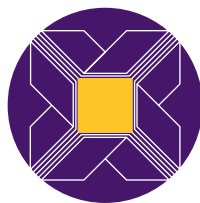# Research Library Publishing Services

New Options for University Publishing

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Contents

Executive Summary

To foster a deeper understanding of an emerging research library role as publishing service provider, in late 2007 the Association of Research Libraries surveyed its membership to gather data on the publishing services they were providing. Following the survey, publishing program managers at ten institutions participated in semi-structured interviews to delve more deeply into several aspects of service development: the sources and motivations for service launch, the range of publishing services, and relationships with partners.

The survey verified that research libraries are rapidly developing publishing services. By late 2007, 44% of the 80 responding ARL member libraries reported they were delivering publishing services and another 21% were in the process of planning publishing service development. Only 36% of responding institutions were not active in this arena.

These libraries are publishing many kinds of works, but the main focus is journals; 88% of publishing libraries reported publishing journals compared to 79% who publish conference papers and proceedings, and 71% who publish monographs. Established journal titles dominate this emerging publishing sector and are the main drivers of service development, although new titles are also being produced. Although the numbers of titles reported represent a very thin slice of the scholarly publishing pie, the survey respondents work with 265 titles: 131 are established titles, 81 are new titles, and 53 were under development at the time of the survey. On average, these libraries work with 7 or 8 titles with 6 currently available.

In the search for transformative approaches to scholarly publishing, research library publishing programs are intentionally exploring the boundaries of what several program managers conceptualize as a service core. The challenge is to provide the basic service suite by reallocating resources, partnering, seeking synergies with related services, and developing modest revenue streams. The aspirations of libraries to replicate traditional publishing services are modest to non-existent. Libraries are focusing on the capabilities and possibilities of new models rather than slavishly duplicating or simply automating traditional models. At the same time, they seek to identify the most promising new kinds of services that are needed to support authors and editors.

Peer reviewed works dominate library publishing programs and editors or acquisitions committees typically maintain their traditional roles in identifying quality content. Libraries often provide technical support for streamlined peer review workflows, but they are not providing peer review itself. The manuscript handling services provided by some publishing programs were a significant attraction to the editors of established publications.

Library publishing program managers report substantial demand for hosting services. Libraries increasingly are positioned to provide at least basic hosting services. Open source software such as the Public Knowledge Project's Open Journal Systems[1] and DPubs[2] along with new commercial services such as those offered by The Berkeley Electronic Press (bepress) through Digital Commons[3] allows libraries to support basic journal hosting relatively easily.

Advice and consulting regarding a variety of publishing practices and decisions are perhaps even more popular services. There are pressing demands for information and advice about issues such as moving print publications into electronic publishing, discontinuing print in favor of electronic alternatives, publishing works with limited revenue-generating capability, revenue generation, standards of various

sorts, markup and encoding, metadata generation, preservation, contracting with service providers, and copyright management.

Library publishing services have few pretensions to the production of elaborate publications and libraries pursue a different economics from those of traditional publishers. Libraries' products certainly resemble many publications produced by traditional publishers, but they are largely electronic-only and basic in their design. Limiting services to purely electronic publications offers some significant advantages over print-oriented publishing. Costs are kept low by simplifying production and design and relying on open-source software. Online full-text publishing enables discovery by a wide range of search engines and full-text searching, reducing the need for marketing. Workflows tend to be streamlined and almost all services are highly automated once production commences.

For many publications the goal is to keep publishing costs low enough to be managed as core library services. Start-up or set-up costs for journal publishing are generally substantially higher than ongoing publishing or dissemination costs. As with most scholarly publishing, much of the work of content recruitment and selection, and even some editing, is done by unpaid volunteers drawn from the ranks of active scholars and researchers. The largest costs lie in the startup process of advising, prototyping, creating workflows, and generating whatever layout and graphic design is considered adequate. However reduced, of course there are still real costs to providing basic publishing services.

Libraries are making large contributions of organizational resources to support publishing service programs, so it is not surprising that a substantial portion of library publishing uses business models that enable open access or work toward such a model to best leverage those institutional investments. Subsidizing locally managed open access publishing is an alternative to subsidizing subscription models with inherent access restrictions. Libraries are avoiding the substantial overhead involved in subscription-based business models and traditional print runs.

Two levels of business planning are evident in library publishing services: publication-level planning and program-level planning. Many libraries use a mixed model to manage the two types of investment, either subsidizing set-up but using other funding approaches for ongoing publishing or seeking special funds for start up and providing ongoing publishing support as a core library service.

The mechanisms for supporting a library's publishing program are diverse and usually diversified. Most respondents rely on at least two different sources of funding (a few used many more) and have plans to diversify their funding sources further in the future. Nonetheless, almost all library publishing services have a substantial foundation in library operational support. All of the respondents who currently utilize library budget funds anticipate continuing to rely on this funding. In addition to base budget and overhead support from the library, other sources of revenue include grants, charge backs to units or organizations, royalties and licensing fees, print on demand revenue, and other forms of sales of some kind. Partnering is a consistent strategy to diversify program support, and libraries report they often work with multiple partners. Publishing services are not usually treated as an isolated operating unit, the way a university press might be. They are typically embedded in an emerging program of related services — digital repository development, digitization programs, copyright management advising, etc.

Key Findings

Publishing services are rapidly becoming a norm for research libraries, particularly journal publishing services.

Service development is being driven by campus demand, largely from authors and editors. Scholars and researchers are taking their unmet needs to the library. They need not just publishing capacity, but expertise and advice on navigating the paradigm shift affecting publishing and scholarly communication.

Libraries are addressing gaps in traditional publishing systems. Libraries are not replicating traditional publishing; however, they are working with a mix of existing titles and new titles. They are frequently working with publishers and editors looking for the opportunity to translate their traditionally published titles to the emerging networked environment of information exchange.

Substantial investment in open source applications such as Open Journal Systems (OJS), Open Conference Systems (OCS), DPubs, and DSpace is facilitating service development. Investments in further development continue. For instance, the Synergies project funding includes a component for OJS development.

The numbers of titles research libraries are publishing represent a very thin slice of the scholarly publishing pie; yet, collectively research libraries are beginning to produce a substantial body of content. Publishing programs are consciously focusing on building scale within a defined body of core services.

Library publishing services are part of a range of new kinds of services libraries have developed or are developing. There appears to be no dominant sequence of service evolution, but publishing services are co-managed and often integrated with a range of new services such as digitization initiatives, digital humanities initiatives, digital repository deployment, development of learning objects, digital preservation activities.

Library publication services are developed in ways that are consonant with research library service culture. Partnerships with other campus entities are common.

The question is no longer whether libraries should offer publishing services, but what kinds of services libraries will offer. Consequently, leaders need to ask to what extent can the university benefit from investments in library publishing services, particularly in the context of related transformations in library services. While new investments are needed, there are both great demands for publishing services and significant benefits to be obtained from strategic investments.

Introduction

Dissemination of new knowledge lies at the heart of the research enterprise. While this is an accepted truth, the emerging capabilities of digital information and networks are calling into question nearly every established mechanism for scholarly communication, including scholarly publishing. The role of the research library in the publishing process is one issue in this category. There has long been a balance between publishers, researchers, and libraries in scholarly publishing, but all three are now reviewing their historic roles in the dissemination process.

The extent to which scholarly publishing is thriving or threatened is a topic of increasing importance for scholars and researchers as well as libraries and publishers. The recent report of the Modern Language Association Task Force on Evaluating Scholarship for Tenure and Promotion (MLA Task Force on Evaluating Scholarship for Tenure and Promotion, 2006) is just one of many indicators of the balance between opportunity for new kinds of transformational communication and publishing activities and concern for persistent problems in traditional scholarly publishing mechanisms. The report makes strong statements encouraging recognition of new kinds of scholarly works as valid scholarly contributions. The report also expresses a concomitant level of concern among many scholars about current scholarly monograph publishing and its ability to mediate assessments of scholarly contribution.

New practices for disseminating scholarship and new kinds of scholarly works are flourishing in many fields. From arXiv in physics to Zotero in the humanities, scholars themselves have been taking the lead in developing new solutions to overcome barriers that are legacies of the old print-limited publishing environment. The ACLS report, "Our Digital Cultural Heritage," articulates many of the opportunities for new kinds of publishing and dissemination (in addition to new kinds of scholarship) and lays out an agenda for investment. (American Council of Learned Societies Commission on Cyberinfrastructure for Humanities and Social Sciences, 2006) Publishing practices, perhaps never as homogeneous as nostalgaeists presume, are increasingly diverse as a host of technological advances led by the World Wide Web create more options and new demands. The opportunities and accomplishments of new model publishing will be considered in depth in a forthcoming ARL report.

Notwithstanding the compelling new possibilities offered by new model scholarly publishing and emerging dissemination systems, the ACLS report observes,

> At least three economies are at work in this system:
> 1. A prestige economy, primary for scholars and important but secondary for the other players;
> 2. A market economy, primary for publishers, usually not very important to scholars, and important but not primary for libraries;
> 3. A subsidy economy, primary for libraries, which are subsidized by universities, less available to publishers than it used to be, and more important to scholars than they generally know. It should be no surprise that a system that comprises three different economies is difficult to operate successfully. (p. 22)

While the market for scholarly publishing may not be a primary concern of scholars and researchers, problems in traditional publishing markets are beginning to impinge on their consciousness. Both the MLA report and the ACLS report paid particular attention to monographic publishing. Continuing in this vein, the Ithaka report, "University Publishing in a Digital Age," particularly highlighted the

problems facing monographic publishing by university presses and the urgent need to reconsider university support for this publishing sector. (Brown, 2007)

Journal publishing, too, is a source of concern in the sciences as well as the humanities. While large commercial publishers are growing their lists and providing substantial returns to their investors, smaller publishers, often scholarly societies, are facing growing challenges. Many small publishers struggle with declining subscription bases, particularly domestically. (Van Orsdel, 2007) and even research libraries report regular journal cancellation projects. (Hahn, 2006) Most of the journals that are lagging in the development of electronic formats are from publishers who print one or a handful of titles. As these struggle to find a way forward in an emerging digital age, they face difficult choices. Each year, large commercial publishers such as Wiley Blackwell announce they are contracting for swelling lists of society publications. (Orphan, 2006) A few not-for-profit collaborations such as BioOne[4] and Project Muse[5] offer an alternative route for some, but many small publishers are searching for a different path. (Crow, 2006)

The scholars and researchers who edit and author have their own perspectives. On campus, many researchers report that anything can be published, somewhere. (King, 2006) Yet at the same time, there are regular concerns expressed about whether adequate venues exist for new research areas, interdisciplinary areas, for negative results, or for small, resource-poor disciplines. (Candee, 2007) Some societies and editors are confronting situations where their publishing partner returns control of the journal unable to provide a business model that generates an adequate revenue stream. (Phillipp, 2007) Researchers and scholars who are involved with publications that are still produced only in print are increasingly aware that somehow a shift to electronic publishing must occur to ensure a future for their journal. Even where electronic versions exist, the transition to purely electronic publishing presents perplexing challenges. (Johnson, 2007)

As libraries actively reshape their organizations for the information environment of a digital age, to many of their users they appear to be natural providers of publishing services. Research libraries are providing new dissemination mechanisms for existing content through programs that digitize and redistribute previously published (or unpublished) works and participate in mass digitization projects of various sorts. At most research libraries, staff are engaging in outreach with faculty about a range of scholarly publishing issues. (Newman, 2007) As scholars and researchers confront gaps in traditional publishing systems — as editors, as authors, or even as leaders of scholarly societies — libraries are highly visible to them as service organizations that reside on their own campuses along side them. With the emergence of e-scholarship — from digital humanities initiatives to e-science programs — libraries are also working more closely with researchers and scholars to develop new services that are closely integrated into the research process.

Consequently, expectations are rising that research libraries will take responsibility for current scholarship as well as legacy scholarship, especially for a wide range of locally produced works of scholarship. Evolving repository services, which house and disseminate institutional records, theses and dissertations, pre-prints, post-prints, learning objects, and research data, can inspire a range of inquiries about potential publishing services. It could be a short step to managing publication of works like journals and monographs, and faculty are approaching research libraries seeking publishing services.

A Virginia Tech Web page tells a typical story:

"From a 1988 request by a Virginia Tech faculty member to begin a new scholarly journal and another request to establish a university press, grew the Digital Library and Archives. It was envisioned that the university could use a rapidly maturing technology base to establish a place where new scholarly works could be published but without the capital outlay that would be required to begin a print-based publishing operation. Since the would-be faculty editors were not necessarily the ones well versed in the technology, an obvious need existed for support services. In addition, there was the need to begin to define or describe these future electronic scholarly works."[6]

Confronted with an emerging need, research libraries are assessing their own resources and missions, and deciding that there is an important role they can play. Publishing services grow out of a sense of "fit" reflecting a conjunction of a new socio-technical environment and some kinds of scholarly publishing needs.

Technologies fostering faster, easier communication, including new kinds of digital dissemination, new production processes and workflows, are shifting the loci of expertise relating to publishing — broadly defined. Parts of small-scale publishing that previously might fall to vendors increasingly resemble services that could be or already are being offered on campus.
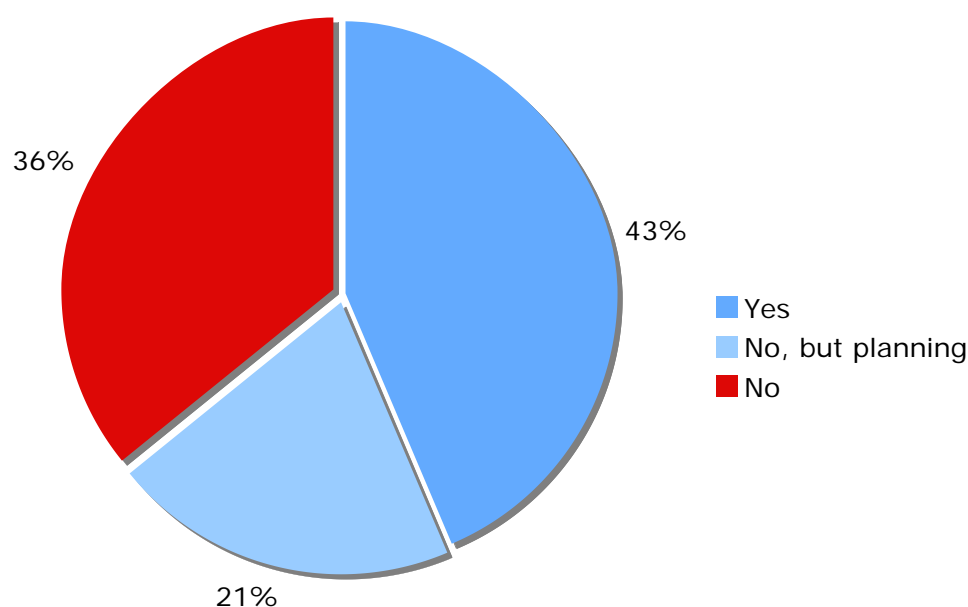
Library Publishing Services

Evidence that many research libraries are actively assuming publishing roles is mounting. The June/ August 2007 special double issue of *ARL: A Bimonthly Report* examining university publishing includes several articles describing different libraries' publishing services and plans.[7] Regular announcements and reports on library publishing activities appear in the higher education press. (*LJ Academic Newswire*, 2008; Jaschik, 2007; Pitt Press, 2007; Jaschik, 2008) Yet, in contrast to the numerous studies of libraries' digital repository activities, there has not been an organized investigation of research libraries' publishing activities.

To foster a deeper understanding of this emerging research library role, in late 2007 the Association of Research Libraries surveyed its membership to gather data on their publishing services. In designing the survey, particular attention was paid to journal publishing which appeared to be the focus of most emerging publishing programs. Following the survey, publishing program managers at ten institutions participated in semi-structured interviews to delve more deeply into key aspects of service development: the sources and motivations for service launch, the range of publishing services, relationships with strategic partners — mainly faculty and university presses — business models, and program support. Together, these information sources provide the evidentiary basis for the report. (Appendix A provides further information on the data gathering process.)

The survey of ARL member libraries verified that research libraries are rapidly developing publishing services like publication hosting and dissemination, production support such as peer review workflow management and journal issue compilation, or digitization of back issues. By late 2007, 44% of the 80 responding ARL libraries reported they were delivering publishing services and another 21% were currently planning publishing service development. Only 36% of responding institutions were not active in this service arena.

Figure 1. Percentage of ARL Member Libraries Reporting Publishing Services

Basic Services

Hosting services are perhaps the archetypical publishing service of a digital age, and library publishing program managers report substantial demand for hosting services. Hosting tends to be the most visible service the library provides, although a long period of development precedes public release of a work. Libraries increasingly are positioned to provide at least basic hosting services. Open source software such as the Public Knowledge Project's Open Journal Systems[8] and DPubs[9] along with new commercial services such as those offered by The Berkeley Electronic Press (bepress) through Digital Commons[10] allows libraries to support basic journal hosting relatively easily.

Figure 2. Software Supporting Library Publishing Services
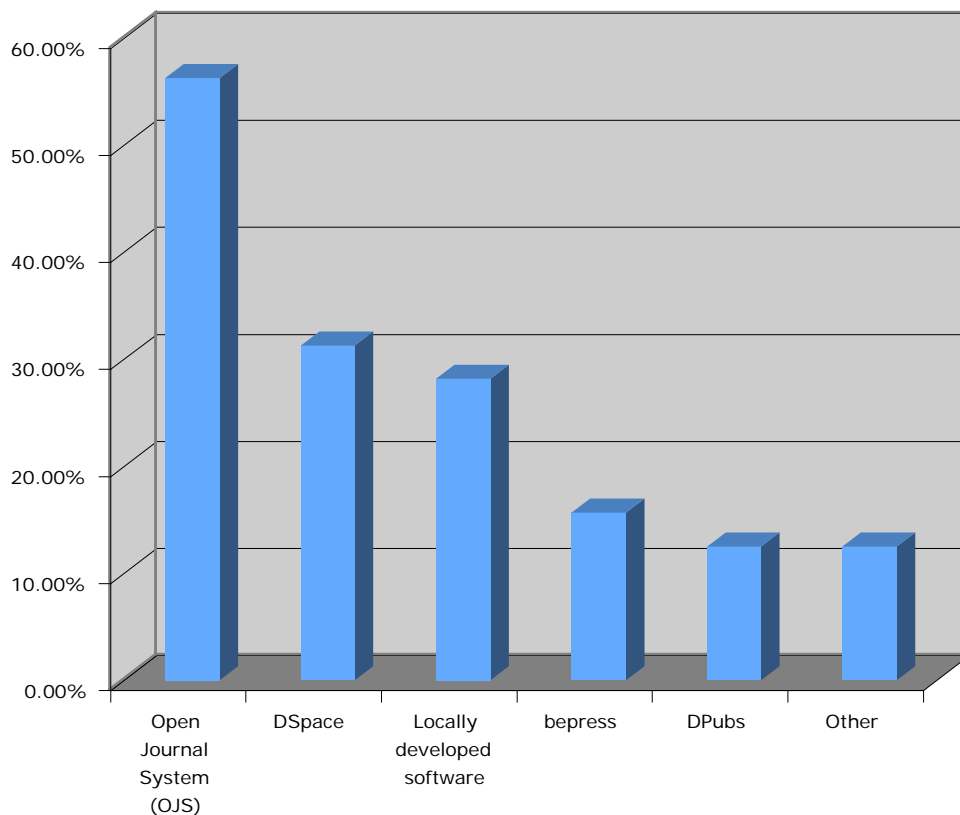
Note: Many libraries use multiple applications.

The impact on ARL libraries of the open source Open Journal Systems (OJS) is evident in the survey responses. More than half of the responding libraries operating publishing services use it. The DSpace software is widely deployed to support repository as well as publishing services, but it tends to be used in conjunction with other software, often to provide archival and preservation services. Locally developed software is rather common, although with new applications available, several libraries report they are shifting to open source solutions.

Although the majority of responding libraries provide hosting services based within the library or on campus, a substantial minority are contracting for hosting services and publishing applications with Digital Commons from bepress, a repository services vendor that provides publishing services as well.

Digital Commons frees a library from both hardware and software support, allowing staff resources to be directed to other publishing service functions such as consulting and workflow design.

While "publishing services" may immediately conjure hosting services — server support, software development or installation — in fact, advice and consulting regarding a variety of publishing practices and decisions are perhaps even more popular services that libraries provide. There are pressing demands for information and advice about issues such as moving print publications into electronic publishing, discontinuing print in favor of electronic alternatives, publishing works with limited revenue-generating capability, revenue generation, standards of various sorts, markup and encoding, metadata generation, preservation, contracting with service providers, and copyright management. Sometimes advising and consulting leads to a library role in producing a publication, but often it concerns a wider range of activities and options within the scholarly publishing realm.

Libraries often complement their publishing services by supporting digitizing older printed publications, particularly journal back runs. Converting existing digital content into new formats is also quite common. Both services enrich ongoing publishing. For journals and monograph series, digitization helps build a critical mass of content to attract readers' attention, and may offer opportunities to partner with existing publishers such as university presses.

In addition to basic hosting, libraries offer related services such as permanent URLs, manuscript handling systems, and preservation through programs like LOCKSS. Many libraries are exploring services such as workflow setup, publication design, markup, file generation, and print on demand. As hosting service management becomes more routine, a few libraries are venturing into areas such as copyediting and basic design services.

Table 1. Post Production Services Offered by Library Publishing Programs

Service	Frequency
Metadata	82%
Cataloging	76%
Digital preservation such as LOCKSS	55%
ISSN registry	33%
Open URL support	33%
Other	33%
Notification of A&I sources	24%

Libraries often support streamlined peer review workflows, but they are not providing peer review itself. Library publication programs are not limited to producing locally authored works or publishing without quality evaluation of content. In fact, launching programs with limited resources, libraries must make careful choices of the works in which they invest. Consequently, peer reviewed works dominate library publishing programs and editors or acquisitions committees typically maintain their traditional roles in identifying quality content. Applications supporting peer-review processes were commonly noted as important adjuncts to hosting services. With the OJS system, peer review management is an integral part of the software suite. For some publishing programs the manuscript handling services they provide are a significant attraction to the editors of established publications.

Compared to traditional publishing, libraries provide a truncated list of services. However, in the search for transformative approaches to scholarly publishing, a number of research library publishing programs are intentionally exploring the boundaries of what several program managers conceptualize as a service core. They seek to identify the minimum suite of activities required to underpin efficient and effective selection, release, and dissemination of scholarly works through recognized vehicles like journals and monographs. The challenge is to provide the basic service suite by reallocating resources, partnering, seeking synergies with related services, and modest revenue streams. Libraries have little desire to replicate traditional publishing services. They are focusing on the capabilities and possibilities of new models rather than slavishly duplicating or simply automating traditional models. Aware there are core services underpinning both traditional and new model publishing activities, publishing programs are concentrating on defining that minimum set and learning what is required to support it. At the same time, they seek to identify the most promising new kinds of services needed to support authors and editors.

Scale and Scope of Publishing Programs

Although libraries are publishing many kinds of works, services for journal production dominate library-based publishing programs — 88% of publishing libraries reported journals were being published. At the same time, 71% report they are involved with monographic publishing. Some monographic projects are library-press collaborations, but many are simply library-based, initiated by requests from campus units or individual scholars. Survey respondents also reported substantial activity in publishing conference papers and proceedings — 79%.[11]

The numbers of titles that research libraries produce represent a very thin slice of the scholarly publishing pie. Small numbers of monographs, many of them non-traditional monographic works, were reported. Although journals are the focus of emerging library-based publishing services, total numbers of journals published at most institutions are modest. The survey respondents work with 265 titles, 53 of which were under development at the time of the survey. On average, libraries work with 7 or 8 titles with 6 currently available. A few libraries are publishing substantially more titles, but only five libraries reported working with more than 10 titles; the largest service publishes 58 titles.

Libraries are not just producing new titles; in fact established titles dominate this emerging publishing sector and are the main drivers of service development. Of the journals already available, 131 were established titles before the library took over publication while 81 are new titles. Program manager interviews suggested these titles reflect a wide range of disciplines, although humanities titles appear to dominate publishing services. Disciplines frequently using library publishing services included English, history, education, and nursing.

Libraries provide publishing services for both print and electronic publication, but electronic publishing dominates the output. Most library-published titles are produced only in electronic form. Where a print version of a title is produced, a publishing partner may generate it while the library handles the electronic publishing. At the moment, print on demand services are rarely used, although a few programs are actively exploring this functionality.

Reflecting a focus on publishing fundamentals, Web 2.0 social networking and user content generating capabilities are not yet prominent parts of library publishing programs. There are some signs this might change as these kinds of functionality evolve in the context of other library services, such as the Penn Tags social bookmarking service operated by the University of Pennsylvania Libraries.[12]

Figure 3. Types of Journals and Journal Formats
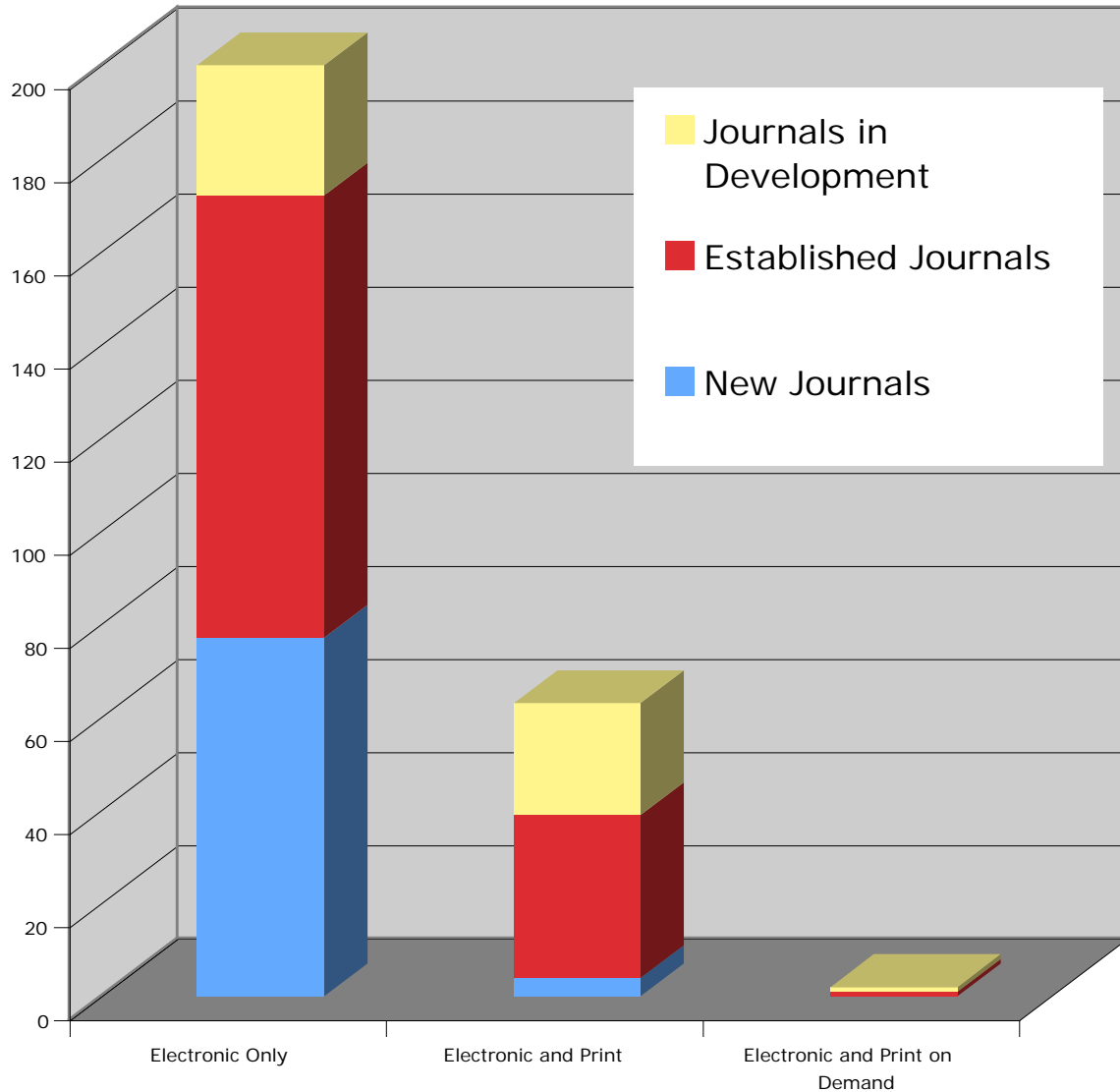
Services and Business Models

Library publishing services have few pretensions to the production of elaborate publications and libraries pursue a different economics from those of traditional publishers. Libraries' products certainly resemble many publications produced by traditional publishers, but they are largely electronic-only and basic in their design. Limiting services to purely electronic publications offers some significant advantages over print-oriented publishing. Costs are kept low by simplifying production and design and relying on open-source software. Online full-text publishing meanwhile enables discovery by a wide range of search engines and full-text searching, reducing the need for marketing. Workflows tend to be streamlined and almost all services are highly automated once production commences. Design work is usually done on a very modest scale.

As with most scholarly publishing, much of the work of content recruitment and selection, and even some editing, is done by unpaid volunteers drawn from the ranks of active scholars and researchers.

The largest costs lie in the startup process of advising, prototyping, creating workflows, and generating whatever layout and graphic design is considered adequate. Ongoing support costs for these activities accrue on a modest scale. Typically editors, authors, or association partners receive little in the way of expensive services such as elaborate design and layouts or extensive copyediting.

Business models for publications

However reduced, of course there are still real costs to providing basic publishing services. By examining how libraries are supporting their service costs, two levels of business planning are evident in library publishing services: publication-level planning and program-level planning. Most commonly, when an individual publication generates revenue it supplements broader program support for the publication rather than entirely covering service costs. In a few cases, the program business model requires all projects to be revenue neutral; each project is expected to become revenue generating. Most library publishing services rely heavily on program-level funding and revenue from individual titles provides only a modest supplement to this support.

Libraries employ business models ranging from the traditional to the innovative. Since journals dominate library publishing programs and also present ongoing costs, most of information provided about business models focused on journals. A number of library publishing programs support subscription journals and some library-published works are available in print.

Figure 4. Sources of Funding for Individual Journal Titles
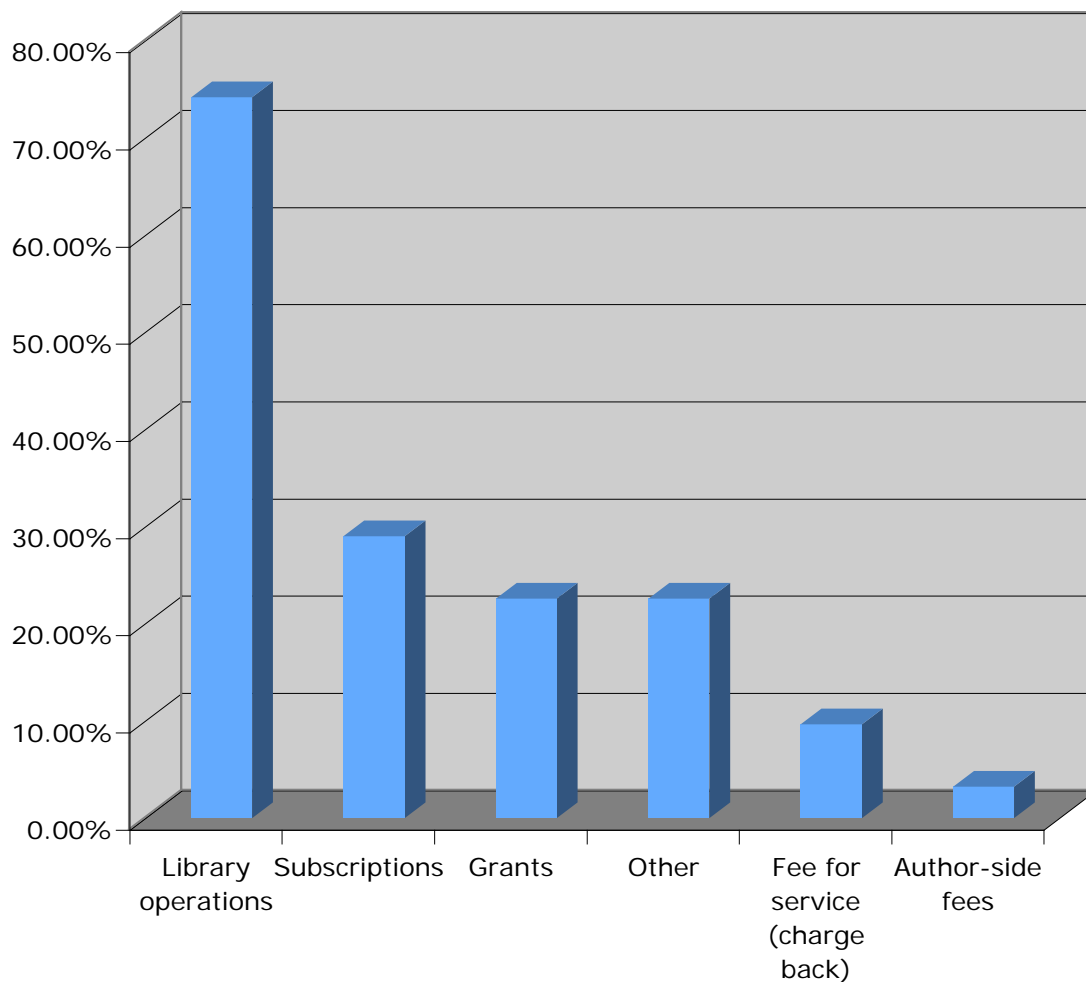
Libraries are making large contributions of organizational resources to support publishing service programs, so it is not surprising that a substantial portion of library publishing uses business models that enable open access or work toward such a model to best leverage those institutional investments. Subsidizing locally managed open access publishing is an alternative to subsidizing subscription models with inherent access restrictions. Where libraries are supporting only open access publications, there is also a genuine element of pragmatism in the decision — they are avoiding the substantial overhead involved in subscription-based business models and traditional print runs. The costs of restricting access to a small readership may exceed the opportunities to generate revenue that subscriptions create. For many publications the goal is to keep the publishing costs low enough that they can be managed as core library services.

Library publishing services occasionally produce an online complement to a print publication that uses a traditional business model. Revenues from print publications may subsidize the digital publication produced by the library. Several libraries are considering developing subscription-handling capabilities so that they can provide services to a larger population of journals. It seems likely that library publishing will continue to support a diverse set of business models in the nearer term.

Some library publishing programs are experimenting with print-on-demand as a potentially attractive approach to revenue generation, but program manager interviews suggest print-on-demand is probably not capable of fully supporting the costs of a publishing program. In some cases print-on-demand services are a product of a university press partnership but other libraries are simply contracting directly with commercial vendors for the service.

Start-up/set-up costs for journal publishing are generally substantially higher than ongoing publishing or dissemination costs. Many libraries use a mixed model to manage the two types of investment, either subsidizing set-up but using other funding approaches for ongoing publishing or seeking special funds for start up and providing ongoing publishing support as a core library service. Institution-specific factors, in conjunction with the various partnerships in play, seem to influence the pattern.

Publishing program support

As the analysis of publication level funding models suggests, the mechanisms of support for a library's publishing program are diverse and usually diversified. Most libraries rely on at least two different sources of funding (a few used many more) and have plans to diversify their funding sources further in the future. Nonetheless, libraries' publishing services almost all have a substantial foundation in library operational support, often with the addition of a certain level of ongoing campus IT support. Support is not limited to operations and reallocated resources; several programs have discovered genuine opportunities for revenue generation and may well be developing further new models.

Libraries are using a wide variety of funding and revenue models, but nearly all research libraries are basing a substantial portion of the service development and support costs on the library budget. Some are leveraging various forms of short-term funding to support the launch of the library's service and perhaps the startup of some initial projects. All of the libraries currently utilizing library budget funds anticipate continuing to rely on this funding. Budgetary support is usually predominantly staff time, often portions of the time of existing staff, overhead of various forms, occasionally equipment support, and in some cases support for short-term student help or contract assistance.

In addition to base budget and overhead support by the library, other sources of revenue include grants, charge backs to units or organizations, royalties and licensing fees, print-on-demand revenue,

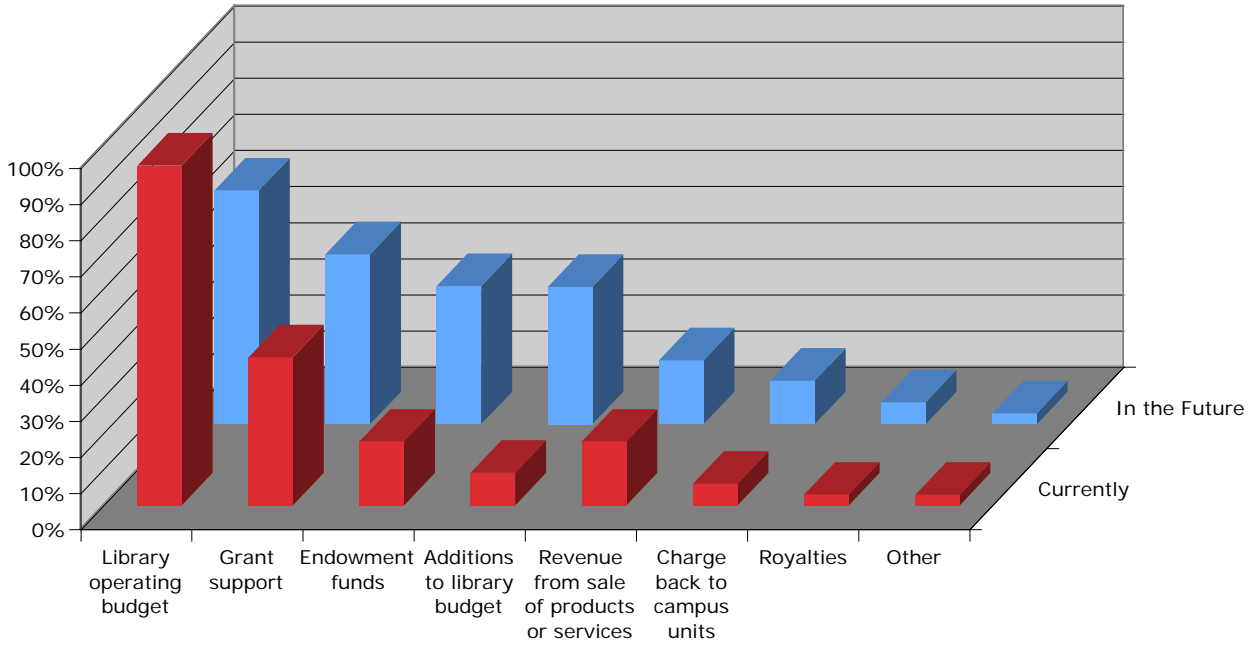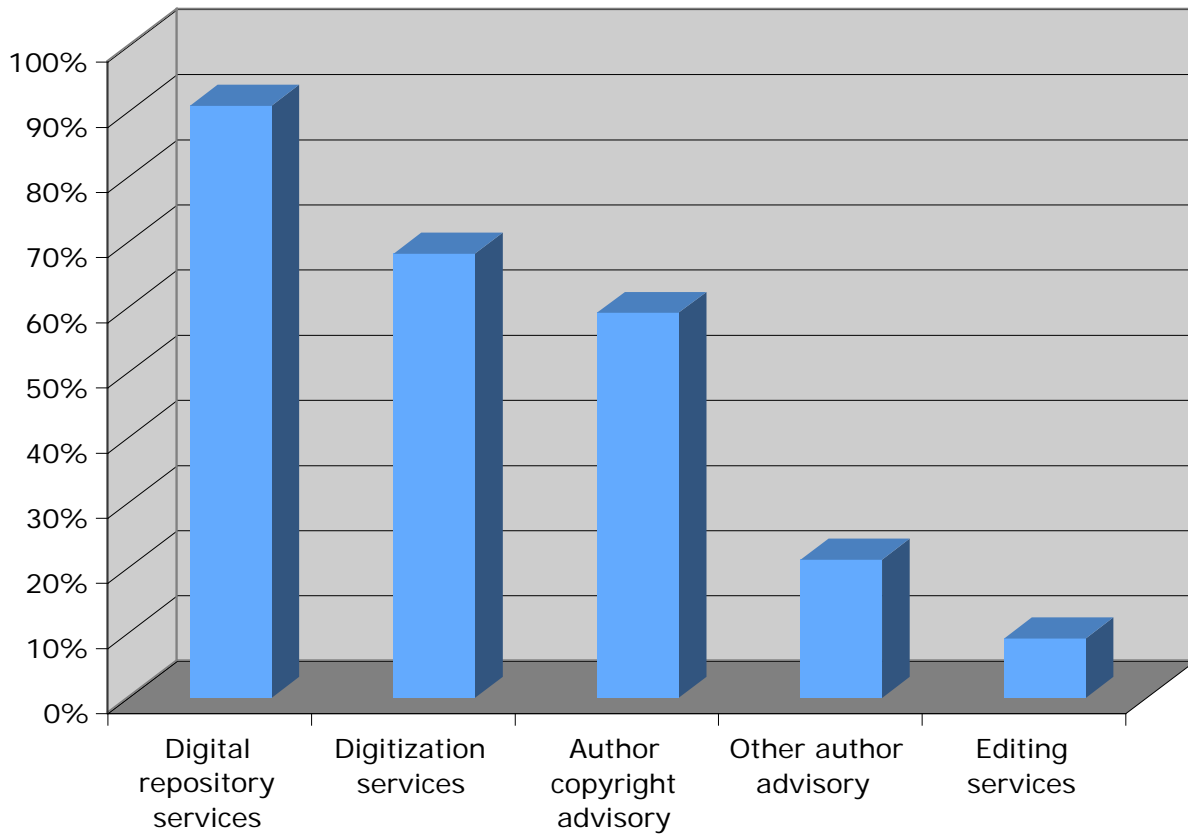## Figure 5. Sources of Support for Library Publishing Programs

Figure 6. Additional Services Provided by Libraries with Publishing Services

and other forms of sales of some kind. The most substantial source of grant funds aimed at accelerating publishing service development is shared among many of ARL's Canadian member libraries. The Canadian government has provided funding to a university consortium through the Synergies project specifically to reach out to Canadian scholarly societies in the arts and social sciences to assist them in moving fully into a digital publishing environment.[13] This funding is awarded specifically for infrastructure development and will not provide continuing direct program support.

Partnering is a consistent strategy to diversify program support, and libraries report they often work with multiple partners. Libraries report partnering with campus information technology, departments, colleges and other campus units, university presses, scholarly societies, and other libraries. Those partners provide a variety of support, including staffing, equipment, content, services, and direct funding. Surveyed libraries reported a very low level of grant support currently, with the notable exception of libraries involved with Synergies. In some cases resources are being redirected from acquiring externally produced materials to more directly supporting the dissemination of locally produced research and scholarship.

As part of the process of identifying a set of core publishing services that can be sustained, usually with modest additions to a library's current resources, libraries are also deciding which, if any, additional services they can support through revenue generating models. For instance, they may offer copyediting or design services on a contract basis. In some cases, these services may already be available from other units or vendors.

It is important to understand another facet of program support; publishing services are not usually treated as an isolated operating unit, the way a university press might be. They are typically embedded in an emerging program of related services — digital repository development, digitization programs, copyright management advising, etc. This enables both crucial synergies and important efficiencies in the launch and evolution of publishing services. Libraries are creating a critical mass of content connecting new content with print content converted to digital forms.

Although many research libraries made ongoing staff assignments and budget commitments to developing publishing services, others are working on one or a few experimental projects with short term funding. While a common expectation is that publishing services of some kind will continue to develop and grow within research libraries, almost every service activity is in a formative stage and support strategies are fluid.

Patterns and Trends

Library Publishing in a University Publishing Context

A question that must be addressed: What is meant by publishing? Borgman suggests "'Publication' occurs when a document is 'made public' with the intention that it be read by others." (Borgman, 2007, p. 48.) This is a very broad definition — one covering most of the content in institutional and disciplinary repositories or even documents posted by individuals on Web sites. Library publishing services, similarly, could be conceived broadly. Certainly libraries are offering a growing list of related services through digital repositories and digital libraries. Although the analysis here focuses on publishing services producing traditional publication forms — journals and monographs — libraries are working with a broader spectrum of old and few forms of publications.

Campus-based peer-reviewed publishing has a long and honorable tradition at research institutions. Print journals and monographs have been published at universities for many years, not just by university presses but also by departments and research institutes (and even a few libraries). As ARL libraries are entering into this tradition, they do so with awareness of substantial numbers of campus-based publications outside of their own publishing programs. Interviews indicated one source of uptake for library publishing services is existing campus-based publishing.

A focus on high-quality scholarship characterizes publishing services. Many libraries only offer services for peer-reviewed works, although some are supporting other kinds of works, such as student journals. Typically, library-published titles employ completely traditional peer review practices. Staff generally do not evaluate content but rely on recommendations from outside the library. The majority of journals published are established titles that simply bring their existing peer review practices with them. New journals are started at the request of faculty editors who organize standard peer review procedures and workflows. While there are only a few monographic series using library services, they report using standard press selection practices. In some cases, these are contributed by university presses and the press' usual acquisitions process is used.

Library services are innovative in their emphasis on electronic publishing and electronic publications, engaging in transformational projects, and focussing on valuable scholarly works that face increasing difficulty in conforming to the demands of purely market-based publishing systems. Library publishing, consequently, spans a space between traditional genres and new-model publications.

Scholar and Researcher Needs

Regardless of what forms of service libraries prove capable of supporting, many authors and editors are seeking more options than they feel traditional publishing offers. While there is frequent disagreement about the seriousness of the challenges facing the scholarly journal and the scholarly monograph, many researchers are responding now to their perceptions of dysfunctions.

A myriad of unique circumstances inspire individuals to turn to research libraries and seek help with their publishing problems, but the type of works libraries are publishing is one indicator of editor and author motivation. The substantial majority of publications are moving to library publishing services from some existing publishing regime. Scholarly societies contracting for publishing services may be looking for alternatives or may lose a contract when their publishing partner finds itself unable to cover

costs with its existing business model. Journals publishing only in print may need a mechanism to foray into digital publishing. The titles involved may be well regarded within a research specialty, but lack a broad enough readership to support more costly publishing modes. Some small journals seem to be beginning to experience the same conundrum causing concern for the scholarly monograph — the requirement of revenue generation when that is unrelated to the quality of the research published.

Further clues to the drivers of demand for publishing services lie in disciplinary affiliations of those seeking library services. Many libraries report initial partnerships with humanists, but this may reflect the closer working relationships that librarians typically have with humanists. There were many examples of interest from social science and scientific disciplines. Education was mentioned with some frequency as a source of early publishing projects as were a range of science and health-related disciplines. Several librarians mentioned that they anticipate encountering substantial interest in the sciences, especially in emerging research specialties and interdisciplinary areas as they shift to more active identification of publishing needs.

In a few cases libraries have encountered considerable interest from faculty in developing publications devoted to student research. Several program directors report this accompanies a growing emphasis on teaching research skills to undergraduates and engaging them in research programs. The scholarly communication process is an inherent part of the larger research process which increasingly involves undergraduates, but there is little interest among traditional publishers in supporting the dissemination of this kind of work. The high levels of use of many student-authored works, such as digital theses and dissertations, suggests their value extends well beyond the pedagogical. (Royster, 2007)

Service Launch

In contrast to considerations of mission, service orientation, and local demand, ideology is playing a minor role in the initiation of library publishing programs. The open access movement has drawn attention to the new opportunities for affordable and widely accessible publishing. However, interviews suggest library-based publishing programs are pragmatic responses to evident needs, not services in search of clients; they identify and develop opportunities to create low cost publishing practices and services with dual aims of providing access to works of scholarship and revenue maximization. Library publishing is not a movement so much as a development.

Most programs are working with open access titles and foster the interest they find in new business models, but many are also working with titles that employ subscription or other traditional models. A sort of light overhead publishing — based on open source software, close integration with related services, maximum use of digital formats, and a minimum of bells and whistles — is a rational response to the challenges of small scale publishing, and open access fits with this approach.

Looking beyond ideology, a pattern emerged in the survey data and interviews with program managers regarding the factors and circumstances leading many research libraries to make the commitment to developing publishing services. Particularly for programs that have been developed in the last few years, three elements are commonly involved.

First, staff at the library, often library leadership, hear multiple expressions of need from faculty, typically editors or other faculty already involved in publishing roles. The scholars and researchers approaching the library are not newcomers to publishing but rather people who are engaged to some extent already and recognize problems established publishing systems are failing to address. This is not

to say established publishers might not be capable of meeting the needs, but simply that there are many individuals whose sincere efforts to work within the established system have met with some degree of failure, leaving a gap that motivates them to explore the library's capabilities.

A second factor is the construction of related infrastructure of some sort. Infrastructure is not just technology — software and servers — it also includes the development of staff expertise and partner relationships. A wide variety of activities may provide the spark — digitization activities, digital repository development of various types (institutional, disciplinary), services supporting new forms of scholarly research such as digital humanities centers. The infrastructure not only creates a focal point for faculty to express their needs, it provides a resource base for initial exploration of the possibilities of library publishing services.

In many cases the third element contributing to the development of publishing services is the availability of new resources and the ability to reallocate existing resources in some combination. New resources may be available short term — a special budgetary supplement, a grant, or access to partner resources. They may result from a more fundamental commitment to building a program — reallocations of staff, new positions, and budgetary resources.

The most dramatic example of new resources catalyzing the development of publishing services is the Canadian Synergies Project. The Canada Foundation for Innovation awarded 11.5 million dollars (Canadian) [14] to a group of university libraries to fund the development of scholarly publishing infrastructure. (See Appendix C for more detail.) As a result, five partner libraries and 16 other libraries will jointly contribute to the development of a shared capability to support library-based publishing services.

Positioning to Build Scale

While research libraries collectively are involved in the publication of hundreds of titles, this is a relatively small segment of the total journal market; library publishing services are in a very early stage in the process of determining the kinds of publishing models they might support and the scale of service provision they can develop. Very few programs currently support even 10 journal titles or more than a handful of monographic works. A few programs have developed appreciable scale but most programs are new. It is difficult to identify clear starting dates for most programs as launch of a publication is typically predated by an extended period of discussion, exploration, and planning. Program managers note it typically takes years to work through the process from an initial conversation to the public release of a volume or issue.

In planning for the future of publishing services, program managers have their eyes on a joint rubric of identifying resource needs for basic services and fostering scalability. Programs are working through an initial learning curve with a small number of publications and then plan to build on their experiences to scale services to support a larger range of publications. Scale more often applies to increasing the number of publications that can be supported rather than building capability for more elaborate services. A few are beginning to feel confident they have identified a basic set of publishing services that are supportable, although greater reallocation of library resources or new resources from the institution may be required to fully meet the demand for services. A couple of programs are even poised to expand their service to support publishing on a revenue-generating basis for constituencies lacking a local affiliation. More commonly, libraries are simultaneously exploring potential institutional support while they begin the process of learning what is involved with providing publishing services.

In both developing and established programs, libraries reflect their long-standing practice of working with their constituencies to explore service needs and capabilities. In fact, the very collaborative approach to publishing services is a hallmark of library activity. Librarians work closely with many scholars and researchers to provide a wide range of library services, and this service culture facilitates the formation of partnerships and close working relationships.

The Synergies project again deserves special mention in this area. The collaborative approach of Canadian libraries has been rewarded with a national investment that will create a significant shared publishing capability. By supporting further development of open source publishing software through the Public Knowledge Project, publishing programs around the world will benefit from that collaboration. Synergies will fund a test-bed for creating shared infrastructure to advance library-based publishing along with critical development of open source publishing tools,. The project's particular emphasis on journals published by scholarly societies in the social sciences and humanities is well-matched with arenas where it can be particularly difficult to maintain their traditional publishing practices or find partners among the ranks of established publishers. Constructing scale and defining basic publishing services for a digital world are project goals. If successful Synergies should point the way for other institutional collaborations and other publications to successfully embrace library-based publishing.

Looking Forward

It appears research libraries are at the beginning of a period of expansion in their publishing services. There is an emerging consensus that some sort of basic publishing services will become a core service for research libraries. In addition, some libraries see opportunities to expand somewhat beyond the core to support demand for responsive, low cost additional services.

There is a solid base of support within the library budget, but for real growth to meet existing and emerging demands for publishing services, many institutions see that additional support from campus administration will be necessary. Libraries can and will need to redirect resources, but there is wide agreement among program managers that broader institutional investments will be required to supplement existing library budgets, at least as long as the current cost structure of established scholarly publishing persists.

The same forces straining library materials' budgets seem likely to ensure that demand for publishing services delivered in a campus environment to campus constituencies will grow. Small journals, especially, are weighing their options and many are not pleased with the choices offered by either aggregator services or commercial publishers. There is growing recognition that scholarly titles must find a path to an online future somehow and research libraries are potential partners and reservoirs of substantial expertise on emerging publishing patterns. Even where libraries are not developing dissemination capabilities, demand for advisory services is growing.

Library publishing programs may serve niche publications most effectively, but there is some potential for the creation of scale sufficient to support higher visibility publications. The ambitions of the Synergies project include outreach to all Canadian association publications in the humanities and social sciences. As library publishing services become more widely recognized, they are likely to prove attractive to publications seeking broader audiences — among both authors and readers.

Library publishing services are developing in conjunction with a number of related services that are increasing embedding library services more directly into the research process. Staff working on library publishing are simultaneously developing digital repository, digital library, digitization, digital preservation, and metadata services. Libraries are building expertise in licensing and copyright advisory that intersect with publishing services. Staff are moving away from service desks and into research spaces. Faculty are collaborating increasingly closely with library staff in the design of curricula and learning objects. These trends are synergizing with the development of library publishing services, allowing efficient and responsive development of a set of related new services. Publishing services are just one part of the rapid transformation taking place in research libraries.

Partnerships are proving key to the development of most library publishing programs. The networked environment rewards and encourages collaborative work and may point to an important element of the transformative potential library publishing offers to scholarly communication. Organizationally, libraries are positioned to create partnerships and build on existing collaborative relationships. They are poised to maintain a close connection to the needs for publication services and to develop systems that leverage complementary contributions to provide new and transformative publishing models.

Although relationships with campus computing and academic units seem to be the most common style of partnership (leaving aside the multi-institutional collaboration involved in Synergies) library-university press partnerships deserve special attention. Libraries that are developing publishing

programs are reaching out to and developing cooperative projects with university presses on many campuses where they co-exist. In a few notable cases library publishing services are entirely grounded in press partnerships, but more often joint projects seem to be an adjunct to the publishing programs of both organizations. Many research libraries are at institutions with no existing investment in a university press and in a few cases libraries have even cast their publishing services within the rubric of a launch of a digital press. (Jaschik, 2007; Henry, 2007) It is not clear what the trend will be — whether press-library partnerships will tend to grow into a single, unified publishing service or persist as intersections of two broader publishing programs.[15]

Diversity and experimentation are hallmarks of the current state of library publishing services. The programs that have hewed most closely to traditional publishing models in some instances appear to be making slower progress than programs that focus on leveraging new capabilities and new economies. Both the value and opportunity of library publishing services rests in their potential to transform at least a segment of scholarly publishing. They are finding a service scale with production and delivery modes that can be sustained within the infrastructure of research libraries.

Issues for Further Consideration

The research reported was inevitably limited in its scope and depth. The paucity of organized investigation into library publishing services suggests there is ample opportunity, and interviews with publishing program managers suggested a substantial need, for further work looking at a variety of aspects of library publishing service definitions. Business model development stands out as one continuing need as programs evolve.

With the exception of the Synergies partner institutions, library publishing programs seem to be developing in something of a vacuum of community discussion. Probably more discussion of library–press partnerships (or at least their potential) has occurred than has focused directly on library publishing services. The scope and scale of existing library publishing services indicates the time is ripe for information exchange between publishing programs.

Clearly, publishing services will require substantial institutional support to thrive. Research libraries have the will and wherewithal to start service development, but it will require broader commitment of institutional resources, almost surely requiring new resources from institutional leadership, to build effective capacity. The time is ripe for library leadership and increasingly for campus leadership to give thoughtful consideration to the potential, the goals, the resource needs, and the value of investing in and fostering this rapidly evolving mode of university publishing. The question is no longer whether libraries should offer publishing services, but what kinds of services libraries will offer. Consequently, leaders need to ask to what extent can the university benefit from investments in library publishing services, particularly in the context of related transformations in library services. While new investments are needed, there are both great demands for publishing services and significant benefits to be obtained from strategic investments.

With library publishing services aiming to achieve scale, monitoring the growth of publishing capacity and uptake of that capacity will be important to the library community and campus leadership. Publications programs generally reported a pipeline of developing publications. The Synergies Project, in particular, has significant targets for migrating publications into a library-based publishing system.

In the near future it should be possible for research libraries to collectively define the core publishing services, particularly for journals, in a 21st century network-based publishing and dissemination system. With publishing services already offering the fruits of open source application development, agreement on core services could guide strategic investment in these kinds of shared resources for publishing programs. A defined core should also assist in identifying benchmarks for service assessment, business models, development, and investment planning.

Finally, this study looked at library publishing services focused largely on transforming established publishing modes such as journals and monographs. As new modes for organizing, disseminating, and authoring scholarly works emerge, research libraries need a better understanding of what services could support and encourage new kinds of publications and how such services relate to publishing services of the types discussed in this report.

Endnotes

[1] See http://pkp.sfu.ca/.

[2] See http://dpubs.org/.

[3] See http://digitalcommons.bepress.com/journals.html.

[4] See http://www.bioone.org.

[5] See http://muse.jhu.edu.

[6] See http://scholar.lib.vt.edu/about/aboutejs.html.

[7] See http://www.arl.org/resources/pubs/br/br252-253.shtml.

[8] See http://pkp.sfu.ca/.

[9] See http://dpubs.org/.

[10] See http://digitalcommons.bepress.com/journals.html.

[11] The Public Knowledge Project, which supports OJS, also distributes open source conference management software, the Open Conference Systems (OCS).

[12] See http://tags.library.upenn.edu/help/

[13] Information on the Synergies project is available on the Web site http://www.synergiescanada.org/.

[14] See http://www.innovation.ca/media/index.cfm?websiteid=486.

[15] Note Crow's comments in (Harley, 2008) p. 17.

Note: All URLs accessed March 26, 2008.

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Note: All URLs accessed March 26, 2008.

Appendix A: Study Design: Data gathering instruments and response rates

The data for the report were drawn from two sources. The initial data gathering phase utilized a survey of ARL member libraries. The ARL membership is comprised of 123 of the largest research libraries in the U.S. and Canada. The survey was administered in September and October of 2007 using a Web form. Eighty member libraries responded to the survey for a response rate of 65% — a rate typical of ARL's annual SPEC surveys. Responding libraries were all university libraries with one exception.

The survey instrument is comprised largely of closed response questions to facilitate ease of completion. It was developed in consultation with and pilot tested by a small group of library publishing program managers. The survey questions are available at http://www.arl.org/bm~doc/cplp_survey_2007.pdf.

A variety of analyses of survey responses were performed ranging from generation of descriptive statistics, creation of cross-tabulations, and a multivariate analysis of variance.

Based on an initial review and analysis of the survey responses a second phase of data collection was initiated consisting of semi-structured interviews of ten publishing program managers selected from among the U.S. and Canadian libraries submitting survey responses. Only one of the interviewees had participated in the earlier survey development. Interviewees were not randomly selected; instead, the cohort was assembled to present a diversity of program characteristics as captured in the survey responses. Particular effort was made to include programs reporting explicit business planning and also partnerships with university presses.

Interviews lasted 30 to 60 minutes, and were conducted by telephone in December 2007 and January 2008. The content of the conversations were captured through extensive notes.

A sample interview guide with representative questions follows.

**Follow-up Interviews From
2007–2008 ARL Study of Research Library Publishing
Sample Interview Guide**

Date:
Interviewee Institution:
Individual:
Title:
Interview focus:
Questions:

How long has the library been developing publishing services?

Why did the library get into publishing services?
    Probes:
    Who inside the library drove the process?
    Who outside the library drove the process?

How would you describe the disciplinary distribution of the demand for publishing services?
    Probe:
    Are there patterns in who is being served and how?

How do you see the development of library publishing services affecting established publications?

How do you see publishing services relating to digitization and digital library services?
    Probes:
    How about institutional repository services?
    Author copyright services?

How have you approached the development of business models for individual publications?

You mentioned that you have a business model for your publishing services. Please tell me about what that looks like and how you developed it.

Describe the partnership of the library and press in more detail.
   Probes:
    How long?
    Who drove?
    Relative contributions?
    Resource plans?

Appendix B: Research Library Publishing Services and University Presses

Libraries are far from the only entities on campus capable of providing publishing services. The research reported here did not focus exclusively on joint library-press publishing projects, but some data on library-press partnerships was collected. Substantial numbers of ARL members reported involvement with some kind of joint project with a university press.

Figure 7. Libraries Reporting Press Partnerships for Joint Publishing
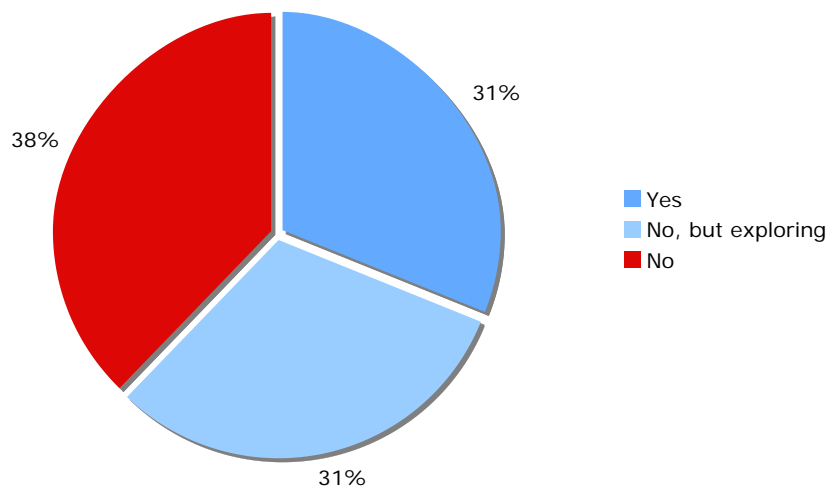
Acknowledging the limits of the study data, a brief list of observations on these partnership projects is offered here.

- Library-press partnerships are generally only a portion (usually a small portion) of the publishing activities of both the library and the press.

- Substantial discontinuities in content focus are notable. Libraries are emphasizing services for journal publishing while presses have their strongest investments in monograph publishing. Joint projects to produce new content largely focused on monographic content. The main library contribution to press journal publishing was the digitization of back files.

- Another form of discontinuity between press and library publishing arises from the small size of the university press community relative to the research library community. Many research libraries are at institutions with no affiliation to a corresponding university press. Many research libraries that report some common affiliation with a press note that the press serves a university system, not just the university supported by the library.

- Research libraries are pursuing a number of partnerships. Their options are broad and their attention tends to be extended beyond just the potential of press partnerships.

- Library publishing services are typically deeply embedded in a range of related services, many of which are not of immediate interest to potential press partners, requiring libraries to build functionality beyond that of existing or potential press partnerships.

- New kinds of efficiencies are emerging and governing strategic investments in a networked environment. Historic divisions of labor in the scholarly communication system are breaking down, reducing the advantages of limiting publishing services to a somewhat independent and isolated press in favor of the synergies and cross investments that can be made by embedding publishing services within a broader matrix of research and teaching support services.

UNIVERSITY PUBLISHING

Continued

SYNERGIES: BUILDING NATIONAL INFRASTRUCTURE FOR CANADIAN SCHOLARLY PUBLISHING

by Rea Devakos, Coordinator, Scholarly Communication Initiatives, and Karen Turko, Director of Special Projects, University of Toronto Libraries

Editor's note: In early 2007, the Canada Foundation for Innovation awarded funds to two digital library projects, each with a focus on the social sciences and humanities. The projects are the Canadian Research Knowledge Network and the Synergies project. Synergies will bring more Canadian research online and the Canadian Research Knowledge Network will help fund online access to social sciences and humanities literature from around the world. Both projects will receive matching provincial funding, with additional funding provided by the participating institutions. The following article reports on the four-year Synergies project that is addressing publishing and access to journals in the social sciences and humanities.

Smaller multilingual countries face particular challenges in addressing the crisis in scholarly communication. Yet a nation's voice is often defined, and refined, through its literature, including that of scholarship and research. Fortunately the academic community has benefited from a series of recent and emerging partnerships in the production and dissemination of new knowledge. This paper describes a collaborative project addressing publishing and access to research whose contribution will include testing scalability and generalizability. During its four-year grant term, Synergies will not only develop publishing services and expertise within Canadian libraries, it will deliver production-level services to publishers and editors. Synergies is a national project whose practical focus is building technical capacity, but whose intent is to provide a platform for the potential transformation of the Canadian scholarly record.

Overview

The Synergies project jointly addresses two major components of scholarly communication: electronic access to research published in Canada and digital publishing services. Synergies will develop a distributed national network for production, storage, and access to digital knowledge. Formats will include peer-reviewed journal articles, data sets, theses, conference proceedings, scholarly books, and gray literature. Leveraging the dual foundations of Érudit and the Open Journal Systems (OJS), Synergies has an initial focus on social sciences and humanities serials. The 21-university consortium is led by the Université de Montréal and five regional lead institutions.[1]

SYNERGIES LEADING REGIONAL PARTNERS

Québec: Érudit
Érudit, the Québec node of Synergies, is a not-for-profit organization with a mission to produce and disseminate both backfiles and current issues of scholarly journals. Founded in 1998, Érudit is an inter-institutional consortium composed of the Université de Montréal, Université Laval, and the Université du Québec à Montréal. Services offered include:

- digital publishing of current issues in XML, PDF, and XHTML formats;
- management of institutional and individual subscriptions;
- digitization of backfiles in XML and PDF formats;
- preparation of the articles' descriptive data and delivery to bibliographical databases.

Érudit already offers over 30,000 articles in 46 journals in the sciences, social sciences, and humanities. Thanks to funding from the Québec government, digital publishing of the journals is done to XML standards using a software suite developed by Érudit, which automatically handles 90% of the editorial treatment of articles. This ensures a high quality of editorial production that conforms to international norms at low cost. Agreements between Érudit and other providers permit access to a distributed collection through one or the other of the portals. For example, the journals of both the Persée platform (http://www.persee.fr/) and the Press of the National Research Council of Canada (http://pubs.nrc-cnrc.gc.ca/) are available through the Érudit platform. Moreover, the Érudit data model, under open source license, is used by five journal platforms, both private and public, which group together over 200,000 learned journal articles in Europe and in North America.

As part of the Synergies project, Érudit will not only further develop its journals-production capabilities but also add modules for data sets and monographs. More than 95% of the content in Érudit is open access. Érudit receives a monthly average of 300,000 visits and 1.2 million documents (page views) are consulted per month. Érudit journals are indexed by sources including Google Scholar, PubMed, Repère, Francis, OCLC, Cambridge Scientific Abstract, Chemical Abstracts Service, Elsevier, National Inquiry Services Center, ProQuest, Philosophy Document Center, and Nines. Érudit is LOCKSS-compliant.

British Columbia: Public Knowledge Project
The British Columbia node of Synergies provides support for journals in several ways. The Public Knowledge Project (PKP)—a partnership of the University of British Columbia and Simon Fraser University's Library and

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Canadian Centre for Studies in Publishing—manages ongoing development and support of three, key, open source software components—Open Journal Systems, Open Conference Systems (OCS), and the OAI-MHP–compliant metadata harvester—that will be used extensively by the other Synergies nodes. Simon Fraser University Library will coordinate these activities, in addition to supporting other academic digitization and repository projects.

Open Journal Systems (OJS) was originally developed at the University of British Columbia under the leadership of John Willinsky. In seven years, OJS has emerged as the world's leading open source journal publishing system and was recently recognized by SPARC as a Leading Edge Project. Over 1,000 not-for-profit, commercial, and open access journals use OJS in a variety of settings, ranging from single silo journals to national scholarly publishing portals. The software is a robust, standards-based, publication-management system for scholarly journals, providing editorial workflow management, online article access, full-text searching, and interactive reading tools. The PKP community also ranges from individuals with a professional interest in the project to large organizations, such as the Instituto Brasileiro de Informação em Ciência e Tecnologia and now Synergies.

PKP has established working relationships with Google Scholar, LOCKSS, SPARC, and other organizations to ensure that its software is designed to serve the larger scholarly community. OJS has received funds from SSHRC, the Max Bell Foundation, the Soros Foundation, the International Network for the Advancement of Scientific Publishing, and the MacArthur Foundation.

Atlantic Scholarly Information Network: Integrating Érudit and OJS

The Atlantic Scholarly Information Network (ASIN), under the leadership of the University of New Brunswick Library, has begun integrating the Érudit XML-based processes, including the Érudit rich metadata description, with the journal management and delivery services of OJS. Currently, 12 journals are either being published under this combined model or have reached agreement to do so. ASIN will also investigate new models for institutional repositories, seeking to make them more relevant to researchers. As part of this initiative, the Electronic Text Centre at the University of New Brunswick is developing an automated metadata-generation application for DSpace.

Atlantic Canada's Synergies institutions will have considerable latitude in how they contribute, but this will work within a tightly knit regional framework of standardized repository and journal services and processes. Research results will be distributed through a scholarly communication module of the ASIN portal. Guided by a regional journal advisory committee, Atlantic Canada will be providing a series of publishing services for back and current issues to journal editors. These will range from hosting an OJS instance at their institution of choice to offering full XML article markup with HTML delivery integrated into OJS.

Prairies: Preservation

Led by the University of Calgary Library, the Prairies node of Synergies will be responsible for developing the Synergies preservation program. Leveraging existing technologies, the intent is to establish a framework for trusted Canadian repositories. Initially, this node will focus on social sciences and humanities journals published through Synergies as the preservation test bed. Looking ahead, the infrastructure can be extended for institutions to store and preserve source documents, raw data, and multimedia content and material licensed through the Canadian Research Knowledge Network and other national initiatives. The Prairies node includes Athabasca University and the Universities of Saskatchewan and Winnipeg. Using the OJS software, the Prairies node will be working closely with Athabasca's International Consortium for the Advancement of Academic Publication (ICAAP).

Ontario: Scholars Portal

Ontario will be offering a centrally operated publishing service that is tightly integrated into the Ontario Council of University Libraries Scholars Portal services, yet with decentralized institutional identity and support. Four university libraries are involved in the Ontario node: University of Toronto (Ontario lead), University of Guelph, York University, and the University of Windsor. Services will be based on OJS, the Open Conference Systems, and DSpace. By seamlessly incorporating publishing services with Scholars Portal services, the Ontario Synergies partners will be able to provide more effective and a greater degree of information discovery and dissemination than would otherwise be possible. Specifically journal, conference proceedings and repository content will be integrated and/or exposed to Scholars Portal and other search services.

Scholars Portal is a resource-discovery service housing over 100 million citations and over 12 million full-text documents from all disciplines. From January 2005 to April 2007, 20 million searches were conducted and 12 million articles from 8,000 electronic journals were downloaded. Scholars Portal services are available to faculty, students, and staff in Ontario's 20 universities. Services will also include the secure archiving of published journals and conferences. We anticipate that Scholars Portal's traffic will generate additional use of Synergies-supported publications.

Synergies includes participants from the various milieux of the Canadian research community. These include faculty, journal editors, scholarly associations, directors of research centers, Canada Research Chair holders, librarians, publishers, and technical experts. Each of the leading regional partners brings different but complementary expertise:

- the Université de Montréal with Érudit's publishing and portal technology;
- Simon Fraser University Library with OJS, Open Conference Systems (OCS), metadata harvesters, and open source software development;
- the University of Toronto Libraries with its integration of OJS, OCS, and repository content into Ontario's Scholars Portal;
- the University of New Brunswick Library with its growing expertise in marrying elements of Érudit and OJS; and
- the University of Calgary Library with its focus on preservation and journals with limited circulation.

See the accompanying sidebar for a summary of the expertise, roles, and contributions of the Synergies leading regional partners.

Each regional leading institution will, in turn, collaborate with several universities. Local Synergies partners—currently 16 Canadian university libraries—will be able to choose from a variety of platforms and associated production tools to create and maintain content. The five regional nodes address different development segments of the overall project and will collectively provide expertise to develop, support, and coordinate the use of these systems by the local sites. In turn, the regional nodes will work closely with the Université de Montreal as the lead node to identify, develop, and implement appropriate standards and interoperability mechanisms to provide a consolidated central platform that will collect and present these resources in a comprehensive, seamless manner to all users.

A regional structure allows responsiveness to local publishing realities and reflects Canada's two official languages. A certain level of duplication and complementarity has been built in to promote face-to-face interaction with journal staff, other publishers, and researchers to distribute expertise nationally and to ensure content integrity and preservation. After the initial year of this four-year project, other interested institutions will be invited to join.

A wide range of tools to support the creation, distribution, and archiving of digital objects will be offered. The flexible infrastructure, while encouraging open access, also allows journal editors and publishers to structure subscription options and maintain revenue control. Any code developed during the project will be released open source. The appropriate license is currently being investigated recognizing the complexity arising from existing legacy projects, and hence licenses.

Program Description

Through a national portal, Synergies will present a consistent and powerful interface to Canadian social sciences and humanities publications. The system will offer a variety of indexing and discovery options and strive for further innovative approaches. Synergies technologies will support metadata standards that comply with the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH), such as unqualified Dublin Core, and other subject and discipline-specific metadata structures as appropriate and when they become available. Synergies will provide language-localization options, both for searching and displaying content, in English or French.

Aims of the Synergies Program

Moving Research and Scholarship Online

For many Canadian journals, online presence is restricted to aggregators such as ProQuest and EBSCO. The Social Sciences and Humanities Research Council (SSHRC) spends $2.2 million allocated to research and transfer journals to pay for quality assurance (peer review and professional editing and layout) and the creation of a public record. SSHRC support together with subscription income, in general, has been insufficient to fund the adoption of technologies that maximize the impact of scholarly communication. Complementing this support for journal publication is more recent institutional investments in centers of excellence, many of which have modest publishing programs. Even more recently, institutions have begun funding institutional repositories.

Electronic publishing models for the dissemination of scholarship present new opportunities for increasing the impact of Canadian research but lack the underpinnings that traditional print models have—preservation and permanent identification are but two key elements. Without this, concerns about the value of electronic dissemination will continue to be raised. This is in marked contrast to the social sciences and humanities traditional roles as gatekeepers, guardians, and servants of our social, historical, and cultural heritage. Synergies provides a long-term commitment to electronic publishing. The past activities of the five leading institutions attest to their commitment.

Enhancing Access to Publicly Funded Research

Several Canadian funding agencies are actively pursuing policies in support of open access to publicly funded research. The Canadian Institute of Health Research has

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recently mandated publication in an open access journal or deposit in a repository for research grants. SSHRC's "in principle" support of open access has been hampered by lack of national infrastructure.

Building Persistent Public Infrastructure
Many countries have already developed public infra-structures for disseminating research results. However, their infrastructures are often limited to only one discipline or publication genre, such as theses or journals. Synergies will be the first infrastructure to include all types of university publications and results of research.

The complex distributed environment represents a political and social achievement. The project aims to build publishing, archiving, and dissemination capacity at the 21 participating Canadian universities, and beyond. Synergies will also establish direct links with dissemination platforms such as Project Muse in the United States, Persée in France and, at the provincial level, Ontario's Scholars Portal and the Atlantic Scholarly Information Network.

Building Cross-Institutional
and Cross-Sectoral Collaboration
Effectively altering the face of scholarly publishing requires continual communication across and between institutional and sectoral divides. The Synergies grant application was successful, in large part, because of the participation of key stakeholders such as granting agencies, scholarly associations, and publishers. Stakeholders continue to be integrated into decision-making processes through national, regional, and local governance structures. Indeed, Synergies has created a much needed dialogue between participants whose previous relationships could be described as competitive or minimal. Synergies will also provide an invaluable environment for new research questions in fields such as text analysis, bibliometrics, and knowledge mobilization beyond academic circles to contribute to informed citizenship and the professional and public good.

Developing Open and Robust Innovation Practices
Transformation requires scale—both in infrastructure and diversity. The diverse approaches offered by Synergies partners will provide a solid core of experience. Not only are different technology platforms utilized, the member institutions have vastly differing histories and approaches: some have long-standing scholarly communication programs while others have yet to launch; some are situated within the library as separate cost-recovery units or integrated within library departmental structures and funded through operating budgets; some report to vice presidents of research while others report with their university presses. Service levels also vary as does focus on open access publishing.

While the initial focus is on scholarly journals in the humanities and the social sciences, the project will support a variety of publication types and all disciplines. By providing robust and persistent infrastructure, it is the intent of the Synergies project to foster experimentation in scholarly communication forms and norms.

Conclusion
Synergies bears some striking overlaps with key recommendations contained in the Ithaka report, "University Publishing in a Digital Age."[2] Among their recommendations, the authors call for a "powerful technology platform" and "shared capital investment" in order to develop online publishing capabilities. Key enablers include strategic investment, the development of online publishing capacity, scalability, appropriate organizational structures, collaboration, and the inclusion of multiple medias and formats. The project also bears some resemblance to Crow's call for publishing cooperatives.[3]

But there are also some striking differences. Key is a national scale and initial focus on social sciences and humanities journals. Synergies partnerships, while situated squarely within libraries, cross sectors. While promoting a unified Canadian corpus is an intent, the starting point is the provision of a robust technical infrastructure. This project is also deeply embedded in the public sphere and shares a commitment to exploring and furthering new business models, such as open source development and open access. Synergies is a "grand experiment"—one we hope will benefit Canada and the world for years to come.

Project URLs
Synergies: http://www.synergiescanada.org/
Érudit: http://www.erudit.org/
Public Knowledge Project: http://pkp.sfu.ca/

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[1] The Université de Montréal is both the national lead institution and the regional lead for Québec.

[2] Laura Brown, Rebecca Griffiths, Matthew Rascoff, "University Publishing in a Digital Age," Ithaka Report, July 26, 2007, http://www.ithaka.org/strategic-services/university-publishing/.

[3] Raym Crow, "Publishing Cooperatives: An Alternative for Non-Profit Publishers," *First Monday* 11, no. 9 (2006), http://www.firstmonday.org/issues/issue11_9/crow/.

> *Synergies is a national project…whose intent is to provide a platform for the potential transformation of the Canadian scholarly record.*