and advocacy. The paper will also suggest strategies for developing the capacity to support these activities.

### **LIBRARIES & SCHOLARLY COMMUNICATION**

The growth of the Internet and digital technology has caused a dramatic and rapid change in how scholarship is created and communicated. For academic libraries, responsible for preserving and providing access to the scholarly record, these changing scholarly communication practices are creating both new challenges and new opportunities. The challenges include the escalating costs of subscribing to scholarly journals; the explosion of new born-digital content and the corresponding need to manage, describe, and preserve it; and an intellectual property and copyright environment seemingly out of sync with the ways the scholarly community wants to use (and reuse) digital information.

At the same time, there are new opportunities to address these problems and transform the scholarly communication environment altogether. The emergence of the Open Access (OA) movement, for example, offers a model of scholarly communication that embraces technology's potential to make scholarship available worldwide by eliminating or reducing economic, technical and legal barriers to access. Developments in open source software make it easier than ever to publish and distribute scholarship online, and the development of standard metadata formats and search tools ensures that, once placed online, it

is easily found and used.

From their position at the crossroads of scholarly communication, academic libraries and librarians have been among the first in the higher education community to respond to—and promote—these changes. As they reassess their own roles in supporting the evolving needs and behaviors of their users, they are identifying opportunities to actively shape the scholarly communication environment and are undertaking a range of new initiatives. These initiatives include:

- creating institutional repositories to support the archiving and distribution of a wide range of scholarly and teaching materials produced by faculty at their institutions
- developing digital publishing services to support the design, management and distribution of online journals and monographs
- engaging in education, outreach and advocacy activities addressing scholarly communication issues.

These three areas of activity (by no means a complete list) are discussed briefly below.

### **Institutional Repositories**

Open-access repositories allow communities (such as disciplines or research institutions) to capture and preserve their intellectual output (published articles, unpublished preprints, working papers, conference presentations, data sets, teaching materials, multi-media objects, and other types of content). By using standard metadata formats and protocols, repositories allow their metadata to be crawled by general and specialized search engines and other web services, thus making their content discoverable on the web to anyone using those tools, without the user having to know in which particular repository the content resides. Repositories can either be discipline based (for example, arXiv.org or E-LIS) or institutionally based, and tend to follow a self-archiving model, in which authors themselves deposit their works. The Registry of Open Access Repositories (ROAR) currently lists over 1000 such repositories worldwide.<sup>1</sup> Research libraries are playing a leading role in the implementation of institutionally-based repositories by building the technical infrastructure, promoting the use of the repository service to faculty and researchers, developing policies regarding their use, and in some cases developing mediated services to help populate the repositories with content.

### **Libraries as publishers**

Another emerging area of activity for research libraries is scholarly publishing. A recent report issued by the Association of Research Libraries (ARL) concluded that “publishing services are rapidly becoming a norm for research libraries,” and that “the question is no longer whether libraries should offer publishing services, but what kinds of services libraries will offer.” In a survey of ARL libraries, 44% of

80 responding libraries reported they were delivering publishing services, and another 21% were planning to do so in the future.<sup>2</sup> These services tend to focus primarily (but not exclusively) on journal publishing, and generally offer a no-frills environment—emphasizing access and visibility, local control, and preservation—for hosting content and for supporting the peer-review and production activities of journal editors.

Although library-based publishing activity is just a tiny fraction of the larger scholarly publishing world, these activities fill an important need, providing support and visibility to new start-up electronic journals, or to departmental journals that may lack the staff and resources to move their print publications online. In addition, these programs are playing a useful advisory role to journal editors and publishers on campus who are trying to understand changes in scholarly publishing and the range of e-publishing options available to them.

### **Education & Advocacy**

Academic libraries are also playing an increasingly visible role in advising and educating the higher education community on scholarly communication issues in general. For example, libraries are engaging in discussions with faculty (in their roles as both instructors and authors) on matters such as copyright issues, author publication agreements, journal policies on self-archiving, and how to comply with new open access policies from the National Institutes of Health and other funding agencies. Libraries are maintaining up to date web sites tracking scholarly communication issues, and organizing seminars on copyright, digital scholarship and other topics. In addition to engaging the campus community in discussion and education, libraries are also actively advocating for change through governance and administrative channels. For example, the Harvard University Library played a leading role in shaping Harvard's recent open access policy, and other universities are exploring similar policies, with strong involvement from libraries. At a national level, librarians are advocating for issues such as open access to federally funded research, and revisions in copyright laws related to orphan works.

### **NEW ROLES FOR LIBRARIES**

The activities described above represent not just implementations of new technology to perform traditional tasks, but are also examples of two important expansions of the responsibilities of academic libraries.

- Libraries have traditionally acquired completed work in a published, static form to adding to their print or electronic collections. They are also now supporting and working directly with faculty and research units before and during the creation and pre-publication stage of research.
- Libraries have traditionally focused on acquiring externally produced work to make available to their local communities. In addition, they are now beginning to take more responsibility for providing stewardship over locally produced

scholarship and ensuring that it is accessible to an external, worldwide audience.

These activities are in many ways a natural fit for academic libraries. Because of their ability to leverage existing IT infrastructure and digital production expertise, their close relationships with faculty across all disciplines on campus, and their direct interest in scholarly communication activities, libraries are better situated than many other units on campus to take on these roles.

Nevertheless, these new roles come with a number of challenges for both individual librarians and library organizations. Staff members throughout the organization may be asked to take on new roles and responsibilities, and, as organizations, libraries must figure out how to structure and support these activities in a way that is sustainable. Libraries must develop new specialists with skills in areas such as digital content production, new metadata formats, software development and systems administration, project management, XML markup and other technical skills. At the same time, they must develop a broad, general understanding, among staff across the entire organization, of how changes in scholarly communication practices affect the library enterprise as a whole.

### **CHALLENGES**

One of the biggest challenges is that the scholarly communication environment is still evolving. These services are still new, and standard service models don't yet exist.

Although institutional repositories are widespread and growing, they have still not entirely "come into their own," as one study suggests.<sup>3</sup> There are different ideas among institutions and various constituencies about what is the primary role of an IR. Some see the preservation of scholarship as the primary purpose, others see IRs as an assessment instrument to evaluate the output of an institution, and still others see the primary purpose as increasing access and the impact of research. In fact, all these are valid roles for an IR, but having too many uses can lead to lack of clarity and confusion in developing clear service models and in articulating the role of the IR to administrators and the higher education community in general. While IRs are well-known in the library world, awareness of IRs among teaching and research faculty is lower, and faculty self-archiving, probably the most common model for populating repositories, has not been widely successful. There is a need to know more about successful IR implementations, and, indeed, a need to know what defines a "successful" IR and who judges that success.

Publishing services within academic libraries are even more embryonic. Not only are there no established service models, and widely differing administrative and organizational models, but, as the ARL report mentioned above notes, most library-based publishing activity is taking place in "a vacuum of community discussion." There is little documentation about successful implementations, and,

again, little idea of how one defines and measures “success.” In addition, while libraries are well suited to provide the hosting and dissemination aspects of publishing, there are other areas of traditional publishing where they don’t have real expertise or capacity, including peer-review, marketing, business models, printing and distribution. While there is clearly a role for libraries in scholarly publishing, the nature of that role is still not clearly defined,

The third role discussed above—understanding and promoting broad changes in scholarly communication practices—is not just an area for a select group of specialists, but requires a general, ongoing understanding, across the organization, of rapidly developing scholarly communication trends and their implications. Understanding and articulating the implications of scholarly communication change is difficult when the system is still in flux and the full long-term implications are not clear. Not everyone needs to be a specialist and know all the nuances, but even staying up-to-date on general trends is challenging for staff who are already busy trying to simply keep up with their own daily responsibilities.

## **STRATEGIES**

How do individuals and organizations as a whole develop the skills, expertise and capacity to support these activities in a sustainable way? A few general strategies are suggested below:

**Allow for pilot testing and a sandbox.** For institutional repository and electronic publishing services, pilot testing and room for experimentation is important. Pilot testing helps build the necessary technical expertise for IR or electronic publishing support, helps evaluate system software and workflows, and helps estimate costs and time frames.

**Use existing organizational structures to support these activities.** Scholarly communication publishing or advocacy activities can take advantage of infrastructure already in place. By leveraging existing resources and embedding new activities in pre-existing structures, rather than set apart on their own as experimental initiatives, these activities are set up to become core library activities rather than experimental initiatives set apart on their own that can be difficult to sustain.

**Develop new organizational structures.** Another strategy is to bring existing relevant activities in to a new structure that can provide more strategic planning and support. For example, the recently formed Scholar Services program at the University of Kansas brings together digital initiatives, electronic publishing, scholarly communication outreach, GIS & data services, the BudigOne digital workspace together into one program to leverage resources, facilitate planning and improve service quality. Similar programs have been created at other institutions, such as Rutgers University Libraries Scholarly Communications Center.

**Reexamine existing workflows and responsibilities.** Look for opportunities to involve staff from across the organization. For example, subject liaisons who are already engaged in outreach activities to faculty may be ideally situated to discuss scholarly communication issues and promote new services. E-reserves staff may be able, during the course of their work, to identify material that is suitable for placing in the institutional repository.

**Be inclusive.** Include a diverse range of specialists and departments within the organization in planning and supporting scholarly communication activities. This helps integrate these activities across the library, and helps build expertise, understanding and capacity across the organization. It also encourages communication, and helps spread the expertise rather than concentrating it in one area.

**Explore a variety of training options.** There are many possibilities to explore here. Suggestions include: create talking points handouts for library staff covering basic scholarly communication issues; develop informal mentoring and apprenticeships programs; provide in-house workshops and education sessions; utilize wikis, blogs and tools as training space for staff needing to develop or hone new skills; encourage the use of sabbaticals among tenured library faculty to use for professional development.

**Develop a network.** Tap into established communities of practice. It is critical for practitioners to know what is going on elsewhere with regard to service models, best practices, and new developments in technology. Subscribe to listservs addressing IRs and scholarly communication issues, and find websites and published articles with information or case studies about IR implementations and publishing services.

**Establish partnerships.** Seek out opportunities for planning and collaboration or planning with other centers of expertise and stakeholders on campus. For example, explore partnerships with university or commercial presses or archives and museums.

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<sup>1</sup> As of May 19, 2008 ROAR listed 1064 repositories in over 60 countries.

<<http://roar.eprints.org/>>

<sup>2</sup> Karla L. Hahn. *Research Library Publishing Services: New Options for University Publishing*. (Association of Research Libraries, April 2008). <<http://www.arl.org/bm~doc/research-library-publishing-services.pdf>>

<sup>3</sup> Karen Markey, Soo Young Rieh, Beth St. Jean, Jihyun Kim, and Elizabeth Yakel. *Census of Institutional Repositories in the United States: MIRACLE Project Research Findings* (Council on Library and Information Resources, February 2007).

<<http://clir.org/pubs/reports/pub140/contents.html>>