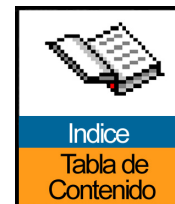


Library Consortia and Cooperation in the Digital Age*



Assunta Pisani**

Resumen

El artículo explora los temas relacionados con consorcios y cooperación bibliotecaria en el ámbito internacional, con especial énfasis en las iniciativas de Norteamérica. Se ofrece una breve historia de los esfuerzos de consorcios para desarrollar colecciones y compartir recursos en el mundo de las publicaciones impresas en papel, y se discuten los nuevos parámetros, ventajas y problemas de los consorcios en la actualidad. Posteriormente se aborda la cuestión de cómo las nuevas iniciativas, más allá de los consorcios nacionales y regionales, son los métodos verdaderamente efectivos para la cooperación en el mundo digital. Estas iniciativas ayudan a las bibliotecas a coordinar proyectos, compartir información, desarrollar nuevos programas y superar nuevos retos. (IGR)

Palabras clave: cooperación bibliotecaria, consorcios bibliotecarios, bibliotecas digitales, desarrollo de colecciones. (IGR)

Abstract

This paper explores issues related to library consortia and cooperation in an international context, with a particular focus on North American initiatives. It provides a cursory history of consortial efforts in collection development and resource sharing in the traditional print-on-paper world and discusses the new parameters, advantages and problems of consortia today. It further discusses how the new, extra-consortial, national and regional initiatives for coordinating projects, sharing information about best practices, that help libraries to deliver new programs and meet new challenges are the truly effective methods for cooperating in the digital arena.

Keywords: librarian cooperation, library consortia, digital libraries, collections development. (IGR)

The willingness and commitment to cooperate in collection development, management, cataloging and in the delivery of services to readers have marked the course of North American Library history from the beginning. This is the commonly held view. Timid, vague attempts were made back in 1850 with regional efforts in cataloging and classification and were strengthened immediately following the Civil War with the founding of the American Library Association in 1876.¹ This tendency prevailed in spite of the private nature of the funding libraries received, and even in spite of the competitive nature of such institutions. But not all library historians agree with this view. Eldred Smith maintains that libraries have always followed an independent course in the

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¹ David C. Weber, "A Century of Cooperative Programs Among Academic Libraries," *College and Research Libraries*, 37, 3, May 1976, p. 205.

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development of their research resources and that they have always been in competition among themselves.² Still others maintain that libraries in North America have been always been subject to two contradictory forces: autonomy and interdependence.³ Cooperation in the establishment and promotion of standards for cataloging, classification and type of services rendered may have been an easier goal to achieve than cooperation in the building of collections for resource sharing purposes. Cooperative collection development has always encountered obstacles, many of them insurmountable. Nevertheless, efforts in both arenas have been numerous and constant, either informally or formally through consortia.

In the area of cataloguing, it is clear that the single most successful consortial arrangement over the last

four decades has been OCLC. Founded in 1967 by university presidents with the intent "to share library resources and reduce library costs", OCLC introduced an online, shared cataloging system that is used still today by libraries around the world. Membership in OCLC has continued to grow steadily since its establishment and today includes 41,000 libraries in 82 countries

and territories. OCLC has retained its vitality and relevance by introducing many services beyond shared cataloging along the way. The Interlibrary Loan service, introduced in 1979 is widely used by thousands of libraries all over the world. The FirstSearch service introduced much later (1991) as a reference tool is used today by almost 20,000 libraries. The OCLC stated vision is to be "the leading global library cooperative, helping libraries serve people by providing economical access to knowledge through innovation and collaboration".⁴ Indeed, the wide-ranging services offered by OCLC make it the most encompassing, and most wide-reaching consortium ever. An analysis of the reasons for its success would tell a lot about why other efforts failed. But the reason may very simple: OCLC focused from the beginning on those library functions and services that can be effectively shared and is built on a model of financial reward to contributing libraries, with larger fees for libraries that do not.

As another bibliographic utility created for cooperative purposes, the Research Libraries Group's (RLIN) enjoyed great success for a number of decades and is still quite important today, especially for its capabilities to handle non-Roman scripts. But the initial impetus behind RLIN was the desire to share research resources and the recognition that a union catalog of holdings would be a fundamental instrument to achieve that goal. RLG's valiant efforts at cooperation in collection development ultimately did not yield the successes it had hoped for. These initiatives launched by RLG, the array of forces that influenced their course and the many difficulties encountered, leading to their



² Eldred Smith, "Politics of Cooperation in a Networking Era," *Canadian Library Journal*, v.37, no.5, October 1980, p. 309.

³ David H. Stam, "Collaborative Collection Development: Progress, Problems, and Potential," *IFLA Journal* XII, no.1, 1986, p. 9.

⁴ <http://www.oclc.org/about/>



ultimate failure, possibly constitute the more interesting terrain to explore as we seek to identify elements for success and failure in consortial ventures.

Models for cooperation in collection development have been many and varied. Consortia have obviously always been more abundant in periods of crisis than in periods of affluence. The Wall Street Crash in 1929 could have provided no greater incentive for libraries to band together in order to secure and make available the resources needed for study and research. The forties witness the creation of two major initiatives: the Farmington Plan and the Center for Research Libraries, both aiming to approaching collection building in a coordinated way.

The Farmington Plan, whose establishment is often explained as the result of difficulties in gaining access to European research resources experienced during World War II, represented a resolution on the part of major research libraries (Harvard and the Library of Congress among them) that at least one copy of every book useful for research purposes from any part of the world should be available on American soil. The Farmington Plan lasted 30 years; its demise in 1972 has been attributed to a number of factors among which the most significant was probably the considerable growth in library acquisition budgets in the affluent period of the mid-to late sixties.

But the crisis of the mid-seventies, brought about by the exponential growth in number of publications while library budgets could not keep pace with the phenomenon, and the shrinking of federal funds available for research programs, led quickly to the establishment of a similar model of library cooperation in acquisition with the creation of R.J.G. Once again a small group of large research libraries got together



to divvy up the world of knowledge and to assign responsibility to member libraries for acquiring materials in certain subjects. Unlike the Farmington Plan, which assigned responsibility by country of publication, RLG established a subject division of responsibility. From the five original members at its founding, RLG quickly grew to more than 30 members. The program became rather complex and difficult to manage; and the benefits, especially for large libraries with larger acquisitions budgets and programs, dwindled. Nearly three decades later the elaborate committee structure involving subject specialists from member institutions was eliminated and RLG abandoned formal consortial efforts to coordinate collection building, retaining the task of hosting the union catalogue of participating institutions. As libraries moved increasingly to setting up their own online systems, it eventually abandoned that too as the common tool for cataloging. RLG today has refocused its attention towards several projects

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involving special collections materials (e.g., Cultural Materials Alliance), coordinating an interlibrary loan service for its members, maintaining the tool for cataloging of materials in non-Roman script, and cooperating with other organizations, such as OCLC and the Digital Library Federation.

Serious doubts were being cast on national cooperative acquisitions efforts in North America. Yet, paradoxically, while the number of publications continued to grow and prices of materials continued to increase at a pace well beyond the rate of budget growth, the notion of access vs. ownership was becoming increasingly a household concept, especially as university administrators began to find libraries "bottomless pits". The incongruous nature of the notion to rely on access rather than ownership while, at the same time, each library acquires less and less, was noted by

some library leaders. But the notion prevailed, as it does to this day. This was happening in the world of print resources in which a physical copy must exist somewhere to be made accessible when needed. It is interesting to note how the access vs. ownership dilemma, which made little sense in the print-on-paper world, would soon become a reality imposed upon libraries by the new paradigms in place with the digital world.

Today we have a multitude of consortial arrangements, but the goals of these consortia are forcibly quite different in nature from those that guided cooperative arrangements in the print world.⁵ Information produced electronically, in an electronically connected world, can be easily "shared" with other institutions, if only publishers will allow it. But fear for economic survival has induced publishers to impose restrictions on sharing that have practically eliminated the "fair use" doctrine by which libraries had operated with print publications. Today each library needing to access information must pay for that access. Moreover, in most cases, libraries do not become owners of content, but may only lease it. Some publishers offer options to libraries to acquire the right to access material "in perpetuity", with the promise that they will own the actual files if the publisher goes out of business or otherwise ends its activity as provider. Thus, the long aspired to resource sharing is no longer an option for libraries. Consortia today are created as "buying clubs" where libraries get together in order to negotiate better terms at a lower cost for each institution. It is clear that the larger the consortium and the larger



⁵ See <http://www.lis.uiuc.edu/~b-sloan/share.html> for examples of consortia including the Library Consortia Documents Online, a collection of about 100 Web-accessible primary source documents dealing with the governance and administration of library consortia and cooperatives. See also <http://www.lita.org/ital/ital1803.html> a discussion of library consortia in the world in the Special (September 1999) issue of *Information Technology and Libraries* "Library Consortia Around the World" John F. Helmer, Guest Editor. For comments on consortia in the UK, see <http://www.ucl.ac.uk/scholarly-communication/articles/bollelettino.htm> "New Wine in a New Bottle: Purchasing by Library Consortia in the United Kingdom" by Frederick J. Friend; See also http://www.sim.vuw.ac.nz/staffandresearch/homepages/dornerd/Renaissance_of_Libr_Consortia.pdf

the package being negotiated, the greater the chances to obtain better terms for that package.

Publishers and vendors may well find dealing with consortia a more appealing way of doing business than with single institutions. The advantages of expanding the reach of their market to institutions that would not have been able to afford their product alone are appealing. Publishers are also able to increase exposure of the more specialized or weaker titles in their repertoire which would not normally be purchased, by bundling them with titles that are in higher demand. They make more money and require fewer staff resources in negotiating for one big package rather than for a number of small ones.

A wide variety of consortia exist today, each being shaped by a number of cultural, political and financial needs and factors. These range from rather simple to very complex organizations. Many consortia are wholly or in part government sponsored or even government mandated, while others are voluntary associations of libraries. Some were formed expressly to engage in collaborative electronic resource acquisition, while others were formed for a variety of cooperative objectives in the print-on-paper world and now focus their attention on digital resource acquisition or leasing (e.g., CCI-The Committee on Institutional Cooperation; CAUL-The Council Of Australian University Librarians; and UKB--the academic



libraries in the Netherlands, the Royal Library, and the library of the Royal Netherlands Academy of Arts and Sciences).

There are many examples of statewide consortia such as OhioLINK, VIVA (The Virtual Library of Virginia), CCI, Louisiana Library Network, and TexShare, and a number of national or regional consortia such as CAUL in Australia, UKB in the Netherlands, GBV in Germany, CILEA and CIB in Italy.⁶ Some of these have centralized budgets for acquisition as well as for travel and training of its members. Some have a large number of members, both private and public. VIVA for example, has a membership of 39 state-supported and 28 private institutions; while CIC is a consortium of twelve universities involved in cooperative activities since 1958. In some instances, as with the CIL, consortia expand their range of

activities to include many areas of university life, from minority recruitment and retention to high performance computing collaboration. The CIL Virtual Electronic Library serves a population of 500,000 students and 35,000 faculty and research staff. The activities it supports range from resource sharing, interlibrary loan/document delivery, preservation, union lists/shared online catalogues, and electronic content licensing.

Consortial work may be carried out either by centralized staff (of the nine CIL staff, three devote their efforts to library cooperation), or mostly in a distributed

⁶ CILEA is a consortium of universities in Lombardy (Italy) and CIB is a consortium of libraries in the Piedmont region.

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fashion. Unlike CIC or VIVA, NERL (Northeast Research Libraries Consortium) is a volunteer organization and relies on its members for staffing. It does not have as formal or elaborate a structure as the CIC though it represents a large number of research libraries. Its focus is to allow members to share common objectives of access and cost-containment, joint licensing and possible joint deployment of expensive electronic materials. Members share information about management and budgeting for electronic resources.⁷

Among very active foreign consortia, there is CAUL, a forum where library directors come together and cooperate or coordinate "efforts ranging from library policy and scholarly communication to management issues and library statistics. CAUL coordinates a database access program whose primary aim has been to provide the Australian academic community with access to a range of databases in a cost-efficient manner".⁸ The UKB and the GBV were pioneers in articulating licensing principles in Europe.

Consortial efforts often pose some challenges for individual institutions. One of these is the move from local and autonomous decision-making and selectivity in shaping a library's collection to a consensus-driven process where a multiplicity of needs and interests must be accommodated. Where universities have been competing, they need to learn to cooperate more closely and compromise, accepting to take in materials they would not have otherwise selected for their libraries.⁹ On the other hand, the inability of

institutions to sustain on their own the exorbitant price increases, especially in serials; the elimination of geographical boundaries which electronic resources make possible, and the many mergers of small publishers into large conglomerates, mandate that libraries themselves organize into larger negotiating entities with greater leverage. VIVA, for example, realized \$5 million in financial benefits during the first year only (1994) by purchasing resources as a consortium.

For very specialized resources that are of interest to relatively few scientists it may make sense in some smaller countries to move beyond the national consortium idea and to think in international terms. As Elmar Mittler recently stated, institutions should move the thinking about access to electronic resources from providing access to local users to providing access to users in general.¹⁰

Another observed challenge, as the VIVA experience bears out, is that the work of consortia does not end with the signing of a licensing agreement but is more cyclical in nature. The expectation that a consortium would purchase a resource, train its librarians, and move on to the next resource has shown that the product's usage data need analysis as renewals are contemplated; that technical issues never go away; and that communicating with colleagues and with the vendor to renegotiate or to improve the product is a never ending process.

⁷ From a report on the workshop "New Collections: New Marketplace Relationships:" held at the 64th IFLA General Conference. <http://www.arl.org/stats/ifla83.html>

⁸ Ibid.

⁹ Ibid.

¹⁰ Ibid.

Consortia need to be well-focused, pragmatic, and agile organizations in order to be effective. National, government-supported consortia tend to lose their agility and focus as they become large and complex organizations that must protect some form of democratic process. Yet, the potential for many institutions to benefit from gaining free access to information they would otherwise not have, or to get it at a lower, more affordable, cost is a clearly an important factor in consortium participation. Even consortia of privately funded institutions can become unwieldy. It is important to monitor that the decision-making process not be hampered to the extent that it misses opportunities, or that interests become too heterogeneous to be worthwhile. Still, there are generic databases that small and large, public or private institutions alike want to be able to deliver to the desktop of their clientele. In these cases even mammoth consortia are well worth considering (e.g., the case for Academic Universe and SOLINET). Libraries may belong to many consortia, depending on the opportunities each makes available.

But there are larger troubling issues created by the growing number of "buying clubs" which have been admirably outlined by Landsman and Van Reenen¹¹ and by Kenneth Frazier as they warn us about the dangers of the "Big Deal".¹² Both Frazier and the authors of *Consortia vs. Reform* point to the inevitable conflict or incongruity that is created through consortial acquisitions whereby groups of libraries strive to get more titles less expensively than would each library

by going it alone. This effort leads consortia to sign on to large packages that either bundle titles or forbid any (or cap) cancellations of previously held subscriptions. Such actions have serious impact on the small publishers who have no large packages to offer. By tying an increasing percentage of library materials resources to the large packages that severely limit cancellations, libraries are subsequently forced to cancel subscriptions of single titles with smaller publishers, frequently of a non-profit nature. Thus, the commitment of these same libraries to promote the success of smaller not-for-profit publishers, and the initiatives intended to reform the current unsustainable model of scholarly communication production and delivery, are rendered futile, because consortia deals help the big publishers, not the small ones. We should be keenly aware of these dangers.



¹¹ Margaret Landesman and Johann Van Reenen, *Consortia vs. Reform: Creating Congruence*.

<http://www.press.umich.edu/jep/06-02/landesman.html>

¹² Kenneth Frazier, "The Librarians' Dilemma: Contemplating the Costs of the Big Deal," *D-Lib Magazine*, March 2001.

<http://www.dlib.org/dlib/march01/frazier/03frazier.html>

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Just recently, as part of an intense exchange regarding terms being negotiated between a consortium and two large publishers, one of the consortium members commented on the status of the negotiations in a way that exquisitely summarizes the current dangers of consortia deals and the challenges consortia face. Following is part of that message:

"[We have] never, I think, looked at [ourselves] as a coalition, but rather only as a way for each of us to get somewhat better buying arrangements than we might get if we go it alone. We have not had much of a sense of solidarity, and perhaps that is inevitable... My real concern... is that relationships between libraries and vendor / publishers are now in a very fluid state -but those relationships will become conventionalized and will soon be set in concrete. That's how the academy and scholarly communications work -primarily on the basis of precedent. The relationships we create now, what we accept and what we oppose, will have a major effect on how publishers and libraries relate to each other in the digital age. The publishers are now making it up as they go along, just like we are. If we accept conventions now that are detrimental to us, because we feel we can manage them temporarily, we will be locking ourselves into "standard" relationships and procedures for a longer term that could in their cumulative effect end up impeding scholarly information exchange".¹³

The work of ICOLC, the International Coalition of Library Consortia, has been important in promoting some

general principles in the interest of effective scholarly communication. A document published by ICOLC asks

- That prices for electronic products be lower than their printed counterparts as it is less expensive to produce information electronically;
- That libraries should have the option of buying electronic only;
- That pricing should not be excessive as publishers experiment with new products;
- Libraries should not be called upon to pay for the entire cost of developing new products;
- That fair use should be allowed in the electronic environment; and
- That archiving of electronic resources should be addressed through license negotiations.¹⁴

Some progress has been made as publishers seem to be demonstrating a willingness to meet the first two requests, but libraries are still being asked exorbitant prices to finance experiments, and the principle of fair use has vanished. Moreover, in only isolated instances, is the libraries' right to archive the electronic content they purchase being respected.

Cooperation in the creation of digital content is the second major area for which libraries have tried to organize. The accomplishments of the Digital Library Federation have been significant in this respect. The DLF has encouraged libraries to come together with the goals to help reach a common understanding of the issues of digital content creation, the exchange information, and agree on common best practices.

¹³Ross Atkinson, electronic message to consortium members, 24 September 2002.

¹⁴*Statement of Current Perspective and Preferred Practices for the Selection and Purchase of Electronic Information*, March 1998. <http://www.library.yale.edu/consortia/statement.html>

Through the meetings and forums the DLF has sponsored, as well as through studies and surveys it has commissioned, libraries have been communicating their projects, ideas, and models for success as well as pitfalls to avoid.

Concerns with sustainability and scalability have dominated both formal and informal discussions of DLF members. For digitization programs to be sustainable, a study commissioned by the DLF concluded, they

- Must be integrated into the fabric of library services;
- Must be focused primarily on achieving mission-related objectives;
- Should be funded from predictable streams of allocation, be they external or internal, and not rely on opportunistic funding;
- Should plan for the long-term maintenance of digital assets in ways similar to the planning for preservation and access of other library collection items.¹⁵

To be scalable, means just how much will need to be digitized within a given collection to create that "critical mass" that will make the group of materials contextually meaningful for research in a particular field or topic. A contextually meaningful collection will provide a coherent corpus of information large enough to allow "meaningful queries through curious juxtapositions and comparisons of phenomena".¹⁶ It provides a context for interpretation. This is considerably different from the analog world where single items too can be meaningful, because in the digital world enough related items that are up in a commonly searchable database

produce a richer collection that its analog equivalents. The materials are not just available in digital format on researchers' desktops, but they have new functionality, allow for new purposes, and ultimately create new audiences. What constitutes a critical mass will be a judgment call and will be mostly limited by the resources available to do enough to matter, but scalability also refers to whether enough is possible with available resources; whether the size of a project, necessarily delimited by the funding available to complete it, will be large or contextually significant enough to be useful.

One of the most significant achievements of the DLF has been in aiding member institutions to identify and articulate policies for selection for digitization, to produce guidelines, and to document best practices in place. As a result, a significant volume of literature written on both the subject of selection for digitization and on the management of conversion projects has been made available on the Web.

There are some investigations whose results are proving to be quite useful to other institutions. Harvard and Michigan, for example, posit the following questions:

- Does the material have sufficient intellectual value to warrant costs?
- Can it withstand the scanning process?
- Will digitization increase use?
- Will the potential to link to other digitized sources create a deeper intellectual resource?
- Will the materials be easier to use?

¹⁵ Abby Smith, Strategies for Building Digitized Collections. CLIR/DLF: September, 2001.

<http://www.clir.org/pubs/reports/pub101/contents.html>

¹⁶ Ibid.

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- Is it useful in the short term for instruction and in the long term for research?
- Does it match campus programmatic priorities and library collecting interests?
- Who is the potential audience and are they likely to use the digital?
- Does it meaningfully advance the development of a collection?
- What metadata should be created to enhance use?

Answers to these questions are fundamental in informing choices related to scanning technique, navigational tools, networking potential, preservation strategy, and user support.

There has been much talk about coordinated collection building of digital formats, but significant results in this arena remain to be seen. Given the resources necessary to create digital collections and to build the infrastructure that allows access to them, the only

way to build scalable collections is through some cooperative effort. But for all the talk about shared initiatives that will provide critical masses in particular areas, institutions have been deciding largely on their own what to digitize. As Abby Smith concludes, selection is not truly collaborative; it can be more properly characterized as "harmonized thematically". Institutions usually make selections based on particular institutional needs or faculty research interests rather than established by a community of libraries.¹⁷

Sharing of digitized content among institutions, on the other hand, is where cooperation has made extraordinary advances. The libraries' willingness to provide free access to their digitized resources whenever intellectual property rights allow it, and the ability to access these digitized materials, from any part of the globe have been the single most important step towards library cooperation in the past few years.

¹⁷ Ibid.



Preoccupation with preservation of both the born digital and digital surrogates has also provided fertile ground for collaboration. There has been intensified activity in drafting proposals to funding agencies and developing protocols and strategies for preservation. Libraries realize that efforts must be in cooperation with other libraries as well as with the owners of the intellectual property rights, and a variety of experiments have been launched to test the feasibility of coordinated preservation using a number of approaches.

Several projects undertook to explore what it will take to insure the permanence of scholarly journals published electronically and to reach agreements on the creation of archives that reconcile intellectual property issues with issues of continuous access. The Andrew Mellow Foundation was interested in having these questions investigated, thus funded many of the projects I describe briefly here.

Stanford University LOCKSS Project

A cooperative (distributed) digital archiving system that is designed to allow librarians to take custody of the electronic journal content they acquire and to preserve it as they would in the print-on-paper world, using their own computers and network connections. The model creates low-cost, persistent digital "caches" of e-journal content housed locally at institutions. Accuracy and completeness of caches is assured through a peer-to-peer polling system. The publisher grants permission for the creation of such caches to libraries that have the right, through subscription, to access that content. The publishers allow the caches

pro-actively to crawl the web and collect relevant new content. Unlike normal caches they are never flushed. The caches cooperate to detect and repair any damage automatically, without human intervention. The content can be in any format delivered via HTTP, provided that it does not change once published. The LOCKSS model relies on inter-institutional cooperation, following the principle of interlibrary loan.¹⁸

Three projects which explored archiving of e-journal content from specific publishers were undertaken at Harvard, Yale, and the University of Pennsylvania.

The Harvard University Study of Electronic Journal Archiving

The Harvard project looked at content selection, publisher relationship, access and technical issues. A mix of titles was selected representing different challenges stemming from different business models, technical expertise, and institutional roles. The plan was to seek at least one arrangement with a for-profit publisher with a large number of articles to test the scaling of the archive, and another with a scholarly society in order to develop archive-publisher relationship in both the commercial and not-for-profit sectors. The discussion with publishers planned to cover not only negotiating respective rights and responsibilities of publishers and archiving institutions but also whether a long-term economic model for sharing costs might be forged. Further it addressed access issues: who will be able to access the archived materials, and under what circumstances? Many technical aspects were also investigated, such as format investigation,

¹⁸ Vicky Reich, draft article submitted for publication, *Lots of Copies Keep Stuff Safe: As a Cooperative Archiving Solution for e-Journals*. (<http://lockss.stanford.edu>).

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on-going validation or auditing, bibliographic control, naming, access management, storage strategy, and output facilities. Moreover, Harvard commissioned a study on the feasibility of developing a common archival article DTD (document type description) which includes a tentative draft proposal for the technical specifications of a submission information package (SIP) that defines acceptable data formats, file naming conventions, bibliographic and technical metadata. This study involved approaching ten publishers, commercial and not-for-profit, who all readily agreed to participate. Among the publishers who participated were Wiley, Elsevier, University of Chicago Press and several society publishers.¹⁹

The University of Pennsylvania experiment explored similar issues, but focused on academic publishers (Oxford University Press and Cambridge University Press in particular).

The Yale experiment involved negotiations with one large commercial publisher, Elsevier, that would allow Yale to archive electronic content of Elsevier journals. There was reportedly much useful discussion leading to the articulation of and agreement on the appropriate licensing terms required for this initiative, though the project may not have gone much further than data gathering. At the time of this writing, in fact, Elsevier announced its intention to partner with the National Library of the Netherlands (*Koninklijke Bibliotheek*), to establish "the first official digital archive for Elsevier Science journals".²⁰ The library will receive digital copies of all Elsevier journals made available on the

ScienceDirect web platform. New journals, as created, are to be added to the archive. Older years of existing journals are to be digitized and deposited with the kb. On the occasion of the announcement, Karen Hunter, senior Vice President of Elsevier, commented "It is essential that we will be able to guarantee both authors and researchers using the journals that the electronic files will be permanently available... As we move toward journals being available only in electronic form and being held centrally on publishers' computers, the public has the right to be assured that, should a publisher go out of business, these files will not be lost".²¹ The Library has assumed the responsibility for migrating content and associated software as formats, associated retrieval techniques and storage media change over time. This is indeed a milestone decision on the part of Elsevier.

Two other projects took a subject approach to the archiving question:

The Cornell University Project Harvest proposed to develop a plan for a repository of electronic journals in the field of agriculture, and the **New York Public Library** for performing arts journals. Both projects set out to initiate a dialogue with a number of discipline-specific publishers to "identify the elements of a compelling preservation strategy and negotiate a mutually acceptable approach to archiving." Both projects also included work on technical design issues (ingest, storage, management, migration, and access) associated with e-journal repositories.²²

¹⁹ Harvard University, Proposal for a Study of Electronic Journal Archiving <http://www.diglib.org/preserve/ejppv.htm>

²⁰ http://www.kb.nl/kb/resources/frameset_nieuws-en.html

²¹ Ibid.

²² Cornell University, *Project Harvest: Developing a Repository for E-Journals* <http://www.diglib.org/preserve/ejppv.htm>



Exploring somewhat new ground was the object of the MIT proposal to plan for an archive of dynamic e-journals, a specific subset of the new scholarly literature, and a medium that, according to MIT, will likely constitute the next generation of e-journal publishing. Dynamic e-journals are scholarly web sites which aim to share discoveries and insights, but do not feel bound by the conventions of "issues" and "articles" that have become standard in print. MIT felt it was important to learn to capture for future scholars the dynamic e-journals currently published as they represent the leading edge of a broadrange of dynamic content.²³

In addition to the projects I have just described, several major initiatives to explore the technical issues involved in creating large repositories of permanently archived electronic content have been launched or completed recently. One such initiative was the RLG-OCLC sponsored study to establish attributes of a digital repository for research organizations, building on and incorporating the emerging international standard of the Reference Model for an Open Archival Information System (OASIS). The document produced describes the characteristics and responsibilities of trusted, reliable, sustainable digital repositories for large-scale heterogeneous collections held by cultural

organizations. The study further articulated a framework of attributes broad enough to accommodate different situations, architectures, and institutional responsibilities, while providing a basis for the expectations of a trusted repository.²⁴ Its recommendations are that all trusted digital repositories must



- Accept responsibility for the long-term maintenance of digital resources on behalf of its depositors and for the benefit of current and future users;
- Have an organizational system that supports not only long-term viability of the repository, but also the digital information for which it has responsibility;
- Design its system(s) in accordance with commonly accepted conventions and standards to ensure the ongoing management, access, and security of materials deposited within it;
- Establish methodologies for system evaluation that meet community expectations of trustworthiness;
- Be depended upon to carry out its long-term responsibilities to depositors and users openly and explicitly;
- Have policies, practices, and performance that can be audited and measured.²⁵

²³ MIT, Planning for an Archive of Dynamic Journals at MIT. <http://www.diglib.org/preserve/ejppv.htm>
²⁴ *Trusted Digital Repositories: Attributes and Responsibilities. An RLG-OCLC Report* (May 2002).
²⁵ *Ibid.*

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Requirements for such repositories significantly expand the parameters and scope of library cooperation, and it is reassuring to see that effort is being made in this direction. Some not-for-profit institutions have proposed to serve as national repositories: OCLC is among these. Archiving and preservation services, are among the major strategic directions OCLC has articulated in its plan to create a digital archive that "will provide the text and images of photographs, drawings, books, journals, web sites, museum artifacts and more -- almost anything that needs to be preserved".²⁶ Based on cooperation, this archive aims to "accommodate changes in technologies and formats and provide access to electronic content using industry standards, both now and in the future".²⁷

Yet another area in which significant progress has been made is in the creation of a registry of digital objects. A registry would record information about digital surrogates, whether in existence or about to be created, for books and journals in all languages and on all topics. A registry would allow institutions to locate information and potentially access digitized books and journals; avoid redundant digitization effort; co-ordinate digitization efforts; co-ordinate print deposit / preservation effort; support economical institution-level collection development decisions vs. acquisition / disposition of printed materials; support a range of end-user services; and help identify collaborative opportunities. At a meeting of OCLC representatives with members of the DLF last November, it was agreed that OCLC would take on this responsibility.²⁸

The Coalition for Networked Information (CNI) has been working closely with the DLF, ICOLC, and other organizations on related issues. CNI is an organization dedicated to supporting the "transformative promise of networked information technology for the advancement of scholarly communication and the enrichment of intellectual productivity".²⁹ Some 200 institutions representing higher education, publishing, network and telecommunications, information technology, and libraries and library organizations make up the CNI membership. CNI's programs revolve around the three overarching themes of developing and managing networked information content; transforming organizations, professions, and individuals; and building technology, standards, and infrastructure. CNI has launched or participated in projects that seek to enhance cooperation, such as sharing knowledge about architectures and standards for networked information; improving scholarly communication; and studying the economics of networked information.³⁰

In conclusion, what can be said about where we are today with consortial arrangements and other cooperative ventures? Where should we be heading? The nature of cooperation among libraries has been altered radically with the advent of the digital, and we can only expect that this alteration will continue to evolve in a direction that is substantially different from the one we had come to know and appreciate in the traditional print world. We can no longer share or lend what we license or own because a third party claims intellectual property rights and will not allow sharing without a fee. The "fair use" principle, which

²⁶ <http://www.oclc.org/strategy/>

²⁷ Ibid.

²⁸ <http://www.diglib.org/collections/reg/regdlfoclcnote.htm>

²⁹ <http://www.cni.org/>

³⁰ Ibid.

had allowed libraries and cultural institutions to extend reasonable access to the one copy owned (be it through the one-simultaneous-user concept of lending the actual copy or the photocopying of pieces of the work for and by individual researchers), is no longer accepted in the digital world. We have moved from a model of libraries coordinating acquisitions programs, thus truly sharing resources with one another, to one of gathering in consortial arrangements of all types in order to leverage the best deal possible. Everybody must pay for what it wishes to own or have access to. More disturbingly, every library ends up buying the same products through consortia, leaving ever diminishing funds to buy the less popular or unique materials.

We can, on the other hand, truly share the out-of-copyright materials we have digitized, using our own resources or resources granted by a foundation. But the costs of digitizing all the materials that would qualify under these terms are extraordinary and cannot be borne by single institutions and without cooperative efforts to coordinate that which is being digitized or without possibly sharing in some of the costs of that effort. While many institutions make their digitized content available to the world for free, others have opted to charge for access, from relatively modest fees (Project Muse, JSTOR) to significantly steep ones (EEBO). There is still much work ahead: we must seek effective ways to coordinate our digitization projects. We must also move away from projects undertaken for opportunistic reasons towards reasoned digitization programs in libraries. The infrastructure necessary to move from project to program exists today in only a handful of libraries; most others are still struggling to identify the financing necessary for that base-funded infrastructure. Though very interested in building digital collections they do so only if special

funding comes their way. As more institutions move towards programmatic approaches to large-scale digitization, better-coordinated efforts in content selection are surely to occur. It is inevitable and mandatory that we move in this direction. Standards and best practices have been articulated and communicated thanks to the work of the DLF in particular. Institutions are no longer working in a vacuum and documentation on state-of-the-art approaches and solutions is readily available to them.



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Public and private funding agencies should begin moving special projects aimed at experimenting with various approaches and increasingly encourage cooperative undertakings that will digitize critical masses of content located at various institutions.

The locus of responsibility for long-term preservation of digital objects (whether commercially created or not) also needs to be settled. Many individual institutions are experimenting with "dark caves" or digital repositories capable of housing and managing the necessary and growing number of terabytes of content. Consortial organizations are seeking to take on the role of repositories, of cooperative centralized storage, and there also exist proposals for distributed but cooperative storage strategies. It is crucial that some agreement be reached in this arena soon. The specifications for archiving and trusted repositories are in place and there is sufficient confidence derived from recent intense experimentation that we have reached the point where archiving is not only feasible but also possibly sustainable and scalable -we should do it. There is also the question of whether the owners of intellectual property rights will concede to having cultural institutions serve as the repositories for their content rather than doing it themselves. Considerable progress has been made by publishers. Elsevier's

recent decision represents a major turning point in this debate, and there was progress made through the Harvard, Cornell, and Penn initiatives. More publishers are surely to follow suit.

Finally, we find ourselves at an exciting junction: we have learned so much only in the last couple of years about the tasks at hand and the recommended ways of going about them. Libraries have come to realize that they play a central role in the way the future of scholarly communication is shaped. We must be cautious about the terms we accept because our decisions today will influence the shape it will take. There is serious need for concentration and planning on what printed content we choose to digitize, and what digital content we are ultimately able to preserve for future generations of students and scholars. We need further to examine carefully the options we have regarding transitioning to the digital; make informed decisions about the various media for delivering content, and about the extent to which we aid the transition by moving away from the print on paper medium. These are enormous tasks facing librarians, but we know we can be instrumental in shaping the future of scholarship through continued cooperation. We should not shrink from our tasks and should not undertake them alone. 