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Open Forum: The Future of Library Systems

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Recorder

Moderated by Maria Collins of North Carolina State University, discussion at this open forum on the future of library systems touched on open-source library systems, cloud computing, new initiatives by the Open Library Environment (OLE) Project and OCLC, and desired characteristics of future integrated library systems. Most participants had limited experience with next-generation library systems and attended the open forum with the desire to broaden their understanding, although some were exposed to or had worked with the open-source discovery tool VuFind, the OLE Project, WorldCat Local, and the OCLC Web-scale service. A strong desire to customize library systems to meet local needs emerged as the primary factor in support of open-source software, while the fear of not being able to provide needed levels of technical support was the biggest challenge to implementing open-source systems. The ideal future library system will facilitate the management of workflow, incorporate enhanced discovery tools, and be interoperable with other systems inside and outside the library.

KEYWORDS integrated library systems (ILSs), open-source software, cloud computing, Open Library Environment (OLE) Project, OCLC Web-scale management services, VuFind

This session took the form of an open forum on the future of library systems, moderated by Maria Collins of North Carolina State University (NCSU). Participants were invited to discuss new options for integrated library system (ILS) software from open-source providers, OCLC, and the Open Library Environment (OLE) Project. They were also asked to consider benefits and challenges inherent in these developing options, as well as the impact of open-source software and cloud computing on the future of library systems and serials management.

Collins began the session by distributing a handout providing brief descriptions of open-source ILS providers Avanti, Evergreen, Koha, the Learning Access Institute, and the Open Library Environment (OLE) Project, as well as OCLC Web-scale, with websites for further information listed. The handout also provided several useful definitions:

> Cloud computing is a style of computing in which dynamically scalable and often virtualized resources are provided as a service over the Internet…. The concept incorporates infrastructure as a service (IaaS), platform as a service (PaaS), and software as a service (SaaS) as well as other recent… technology trends that have the common theme of reliance on the Internet for satisfying the computing needs of the users.[1]
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> Distributed networking is a distributed computer operating system said to be "distributed" when the computer programming and the data to be worked on are spread out over more than one computer, usually over a network.[2]
>
> Open source is an approach to design, development, and distribution offering practical accessibility to a product's source (goods and knowledge). Some consider open source as one of the various possible design approaches, while others consider it a critical strategic element of their operations.[3]

Following this introduction, each of the approximately forty participants stated his or her institutional affiliation, institution size and type, and systems currently in use. The majority of participants hailed from large academic libraries, both public and private. Also represented at the forum were a number of small academic libraries, a large public library, a hospital library, a research institute library, and a library vendor. Most participants worked at libraries running ILSs from Innovative Interfaces Inc. Libraries running Ex Libris Voyager were also well-represented. Other systems in use included SirsiDynix and Ex Libris Aleph. A librarian from Villanova University was also present. Villanova designed and developed the open-source discovery tool VuFind.

In addition to their ILS, many in the room used additional products to manage and deliver content, including Serials Solutions for tracking e-journal holdings; OpenURL link resolvers from Serials Solutions and Ex Libris SFX; and electronic resource management (ERM) systems from Innovative Interfaces Inc., Serials Solutions, and Ex Libris. Many libraries had implemented discovery interfaces including WorldCat Local, Innovative Interfaces Encore, AquaBrowser, and ExLibris Primo. A few libraries mentioned using federated search products, including Ex Libris Metalib, WebFeat, Serials Solutions 360 Search, and MuseGlobal.

While participants were interested in alternatives to current ILS products, including open-source solutions, few in attendance had much experience with anything but the traditional ILS. A large number of librarians indicated that they were "just interested," were "here to listen," and "wanted to see the options" and "learn more." Others were in the early stages of investigating open-source ILS products or were hoping their consortia would take the lead in doing so. Texas Tech University Library is investigating Evergreen, Koha, Aquabrowser, and Primo. Librarians from Rutgers University are involved with the OLE Project, and Collins had participated in a

focus group for OCLC's Web-scale product. Villanova University librarians are looking closely at Evergreen.

After introductions, Collins asked participants if they had investigated open-source ILS options and why. Had there been a tipping point? David Burke from Villanova University provided the background for the development of their open-source resource portal VuFind. According to their website, the goal of VuFind is to enable users to "search and browse through all of your library's resources by replacing the traditional OPAC [online public access catalog] to include: catalog records, locally cached journals, digital library items, institutional repository, institutional bibliography, and other library collections and resources."[4] Burke explained that when their ILS, Voyager, was bought by ExLibris, Villanova librarians were worried about ExLibris's commitment to upgrading Voyager and keeping the technology current. They wanted a discovery tool that supported tagging, facets, and other Catalog 2.0 features, and they did not want to wait for their ILS vendor to develop it. Their library director is an "open-source guru," who supported their development of VuFind, which they decided to make open source so that other libraries could contribute to its development. VuFind has since been fully implemented by the National Library of Australia, and several other libraries are working with it as well.

Discussion quickly shifted to issues of staffing and support for locally-developed solutions like VuFind, which is supported by a systems staff of two. A number of participants expressed the desire to look at open-source solutions, but admitted that staffing and support issues prevented them from doing so. LibLime was mentioned as an alternative to in-house support. LibLime provides commercial support services to libraries using open-source software, including hosting, migration assistance, staff training, support, software maintenance, and development. LibLime currently supports the open-source ILSs Koha and Evergreen and the

open-source cataloging tool biblios.net. Evergreen, an open-source ILS developed by the Georgia Public Library Service, is also supported by Equinox Software Inc., a company founded by the developers of Evergreen. Collins mentioned the importance of building a sustainable structure into any system developed locally, a lessoned learned through her experiences with NCSU's efforts to design and build a locally developed ERM system. With a robust structure and documentation, the system can be maintained even as support staff come and go. A participant from Radford University commented that the issue of local support for open-source systems is a bigger factor at smaller institutions with fewer staff. A participant from Rutgers University noted that the VALE Consortium, of which Rutgers is a member, is examining open-source solutions at a consortium level, so smaller institutions without information technology (IT) support can be involved.

Questions were raised about how paying a third party to support and develop a library's open-source ILS implementation differed from working with current ILS vendors, for example ExLibris, Innovative Interfaces Inc., and SirsiDynix, and whether it made more sense for libraries to pressure these vendors to open their systems and allow for greater interoperability with other applications, rather than to develop open-source systems from the ground up. One participant noted that all the main commercial ILSs originated in library IT departments and went commercial because the universities at which they were developed were not able to sustain them. In response to these questions, participants described the frustration they feel when it is impossible to make minimal customizations to their ILS, even when local systems support is available, and when vendors take an unreasonable amount of time to resolve problems. Open-source systems allow for greater local customization, a trend that has been embraced not only by libraries, but by campus IT departments that have moved to open-source course management

systems for the same reasons. Burke added that for Villanova, developing VuFind was also a cost-saving measure. Fundamentally, the value of open-source systems is that they allow us to decide what we need instead of being driven by our library systems.

Collins shifted the conversation to the ability of current open-source ILSs to handle acquisitions and serials management and noted that the OLE Project has not included much about serials management in their documentation thus far. None present were aware of any detailed information on acquisitions and serials management in these next generation library systems, and the discussion moved to the general issue of how these systems accommodate workflow. Gracemary Smulewitz from Rutgers talked at length about their work with the OLE Project. She emphasized that the design of the ILS of the future should not be limited by current library functions and that we should not have to repeat the same work in different systems. She noted that the OLE Project is being designed with service-oriented architecture, which allows data to be easily shared between different, loosely-coupled system components through "service layers" using shared standards, and that these independent system components and services can be combined to create new systems and services. She explained that the OLE Project takes a minimalist approach to the activities involved in, for example, negotiating a license or placing an order. The workflow is broken down to a basic level based on activities performed, the idea being to identify the key functions necessary to accomplish a task. There is no emphasis on the categories of serials management, fund management, or acquisitions per se. The ideal result will be a workflow management system that can be customized as needed and adapted to future work flows.

OCLC's announced Web-scale cooperative library management service product was also discussed in the context of workflow. OCLC is studying library processes and trying to redesign

workflows with the goal of creating a networked ILS "in the cloud." Collins noted that she discussed NCSU's licensing, acquisitions, and related functions during the OCLC focus group in which she participated. She explained that many acquisitions functions at NCSU are quite complex and involve up to eight people per transaction, some of whom are outside the library (for example, vendors and university legal staff). Thus, future ILSs need to understand that workflow is not always linear. They will need to help manage workflow by pushing and moving work along.

Continuing the discussion of OCLC's Web-scale networked library service, Collins asked how people felt about the idea of storing their library data "in the cloud" and the idea that local infrastructure will potentially be unnecessary. Collins explained that OCLC is developing a fully-hosted system that will add circulation, acquisitions, and license management components to WorldCat Local. Discussion focused on WorldCat Local, the component with which most participants were familiar. Some found WorldCat Local to lack efficiency and clarity and to be difficult to use. They maintained that conventional ILS functionality is far superior. Others complained that WorldCat Local was not customizable to their needs and did not allow them to access their local data. It was noted that OCLC is developing a local data record for this purpose. Collins pointed out that in a recent article in *Library Journal,* the president of ExLibris predicted that despite the advantages of OCLC Web-scale and related projects, the largest institutions would retain their local systems for detailed administrative tasks.[5] Some participants disagreed with this assertion, claiming that not only do libraries need to provide a better discovery layer, but we need to define necessary functions and reconsider anything not necessary. For example, some libraries index gift materials by donor name. We should not invest significant resources in

designing and maintaining functions that are useful only to a handful of people. There are other ways to handle these specialized tasks.

Whether a future system is open-source or proprietary, networked or locally maintained, one thing on which there was broad agreement was that integrated library systems or system components need to be interoperable with other systems. More than one participant suggested that we do not need a single system; we need specialized sub-systems that are able to exchange data. Collins agreed that a key feature for systems of the future is one point of maintenance and the ability to share and "round-trip" our data between systems. Another person added that we should not have to key any data twice, and that the success of OCLC's products would depend largely on how successfully they can ingest local data into their system.

Collins concluded the open forum by asking participants to brainstorm the key features of an ideal future library system. Many of the same themes were repeated, specifically the ability to customize a system to meet local needs; open-source software to allow for transparency and flexibility; a wider use of standards to enhance interoperability; enhanced discovery tools that facilitate searching and integrate the catalog with other data streams including federated search results, article databases, and institutional repository contents; and the ability to better define roles and relationships between entities, as with "soft linking." Also mentioned as important was the "network effect," so that, for example, when one library updates a bibliographic record, it is updated for all libraries as with WorldCat Local. Most important, though, was the need for interoperability with systems inside and outside the library. As the OLE Project has recognized, our systems need to be able to interface with enterprise resource planning and human resource management systems (for example, PeopleSoft) and course management software (for example,

Blackboard). One participant summed up this consensus by asking, "What if all the different systems from different vendors worked together so we could just mix and match?"

NOTES

1. *Wikipedia*, s.v. "Cloud Computing," http://en.wikipedia.org/wiki/Cloud_computing (accessed May 13, 2009).

2. *Wikipedia*, s.v. "Distributed Networking," http://en.wikipedia.org/wiki/Distributed_Networking (accessed May 13, 2009).

3. *Wikipedia*, s.v. "Open Source," http://en.wikipedia.org/wiki/Open_source (accessed May 13, 2009).

4. VuFind, http://www.vufind.org/ (accessed June 30, 2009).

5. Josh Hadro, "Tough Questions Emerge on OCLC's Competitive Advantage and Data Policies," *Library Journal*, April 28, 2009, http://www.libraryjournal.com/article/CA6654121.html (accessed July 13, 2009).

ADDITIONAL RESOURCES

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