Smart Libraries Newsletter

News and Analysis in Library Technology Developments

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Smarter Libraries through Technology

Trends in Resource Management and Discovery Product Strategies

By Marshall Breeding

Library services platforms are an established genre of technology products that provide library staff members with the tools to manage almost all aspects of their work. The current slate of products is oriented to academic and research libraries, but at least one new offering for public libraries are in the wings. These products do not necessarily include interfaces used by library patrons for discovery and access of library collections and services. In the current business landscape, each of the organizations offering a library services platform has also developed an index-based discovery service that can also be used in conjunction with other resource management solutions. In most cases, these two products are packaged together. The bundling or integration between library services platforms and discovery services has become a sensitive topic for academic libraries and in the competitive business environment.

OCLC, for example, usually packages WorldShare Management Services with its WorldCat Discovery Service or with WorldCat Local. It is technically possible to use other discovery products with WorldShare Management Services, though very few libraries have opted to venture outside the bundled package.

Alma by default is bundled with the Primo discovery interface and Primo Central article-level index. These products, though designed to work together, are managed through their own back office tools. Following the acquisition of Ex Libris by ProQuest, integrations have been developed to enable Summon to also serve as a patron interface and discovery service with Alma. Eastern Michigan University, a long-time Summon site, implemented Alma in June 2017 using Summon as its patron interface. The company also supports the use of open source discovery interfaces such as Blacklight and VuFind. (See "Ex Libris Unbundles Discovery for Alma" in *Smart Libraries Newsletter* 36, no. 12 [December 2016]: 7).

In addition to its efforts to expand patron interface options, Ex Libris has also created a more tightly coupled option. The company has recently launched Primo VE, which fully integrates Primo with Alma. Primo VE eliminates the Primo back office and enables libraries to configure and customize all aspects of discovery through Alma. Ex Libris will continue to support the separately managed versions of Primo, which may be appropriate for libraries with complex customization and data sources and for those that use it with other resource management systems.

EBSCO Discovery Service (EDS), developed by EBSCO Information Services, has seen widespread adoption by academic libraries and its implementations exceed that of Primo, Summon, and WorldCat. EBSCO has developed partnerships and supporting technologies to integrate EDS with almost all the major integrated library systems available globally. SirsiDynix and Innovative Interfaces, for example, offer product suites that provide article-level discovery powered by EBSCO indexes and technologies. A library can use EDS as its complete patron interface and discovery environment, or it can use its own discovery interface and provide article-level search results provided by EDS

IN THIS ISSUE

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behind the scenes using its API. For EBSCO, these integration partnerships help ensure that EBSCO Discovery Service stands out as a viable choice regardless of what integrated library system the library uses.

The library services platforms have not seen the same level of support for EDS as prevails with integrated library systems. Although no business or technical barriers exist between OCLC and EBSCO, few libraries using WorldShare Management Services have opted to implement EDS as its patron discovery layer. The relationship between EBSCO and ProQuest can be seen as more strident, resulting in significant obstacles for pairing Alma with EDS. A longstanding business conflict has yet to be resolved so that content from EBSCOhost database can be directly populated into the Primo Central or Summon discovery indexes and for EDS to be enabled as a supported interface for Alma. The underlying details of this conflict relate to fundamentally opposing views of how data and metadata should be treated within a discovery environment. The lack of data exchange agreements between EBSCO and ProQuest impact the discovery arena. Libraries using Primo that subscribe to EBSCOhost databases perceive less than optimal exposure of those resources, and those that use EDS lack full access to ProQuest databases or use it as their patron interface should they want to implement Alma.

The lack of interoperability between EDS and Alma has been an issue that has made a major impact in the competitive business environment. As Alma becomes increasingly dominant in the academic and research library sphere, it often displaces an existing or potential EDS implementation with Primo or Summon. Many libraries that have implemented EDS may see Primo as a comparable discovery service and do not resist the change. Those that have strong preferences for EDS may opt for resource management solutions other than Alma or may continue to use EDS as a separate discovery service. The libraries of Virginia Tech featured in this issue of *Smart Libraries Newsletter* fall into this category. The bundling of Alma and Primo in a way that disadvantages EDS can also be seen as one of the key factors behind the launch of FOLIO. This new open source initiative is well along its way to develop a library services platform following a more modular design that can work with any set of discovery services. EBSCO has made substantial contributions to FOLIO, including work to ensure its interoperability with EDS.

Judging by the current procurement patterns, there seems to be a general acceptance of the close bond between discovery services and their respective library services platforms. Bundled packages, especially Alma with Primo and WorldShare Management Services with WorldCat Discovery Service continue to show strong momentum. The bonds have loosened somewhat already, with both OCLC and Ex Libris supporting alternative discovery strategies, but not necessarily in ways that cross competitive boundaries. It will be interesting to note how this trend plays out in the next phase of academic library technologies. Will libraries press for more independence between resource management and discovery services, or will they be drawn to more deeply integrated solutions?

Virginia Tech Libraries to Implement Koha

The libraries of Virginia Tech University have begun the implementation of the open source Koha integrated library system and the Coral electronic resource management application. Virginia Tech selected ByWater Solutions as its technology partner, not only to provide support services for Koha and Coral, but also to enhance these systems to meet the library's specific needs while offering substantial savings relative to its current environment. The library will migrate from Sierra ILS from Innovative Interfaces, which was implemented in 2011.

Virginia Tech is a member of the Association of Research Libraries and will be the largest academic library in the United States to implement Koha. Virginia Tech has a collection of just over two million print volumes. The migration includes all the Virginia Tech libraries. In addition to the main Newman Library, its Art and Architecture, Veterinary Medicine, and Falls Church libraries plan to implement Koha.

The library will also shift from ProQuest Summon to EDS. Support for EDS was also a factor in selecting this open source suite over other alternatives. The library focused on solutions for resource management tools used by its staff members compatible with its choice of patron-facing discovery service.

Open Source Strategy

According to Michael Kucsak, Assistant Dean and Chief of Staff for the Virginia Tech libraries, Koha will form part of a new technology environment for the library based on open source software. It's expected to provide more flexibility and enable more customization. Koha will replace Sierra for

Virginia Tech: A Library Technology Pioneer

The Virginia Tech libraries have played an interesting part in the history of library technologies. In a pioneering initiative, one of the early library automation systems began in its Newman Library in 1974 by the university's system development department under the direction of Dr. Vinod Chachra. The project first created a circulation module that was placed into use by the Newman Library in September 1975. The Virginia Tech Library System was incrementally enhanced to become a complete integrated library system, which eventually became one of the major products on the commercial market.

Building on the success of its operation in the Newman Library, the university established a Center for Library Automation to market and support the system in other libraries. In 1985, the for-profit company VTLS Inc. was established by the Virginia Tech Intellectual Properties, the university's technology transfer office, under the direction of Chachra as its President and CEO. The university shared ownership in the company until 1994 when Chachra bought out its equity in the company.

Following the separation of VTLS as a separate company, the Virginia Tech libraries continued to use the product until 2005 when it migrated to Millennium from Innovative Interfaces. The library migrated from Millennium to Sierra in 2011. Innovative acquired VTLS in May 2014. (For additional details about the history of VTLS, see "Innovative Interfaces Acquires VTLS" in *Smart Libraries Newsletter* 34, no. 7 [July 2014]: 4).

functions such as cataloging, acquisitions, and circulation of the library's print collection. The library will also implement the open source Coral electronic resource management system, replacing processes that were previously conducted on Innovative's Electronic Resource Management (ERM) and other tools.

Consistent with other academic libraries in the United States, Virginia Tech devotes most of its collection funds to subscriptions to electronic resources. Kucsak reports an 87 to 1 ratio of spending for electronic relative to print resources. The library has opted for a strategy based on separate tools for print and electronic resource management, with an integration layer connecting the systems to avoid duplicate work, to synchronize overlapping data, and to streamline the flow of data into its discovery environment. Nathan Curulla, Chief Revenue Officer for ByWater Solutions, states that the integration being developed between Koha and Coral will result in similar functionality as offered by library services platforms.

Virginia Tech sees Koha as a capable tool for managing an aspect of its core collection management activities. The integrated library system will continue to play a vital role, and Kucsak expects no diminishment in capabilities as it moves to Koha. Like other academic libraries, Virginia Tech has seen a decline in its acquisitions and circulation of print materials as the emphasis shifts to electronic resources. Further, the library increasingly extends its attention to new services such as support of research data management, digital collections, and studios in addition to traditional collection management activities.

Koha for Print Resource Management

Koha, consistent with the general scope of an integrated library system, focuses primarily on print materials and does not offer functionality for the management of complex collections of electronic resources. Since its initial implementation in 1999, Koha has been continuously enhanced through the collaborative efforts of a global development community. In broad terms, the functionality of Koha can be considered on par with that of the major proprietary integrated library systems, though work continues to create new features to meet the needs of the diverse libraries using the product. Koha has been adopted by many other academic libraries, but this will be its first implementation by a major research library in the United States.

Electronic Resource Management Strategies

Academic libraries increasingly require solutions to address the specialized functionality related to the management of electronic resources, such as encoding license terms, tracking the individual e-journal titles and holdings within each subscribed package, analysis of usage statistics, and automating activation of new subscriptions, renewals, and cancellations. Many of these libraries have invested in some type of electronic resource management tools to responsibly manage the growing body of subscriptions and open access materials.

Differing strategies for the management of electronic resources can be seen in academic libraries. Since integrated library systems do not in themselves address many aspects of managing these resources, specialized electronic resource management tools were developed. These included proprietary products such as Verde from Ex Libris and Innovative's ERM. Coral was developed as an open source alternative.

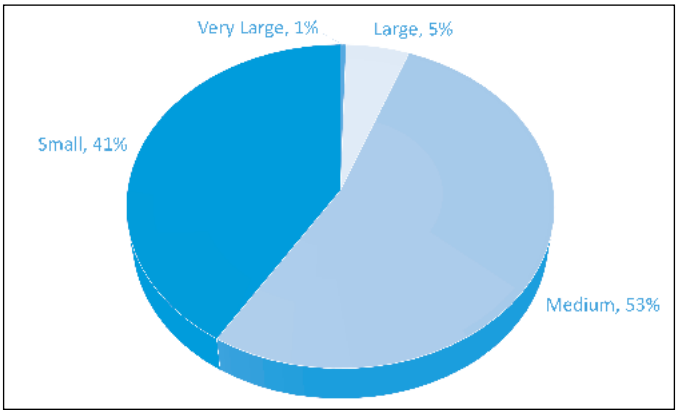

Figure 1: Distribution of 735 Koha—ByWater Solutions Implementations by Library Type

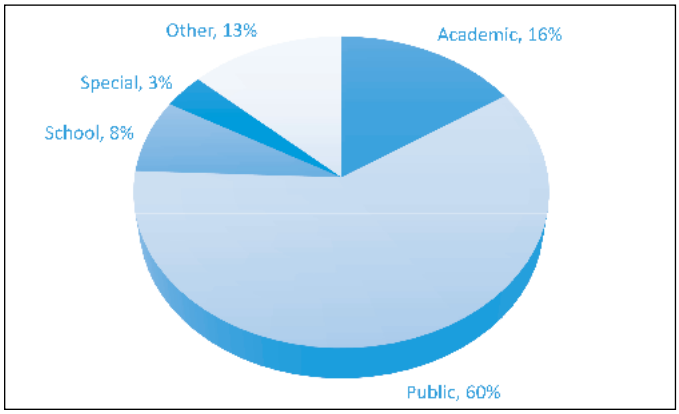

Figure 2: Distribution of Koha—ByWater Solutions Implementations by Library Size

These specialized electronic resource management products have not seen widespread adoption. When using a standalone electronic resource management product, a key challenge relates to avoiding duplication of data and workflow with the integrated library system. Many libraries opt to use local spreadsheets or databases to track many aspects of these resources.

The genre of library services platforms represents an alternative to operating separate systems for managing print and electronic resources. These products are designed to address resources spanning each format, providing a comprehensive set of workflow tools, metadata models, and knowledge bases. Products such as Ex Libris Alma and OCLC WorldShare Management Services have been widely adopted by academic and research libraries since their introduction in 2011. Libraries implementing a library services platform replace multiple incumbent products, including their integrated library system, any formal or informal electronic resource management tools, link resolvers, and knowledge bases. Since their introduction, there has been a strong trend for academic libraries to shift away from integrated library systems and standalone electronic resource management tools and to implement library services platforms offering more unified resource management capabilities.

Coral: An Open Source ERM System

Virginia Tech plans to migrate from the ERM module of Sierra to the open source Coral ERM system. Coral was initially created by the Hesburgh Libraries at the University of Notre Dame, though interest in the software has expanded and a broad community of organizations contributes to its development. These organizations include the libraries of North Carolina State University, CalTech, Texas A&M University, and Rice University as well as SirsiDynix, which integrates Coral as part of its BLUEcloud Campus suite and BibLibre, an open source development and services firm in France that supports Koha and Coral for several French universities. The development communities for Koha and Coral are collaborating to create mutual points of integration to enable the two products to work well together with minimal duplication of data entry.

Services from ByWater Solutions

An important aspect of Virginia Tech's technology strategy relates to its confidence in ByWater Solutions as a support provider able to complete the migration quickly and help assemble an environment that meet its needs based on multiple open source components. ByWater Solutions is an active player in the global Koha development community and collaborates with other support and development firms as well as other open source initiatives to support an evolving environment responsive to its needs.

ByWater Solutions provides Koha support services primarily to libraries in the United States. Its customers include public, academic, and special libraries. Overall, the majority of its support contracts are for public libraries; however, in recent years the company has seen a growing number of academic libraries contract for its services (see Figure 1). Just under one thousand libraries have contracted with ByWater Solutions to provide Koha support services. Of this total, about 15 percent

are academic libraries. Figure 2 shows the implementations of ByWater Solutions by library size.

Implementation Timeline

Virginia Tech has planned for a very aggressive implementation schedule. The library anticipates completing its migration from Sierra to Koha by May 2018.

Bucking the Trends

The technology strategy that Virginia Tech is taking forward deviates from trends that have otherwise prevailed among academic libraries in recent years. Not only has the library opted for an open source integrated library system instead of a library services platform, but it has also chosen separate routes for resource management and discovery.

Virginia Tech has selected EBSCO Discovery Service as its strategic discovery environment and will not implement a resource management solution that does not support it. More generally, at least some libraries want to select their patron-facing discovery environment independently of the systems their staff members use for collection management. Counter to the prevailing tides, Virginia Tech ultimately opted for a resource management environment that would support its decision to use EBSCO Discovery Service. In this case, it meant a strategy based on open source components, each with distinct focus on print and electronic resources.

The adoption of library services platforms represents a major trend in academic libraries. The movement is not universal, as seen by selection of Koha by Virginia Tech. According to Kucsak, factors leading to this approach included a high degree of confidence in ByWater Solutions to deliver an efficient and cost-effective environment and an interest in using less cumbersome tools for routine areas of operation to allow the library to focus on new areas of service to their university in other strategic areas.

ByWater Solutions to Offer FOLIO Services

ByWater Solutions has become well established as a support services firm for open source library software, primarily for the open source Koha integrated library system. The company announced that it will also offer support for the open source FOLIO library services platform in partnership with EBSCO Information Services. ByWater Solutions will provide services to libraries to implement and support FOLIO hosted on EBSCO's technology infrastructure. EBSCO will also provide data services, such as access to its knowledge base and to EBSCO Discovery Service. ByWater Solutions will also explore using FOLIO microservices and apps to enhance services for its current clients using Koha and other open source components.

FOLIO remains in its development phase with an initial release of functional software expected in 2018. Through this partnership between ByWater Solutions and EBSCO, it is anticipated that libraries will be able to migrate and place FOLIO into production in 2019.

Ex Libris Launches Esploro

Ex Libris has launched Esploro, a new product it positions as a research services platform, extending Alma to address a broad array of needs by a university to capture, assess, and showcase the activities of its researchers. The data and analytic tools in the platform can strengthen and refine grant proposals to advance the work of researchers and to advance the standing of the institution.

Esploro brings together three key university stakeholders:

- The institutional research office, which manages and administers grants across all departments in the university. These offices facilitate administrative details in the grant seeking process and ensure that projects fully comply with requirements stipulated by the funding organization. Esploro enables the research office to track all research publications and other data needed in support of grant compliance.

- Principal investigators and others involved in research projects.
- Librarians supporting the research agenda of the institution. In recent years, libraries have sought to move beyond traditional services of simply providing access to scholarly literature to also provide support in other aspects of the research process. Esploro provides a platform in support of librarians collaborating with researchers and to leverage their skills in metadata management and subject expertise.

At the core of Esploro lies a repository of research objects, which primarily includes scholarly articles and also includes research data and other creative works. This repository is populated through the automated capture of objects from sources, such as external and institutional repositories, as well as from direct deposit by researchers or their assistants. These objects are enriched with metadata created both through automated processes and through the expertise of librarians.

The research object repository feeds other components of Esploro, such as generating profiles for individual researchers and a module of reports and analytics. These profiles and reports can both be used internally by the key stakeholder groups as well as for public exposure. Esploro will also provide APIs to enable other platforms or organizations to tap into the resources or analytical tools.

Esploro has been built as an extension of Alma, leveraging its functionality and content to address this additional domain of activity within the institution. It will integrate with the Primo or Summon discovery services, both for helping to populate the research object repository and for exposure of resources. Esploro will also be able to take advantage of Pivot, which includes a comprehensive aggregation of funding opportunities available to the research community. The integration of data from Pivot enables researchers to track grant opportunities offered by funding agencies, so that researchers will be aware of all possible sources and optimize their process for submitting grant applications.

The development of Esploro is underway, though not currently available as a production product. Ex Libris has engaged five major institutions as development partners to inform the design and functionality of the initial release and its future roadmap. These institutions include the University of Oklahoma, the University of Iowa, the University of Miami, Lancaster University in the United Kingdom, and the University of Sheffield in the United Kingdom.

Smart Libraries Q&A

Each issue, Marshall Breeding responds to questions submitted by readers. Have a question that you want answered? Email it to Samantha Imburgia, Associate Editor for ALA TechSource, at simburgia@ala.org.

Our library has begun a project to capture photos of the community through Scan Day events, helping local agencies, like the Fire Department, scan and index their photo/negative collections. We would also be interested in using crowdsourcing as part of our program. Can you suggest some ideas or resources use crowdsourcing to extend or enhance our photo collection? We are aware of ResCarta but would be interested in additional options or ideas.

The development of a digital collection includes several components. These include the technical platform that will manage the digital files and associated metadata, the creation or collection of the digital objects, and producing metadata to describe each object. ResCarta is one of the several technical options available to host and manage collections of digital content items.

The creation of the digital objects will take place through some kind of scanning or digitizing operation or by ingesting those created digitally. Many libraries, such as yours, will scan their photographs, negatives, or other physical items to create digital files. Any photos of recent vintage are likely to be created through digital cameras or smartphones. These born digital photographs don't need to be scanned but can be ingested directly into the digital collection.

Describing the objects in a digital collection will usually require much more time and effort than the more technical work of scanning or importing the digital files. Capturing information such as the date of the image, its location, buildings shown, any people shown in the image, or events represented is essential to providing the ability to browse or search the collection. In many cases, much of this information is not readily available for historic photos. Librarians may be able to track down some data through historic research, but this can be a time-consuming process. Some projects have used an approach called crowdsourcing to gather additional information about historic photographs. The general idea involves

displaying the photographs publicly and inviting the general public to contribute any information that they may recognize. Crowdsourcing can lead to better identification of dates, places, and people. Even when not definitive, these leads can help the library track down information that may otherwise remain obscure.

The Library of Congress, for example, helped launch the Flickr Commons project in 2008, where it uploaded thousands of historic photographs and invited the public to contribute tags to help describe them. The number of organizations participating in Flickr Commons has since expanded (see https://www.flickr.com/commons). Other organizations with historic photographic collections can join, but the photos must be free of copyright restrictions so that they can be displayed openly.

The key factor to using crowdsourcing successfully relates to broad and easy access to increase the possibility that they will be seen by individuals that might recognize elements in the photographs. There might be ways to use social media to expose photographs to targeted communities likely to be familiar with the places and people pictured. In addition to photo-oriented services such as Flickr, a library might use its social media presence, such as Facebook, Twitter, or Instagram accounts, to selectively post photos and invite its community members to contribute any information they recognize. The more that the library can expose the materials to groups of individuals interested in and knowledgeable about the subject matter, the more data it is likely to see contributions of tags and data to help it describe the collection. As these communities learn about and engage with the photos made available, individuals may also be interested in offering photos from their own personal collections for inclusion in the project.

These approaches may be useful to help a library expand and enhance a digital collection of historic photos. But don't expect a landslide of information. In most cases, the volume of contributions will be modest and considerable research will still be required to describe collections of historic photos. Any data received through crowdsourcing is helpful, but it's important to have realistic expectations regarding its impact on describing a collection.

Questions or suggestions for topics in future issues?

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