



Smart LibrariesTM

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Smarter Libraries Through Technology:

Growing Cooperation and Consolidation

By Marshall Breeding

We can see a definite trend of consolidation among the organizations that create technology products for libraries. Through a long series of mergers and acquisitions, the industry has gradually transformed from being fractured in a way that pits relatively small companies against each other with overlapping products and limited revenue opportunities to one that is highly consolidated with a smaller number of large companies dominating the scene. This consolidation has resulted in a fewer number of choices for libraries, but the economic realities seem to press toward gaining efficiencies gained through combining organizations.

This pattern isn't seen only among library vendors, it's a global phenomenon.

The cooperative organizations that bring groups of libraries together for automation and other services show the same pattern. In this issue of *Smart Libraries Newsletter*, we discuss several examples of library organizations that have merged together and in some cases are also consolidating multiple library automation implementations into a single large-scale system. I expect to see this strategy repeated many times over in the coming years.

From the earliest times of computerization of library operations, sharing systems has been a routine strategy for lowering costs and improving services. Municipal and county-wide library organizations naturally share a system among their many separate facilities. Multiple libraries organizationally independent of each other within a geographic region often form consortia for the purpose of sharing a library automation system or other services. By banding together, libraries not only operate more efficiently by spreading out the costs of hardware, software, and technical support, but they also improve services to patrons by offering access to more materials as represented in these aggregate collections. Resource sharing opportunities drive library consolidation just as much as operational efficiency.

Previously, the initial configuration of consortia and shared automation systems was set, at least to some extent,

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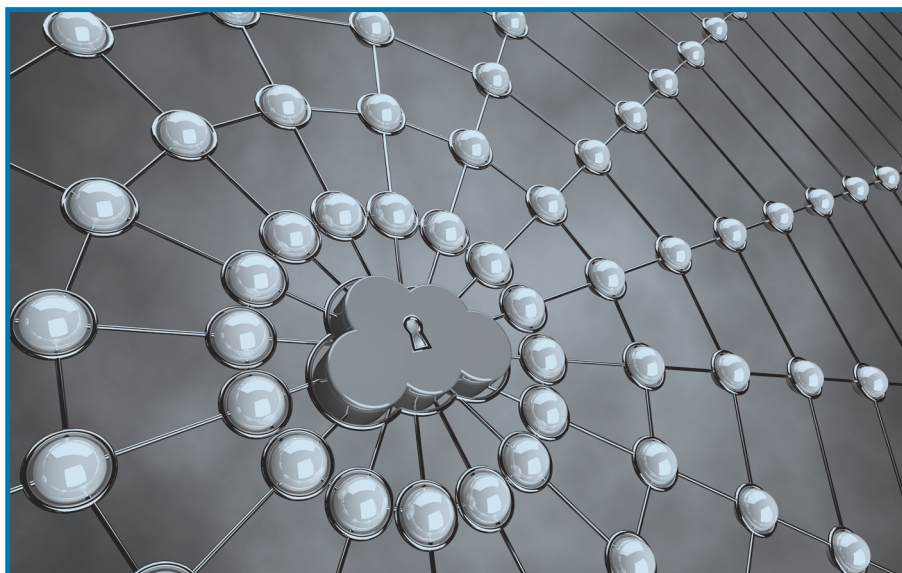
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by the limitations of what a given ILS implementation might reasonably support. Few library consortia, for example, were assembled that included more than a couple of hundred library facilities. The hardware and operating systems of those times had limitations in processing power, the number of transactions that could be processed per second, in storage capacity; and the bandwidth needed to connect to the libraries was finite. Software applications, such as integrated library systems, also may not have been designed to work with the complexities of many hundreds of libraries with different policies and practices.

In recent years, however, many factors have come into play that overcome these limitations and stand to reshape the landscape for library cooperation and resource sharing. From an organizational perspective, difficult economic times have caused some library organization to find strategies to operate more efficiently, which include amalgamation. Examples include the Illinois Heartland Library System and the Reaching Across Illinois Library System both formed from the consolidation of multiple regional library systems. Likewise in Massachusetts, all the previously established regional libraries have been discontinued in favor of the Massachusetts Library System. Mergers can also cross governmental jurisdictions. Almost a decade ago the Orbis Cascade Alliance, spanning Oregon, Washington, and Idaho, was formed from the merger of two previously separate consortia of academic libraries. As in the business world, rolling up many separate library organizations into one eliminates redundancies in administrative and operational areas.

Changes in technology have also enabled ever larger groups of libraries to share an automation system. New computer architectures that support software as a service and other cloud-based technologies enable implementations of



OCLC estimates that the 1.2 billion libraries worldwide would generate an aggregate transaction load for both public and staff functions of about 18.9 million per day or 5,265 per second.

an application of almost limitless scale. Through clustering and related technologies, very large numbers of servers can work together to create very large-scale systems with extremely high reliability. Major Web destinations such as Google and Amazon.com rely on many tens of thousands of servers distributed globally.

Considering new-generation library service platforms, I anticipate that we will see very large numbers of libraries come together to participate in offerings such as WorldShare Management Service from OCLC. Alma from Ex Libris, or Intota from Serials Solutions, all designed for a multi-tenant software as a service. These products have been created using many of the same technologies that power the popular Web sites sustaining incredibly high levels of use.

Even automation product based on older architectures can be expected to perform well in ever larger implemen-

tations. Fast-multi-core processors, abundant memory, and practically unlimited disk storage enable inefficient applications to achieve remarkable performance and scalability.

OCLC takes the concept of libraries' sharing of technology infrastructure to its logical conclusion. A slide that I've seen at many OCLC presentations, using figures developed by Mike Teets and Tam Dalrymple, estimates that the 1.2 billion libraries worldwide would generate an aggregate transaction load for both public and staff functions of about 18.9 million per day or 5,265 per second. Such a transaction rate would be easily supported on a well-architected technology platform. Whether OCLC's WorldShare Platform will attract enough libraries to put that calculus to the test remains to be seen. We can reasonably observe, however, that technology platforms can be assembled to support groupings of

libraries well beyond even the largest regional or state-wide consortia.

This trend of libraries banding together in ever larger numbers for shared automation projects will have an impact on the industry. The market will increasingly favor the organizations able to develop and sustain technology products that support large-scale implementations. This dynamic applies to both open source and proprietary projects. Most library automation products enter the scene with relatively small installations and over time work their way incrementally into ever larger implementations. Few organizations seeking an automation system for a very large number of libraries would opt for a system lacking a well-established track record of large-scale projects. Such a trend favors the established vendors in the industry and presents difficulties for new entrants.

A pattern of consolidation among existing automation implementations likewise disrupts the industry a bit. We see many examples of libraries that are basically satisfied with their incumbent system migrating to new ones as they join a merged system. In this issue we see examples of libraries that would have likely stayed with their current system for many years but for the efficiencies gained through consolidating. As I track the losses of library customers among the organizations in the industry, an increasing

number of these can be attributed to organizational consolidation. I expect this pattern to increase over the next few years.

A shift in the library automation industry toward a smaller number of larger installations also has implications for the potential revenues of the companies involved. Larger implementations means opportunities to win very large contracts, but the revenue per library represented may decline a bit. Consortia and other organizations involved in procuring these platforms naturally expect to see lower unit costs as they negotiate for larger groups of libraries. At the same time, I expect overall revenues in the industry to continue to see incremental increases as factors such as software as a service transfer costs previously borne locally by the library into new revenues for the vendors providing the hosting services.

Overall, I think that the consolidation of libraries into larger automation and discovery environments is a positive development. It's a reasonable strategy in response to weakened budgets, allowing libraries to shift more resources away from low-level tasks such as hardware and software maintenance toward higher-value activities related to patron services. Larger systems also mean more resources available to patrons and lower costs for fulfilling requests when desired items are not in the local library.

—Marshall Breeding

Illinois Heartland Library System, Largest Library Consortium in the US, Opts for Polaris for Shared Automation

The Illinois Heartland Library System, recently formed out of the merger of four antecedent consortia, has selected Polaris to provide its shared automation system. With a total 588 members, 450 of which will initially participate in the implementation of Polaris, aptly named SHARE (Sharing Heartland's Available Resources Equally), this consortia stands as the largest consortium in the United States in terms of libraries served.

The state of Illinois helps support regional library systems that provide services to their membership that include shared automation systems. Organizations called Local Library System Automation Programs, or LLSAPs operate these shared ILS implementations. The amount of annual funding distributed by the state to each organization is appropriated according to area and population served. This funding supports not only automation, but other services such as delivery of materials among libraries and programs such as talking books. In addition to the support received by the state, libraries also pay annual fees to the LLSAPs.

Leslie M. Bednar, Executive Director of the Illinois Heartland Library System, described a process that began in the spring of 2010 with considerations of merging the four LLSAPs in the region into a single shared automation system. As the conversations progressed, it became apparent that there would be many complications in having an automation environment shared among four different regional libraries, with the need to respond to four separate organizations each with their own governing boards, policies, and priorities. The Illinois State Library gave a directive in 2010 for the regional library systems to merge. It was determined that consolidating the four regional library systems would be an effective way to share resources, including technical expertise. None of the four LLSAPs was able to offer all of the services it desired. Each had differing levels of resources, and merging was seen as a way for the broader group to improve services with the same, or even lesser, funding levels.

The four regional library systems and their corresponding LLSAP implementations included:

- **Rolling Prairie Library System**, based in Decatur serving 122 member libraries spanning 264 facilities (9 academic, 46 public, 46 school districts across 151 buildings, 21 special). 83 of the libraries share a LLSAP based SirsiDynix Horizon ILS called eCAT.
- **Lewis & Clark Library System**, based in Edwardsville, serving 132 members, with 61 libraries participating in a LLSAP called GateNet based on Innovative's Millennium ILS.
- **Lincoln Trails Library System**, based in Champaign, serves its 117 members in east central Illinois in a LLSAP called LINC (Libraries in Cooperation) with 78 based on SirsiDynix Horizon.
- **Shawnee Library System**, based in Carterville serving 219 members, operated a LLSAP called SILNET (Southern Illinois Library Network) based on Dynix Classic serving 80 libraries.

The merger of the four regional library systems into the Illinois Heartland Library System, governed by a single board and executive director, was completed on July 1, 2011. The personnel of the four organizations were combined, with operations continuing at the office locations of the antecedent organizations. The organization serves 58 counties in central and southern Illinois with a combined population of 2,248,634.

ILS Selection

The process of selecting a new automation environment for the newly consolidated Illinois Heartland Library system began after the merger, with a Request for Information issued on August 2, 2011. Following the receipt of the responses on September 2, 2011, a short list of qualified vendors, including SirsiDynix and Polaris were identified. These two vendors gave in-depth presentations of their products and on-site evaluations were conducted. Polaris emerged as the preferred vendor, with a contract executed on July 26, 2012. Bednar noted that the products of both systems were very competitive within their process. SirsiDynix had a positive track record of service in three of the four systems. Polaris, however, ultimately emerged as more agile and able to respond to the organization's strategic priorities, such as the need to more efficiently support the delivery of materials.

SirsiDynix supports a number of very large shared automation implementations in many regions of the world. South Australia, for example, recently selected SirsiDynix Symphony for its state-wide automation project, spanning 135 public libraries serving a total population of 1,664,642 (2010). The Toronto Public Library system spans 100 facilities. The National Library of New Zealand selected SirsiDynix Symphony for the ILS com-

ponent of its Kotui project to provide a shared automation environment for public libraries interested in participating.

Polaris has won a number of contracts for large installations in recent years including major municipal systems such as the Boston Public Library in 2012, Denver Public Library, Phoenix Public Library, and many other smaller consortia and individual public library systems. Polaris has been one of the more successful companies in recent years in gaining new public library customers in the United States.

The consortium plans to complete the migration of the four previous systems to Polaris in the first quarter of 2013.

Organizational Consolidation, Separate Automation Projects in Northern Illinois

Another group of regional library systems has also recently consolidated. **Reaching Across Illinois Library System**, or RAILS, brought together five of the regional library systems that serve the northern section of the state in a merger that finalized in July 1, 2011. The regional library systems involved included:

- **Alliance Library System** which operated an LLSAP called Resource Sharing Alliance (RSA) based on SirsiDynix Symphony.
- **DuPage Library System** which managed the MAGIC (Multi-type Automation Group in Cooperation) LLSAP that uses the SirsiDynix Symphony ILS.
- **Prairie Area Library System** (PALS) was formed out of a merger between Northern Illinois Library System (running Millennium), Heritage Trail (Symphony) and River Bend (Symphony) library systems in 2007. It operates a shared library system, called PrairieCat that automates 90 libraries and represents the holdings of another 110. In 2012 PrairieCat migrated from Symphony to Innovative's Sierra. Eight libraries broke away from the merger to continue with Millennium, under the name **Northern Illinois Cooperative**, which continues to operate Millennium.
- **Metropolitan Library System** which operated the SWAN (System Wide Automated Network) LLSAP using the Millennium ILS.

This merger created a large multi-type regional library system out of several antecedent organizations, but did not result in the consolidation of the automation systems. RAILS continues to manage the four automation systems, including RSA, SWAN, PrairieCat, and MAGIC. Each of these LLSAPs are separate organizations governed by their own boards that according to Judy Hutchinson, PrairieCat LLSAP Service Manager, regu-

larly meet to investigate options for future collaboration

RAILS serves an aggregate population of 7,866,400, considerably larger than the 2,248,634 within the service area of the Illinois Heartland Library System. The Chicago Public Library, with a population of 2,695,598 falls with the geographical area served by RAILS but is a separate system.

The Largest Consortia in the US

When counting the number of libraries involved, Illinois Heartland Library System stands as the largest in the country, with 588 members. Those participating in the shared Polaris implementation include 302 library organizations spanning 450 facilities across 58 counties. The combined number of volumes to be migrated into the new Polaris system totals 9,684,487.

PINES, the shared automation system in Georgia based on the open source Evergreen ILS, ranks below Illinois Heartland's SHARE in terms of number of libraries involved, but is larger in collection size and population served. Georgia Public Library System reports 10,600,000 volumes currently available in PINES libraries. All residents in Georgia are eligible for a PINES borrowing card, meaning that it theoretically serves the entire population of the state, currently 9,687,653. The urban areas of Georgia, however, operate their own library automation systems, including Atlanta—Fulton County, Cobb County, DeKalb County and several others. Subtracting the population of the counties that operate their own automation systems (4,280,907), PINES primarily serves 5,406,745—still more than double that of SHARE.

Massachusetts saw an even more aggressive consolidation of its regional library systems. In 2010, the six regional library systems, transitioned into a single organization, the Massachusetts Library System. The consortial automation systems of the regional libraries continue to operate as is.

Massachusetts has also embraced open source automation on a large scale. Two of the regional systems, NOBLE (North of Boston Library Exchange) and CW/MARS (Central and Western Automated Resource Sharing) recently migrated from Millennium to Evergreen, and the Merrimack Valley Library Consortium migrated from SirsiDynix Horizon to Evergreen. The state also supports MassCat, a shared ILS based on Koha that serves smaller libraries throughout the state, with more than 70 members.

Other large implementations of shared automation systems include:

- Hawaii, where all of the public libraries in the state share a single SirsiDynix Horizon. The Hawaii Public Library System includes 50 facilities and serves a population of about 1.3 million.

Illinois Heartland's shared Polaris implementation includes 302 library organizations spanning 450 facilities across 58 counties. The combined number of volumes to be migrated into the new Polaris system totals 9,684,487.

- In Saskatchewan, the 10 regional libraries spanning over 320 facilities in the province are automated through a shared Millennium ILS. In 2011 the Saskatchewan Information & Library Services Consortium signed with Innovative to migrate to Sierra. Serving an area of about 250,000 square miles, makes it one of the largest in terms of geographic coverage. The state of Georgia covers about 60,000 square miles.
- The Queens Borough Library System stands as the library system in the US with the highest numbers of circulation transaction with over 23 million in 2011 serving the 2.3 million residents of this borough of New York City. This municipal system supports 23 facilities and a collection of over 7 million volumes using Virtua from VTLS implemented in 2008.

In Iceland almost all of the libraries in the country participate in a shared implementation of Ex Libris Aleph in a system called Genir operated by Landskerfi bókasafna, or the Consortium of Icelandic Libraries. About 300 libraries participate in Genir.

In Chile, the public libraries throughout the country participate in a shared implementation of Aleph called BiblioRedes. The program of library automation in Chile is working toward bringing all 420 public libraries in the country on to BiblioRedes. The network recently layered a new catalog on top of the Aleph system based on VuFind.

The consolidation of the Illinois Heartland Library System and its decision to merge its members on to a single automation system contributes to a growing trend toward ever larger numbers of libraries cooperating to share strategic technology infrastructure. Polaris has built a track record to demonstrate its ability to handle ever larger automation scenarios and has reaped rewards as it steadily wins competitive procurements of increasing size. As we review other large-scale implementations, we see several other capable products, including Aleph from Ex Libris, Millennium from Innovative Interfaces, SirsiDynix Symphony, and Virtua from VTLS. This list isn't comprehensive.

—Marshall Breeding

The Orbis Cascade Alliance Selects Alma for Consolidated Automation

The Orbis Cascade Alliance, a consortium of 37 academic libraries in Oregon, Washington, and Oregon are implementing a strategy to share a single automation system. The current arrangement uses individual systems supplemented by resource sharing infrastructure. Alma from Ex Libris was recently selected as the technology environment to be shared among the members.

The Orbis Cascade Alliance represents 37 academic libraries across three states with an aggregated enrollment of 258,000 (see www.orbiscascade.org). Thirty six of the libraries currently operate the Millennium ILS from Innovative Interfaces and one, Eastern Oregon University, uses the open source Evergreen ILS as part of the Sage Library System. The current Orbis Cascade Alliance was formed in 2003 through the merger of the previously separate Orbis and Cascade consortia of academic libraries, which were both established in the 1990s. The libraries hold an aggregate collection of 9 million titles and 28 million items.

The members of the Orbis Cascade Alliance have long held a strategic emphasis on resource sharing. In 1997 the Orbis consortium was one of the early adopters of Innovative's INN-Reach union catalog and interlibrary loan system. Following the merger of Orbis and Cascade, the use of INN-Reach continued into 2008.

In April 2008, the Alliance announced that they would partner with OCLC to implement a resource sharing environment based on OCLC products, including WorldCat.org, WorldCat Navigator (formerly called VDX), WorldCat Resource Sharing, and a circula-

tion gateway to manage transactions with each of the institution's integrated library systems. A union catalog, called Summit (summit.worldcat.org) provides the ability to search WorldCat.org to provide prioritized access to the materials of all the Alliance members as well as the broader holdings of WorldCat.

Taking the strategic approach to resource sharing a significant step forward, the Orbis Cascade Alliance decided in July 2011 to begin exploring the possibility for single automation system to support all of its member libraries. This process resulted in developing a Request for Proposals for a Shared Library Management Service, which was issued on January 2, 2012. Based on responses to the RFP, Innovative Interfaces, Ex Libris, OCLC, and Serials Solutions were invited to give product presentations in April 2012. On April 18, 2012 the field was narrowed to Innovative Interfaces and Ex Libris. At the July 13, 2012 meeting of the Orbis Cascade Alliance, the Council of Library Directors voted unanimously to select Alma as the product to support the consolidated system and enter into contract negotiations with Ex Libris. The Alliance has conducted a transparent process with all major documents made available to a publicly accessible wiki.

This move by the Orbis Cascade Alliance not only counts as an early voice of confidence in Ex Libris's Alma, but also reflects an interest in new automation configurations that enable greater resource sharing capabilities.

—Marshall Breeding

Library Technology News in Brief

OCLC recommends Open Data Commons Attribution License (ODC-BY) for WorldCat data

DUBLIN, Ohio, USA, 6 August 2012. OCLC is recommending the Open Data Commons Attribution License (ODC-BY) for member institutions that would like to release their library catalog data on the Web. This open data license provides the means for users to share WorldCat-derived data in a manner that is consistent with the cooperative's community norms defined in the "WorldCat Rights and Responsibilities." Data can be freely

shared subject only to attribution and OCLC's request that those making use of WorldCat derived data conform to the community norms.

"Many libraries are now examining ways that they can make their bibliographic records available, for free, on the Internet, so that they can be reused and more fully integrated into the broader Web environment," said Jim Michalko, Vice President, OCLC Research Library Partnership, who has overseen OCLC's license policy discussions. "Libraries may want to release catalog data as linked data, as MARC 21 or as MARCXML. For an OCLC member institution, these records may

often contain data derived from WorldCat. Coupled with a reference to the community norms articulated in ‘WorldCat Rights and Responsibilities,’ the ODC-BY license provides a good way to share records that’s consistent with the cooperative nature of OCLC cataloging.”

Best practices in the Web environment include making data available along with a license that clearly sets out the terms under which the data is being made available. Without such a license, users can never be sure of their rights to use the data, which can impede innovation.

The VIAF project and the recent addition of Schema.org linked data to WorldCat.org records were both made available under the ODC-BY license. “Successful shared data projects require transparent, easily understood licenses,” said Richard Wallis, OCLC Technology Evangelist. “After much research and discussion, it was clear that ODC-BY was the best choice of license for many OCLC data services. The recommendation for members to also adopt this clear and consistent approach to the open licensing of shared data, derived from WorldCat, naturally flowed from this experience.”

ebrary enhances strategic E-book Acquisition program for public libraries

August 6, 2012 – Palo Alto, CA, USA – ebrary, a ProQuest business, has added over 9,000 new titles from publishers including Bentham Science and Houghton Mifflin Harcourt across acquisition models.

More than 1,100 of the new titles are in subjects including health & fitness, photography and religion and are available through Public Library Complete, which provides simultaneous, multi-user access and continued growth. These titles and an additional 7,900 e-books in subject areas such as history, sports, and art

are now available for purchase outright or through ebrary’s patron driven acquisition program. Many are also available for short-term loan.

To support patrons looking to start or grow a small business, ebrary’s on-staff librarians have also created a perpetual pack in Small Business Ownership and Entrepreneurship. With over 70 recently published e-books from publishers such as AMACOM, John Wiley & Sons, Kogan Page, and Palgrave Macmillan, the pack covers topics including strategy, marketing, entrepreneurship, finance, HR, capital raising, and sustainability. The new pack, which can be previewed at librarytitles.ebrary.com, is part of a series that will be available for purchase throughout the year in key areas requested by public librarians.

Many ebrary customers start their strategic e-book acquisition programs by subscribing to an affordable subscription database such as Public Library Complete, then leverage usage statistics to determine where to strategically apply budget to other models. High-use subjects can be expanded with patron driven acquisition where titles are only purchased if used. Lower use subjects can be supplemented with short-term loan with no commitment to purchase. Essential titles, such as those included in ebrary’s new Small Business Ownership and Entrepreneurship, pack can be purchased outright.

NISO and DAISY Consortium Publish Authoring and Interchange Framework Standard

August 7, 2012. The National Information Standards Organization (NISO) and the DAISY Consortium announce the publication of the new American National Standard Authoring and Interchange Framework (ANSI/NISO Z39.98-2012). The standard defines how to represent digital information using XML to pro-

duce documents suitable for transformation into different universally accessible formats. The standard is a revision, extension, and enhancement of Specifications for the Digital Talking Book (DTB), commonly referred to as the DAISY standard (ANSI/NISO Z39.86-2005(R2012)). The DAISY Consortium is the Maintenance Agency for both standards.

The A&I Framework standard will be of interest to any organization using an XML authoring workflow, developers and publishers of universally accessible digital publications, and agencies interested in creating profiles for new document types to integrate into distribution formats, such as EPUB.

Both the A&I Framework standard and the Digital Talking Book standard are available for free download from the NISO website (daisy.niso.org) and the DAISY website (www.daisy.org/daisy-standard).

Library of Georgia Digital Collection in line for indexing in the Summon Service

The Digital Library of Georgia connects users to a million digital objects, in more than 200 collections from 60 institutions and 100 government agencies. With the recent agreement to index the organization’s collection, users of the Summon service will soon be able to discover resources in this vast collection of digitized books, manuscripts, photographs, government documents, newspapers, maps, architectural drawings, audio, video, and other resources.

Serving as a gateway to Georgia history, life and culture, the digital library is an initiative of GALILEO, the state’s virtual library, and is based at the University of Georgia Libraries. It supports the instruction, research, and service missions of GALILEO and the University System of Georgia through collaboration with university faculty, students, and staff.



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