



Smart LibrariesTM

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Smarter Libraries through Technology:

Two Paths to a New Generation of Discovery in the Big Apple

By Marshall Breeding

Today's libraries face an incredible challenge: to deliver powerful Web sites that engage users with their collections and services. Because of their experience with modern websites, library users expect sophisticated functionality offered through an easy to use interface. As the web grows ever more social, networks like Facebook and LinkedIn have not only become increasingly popular, but increasingly imitated--in recent weeks we've seen the launch of Google+ which seems to be on track to provide new competition to the mix. Current expectations for a library Web site include a sharp appearance, rich content, intuitive usability, and a single search that provides access to all available information and materials, all permeated with social features that engage library users with the library and with peers of similar interests. Building library Web sites that stand up to these expectations takes a lot of creative use of technology.

In this issue of *Smart Libraries Newsletter* we tell the stories of two major libraries in New York City that have taken strikingly different paths to similar destinations. Both libraries are migrating into their second generation of discovery services. The New York Public Library will shift away from Encore and Queens Borough Public Library will replace AquaBrowser—both highly respected products, but no longer deemed ideal for the specialized needs envisioned by these two libraries. NYPL will implement BiblioCommons, the rising star in the arena of public library discovery services that distinguishes itself through its thoroughly social approach to exploring library collections. Neighboring Queens library has developed its own integrated technology platform, constructed out a set of building blocks including commercial library automation and repository products created and customized by VTLS and a variety of open source applications--especially Drupal--that have been customized and integrated by the library's own team of programmers. Both libraries rely on deep partnerships with an external vendor, but these relationships take quite different forms. NYPL works with BiblioCommons in a way that allows them to use their socially-oriented discovery service in its current form, but also to gain a stake in the company in a way that influences the direction of its future development. Queens has taken a more hands-on approach. By making use of customized software created by VTLS, Queens takes the driver's seat in the design of the overall platform, especially in the interfaces with which its patrons will interact.

The efforts of these two libraries reinforce for me how different the role that discovery plays for public libraries is

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from the one it plays in the academic world. While academic and research libraries strive to create discovery environments that maximize access to their ever growing investments in scholarly articles, public libraries urgently seek to deliver interfaces that forge bonds with their users, stressing engage-

ment with their collections of books and e-books, and highlighting their services and programs. Both of these libraries will shift in the coming weeks to their new generation environments, providing interesting opportunities to gauge the relative benefits of their respective strategies and technologies.

New York Public Library Partners with BiblioCommons

The New York Public Library plans to make a major change in the way it offers access to its collections to patrons. This fall, NYPL will implement BiblioCommons, shifting from its current Encore-based catalog. In preview mode since June, NYPL plans to make BiblioCommons its default patron search interface in September 2011. BiblioCommons, a member of the genre of next-generation library catalogs, not only delivers a modern search environment with a discovery experience that includes both faceted navigation and collection browsing capabilities, but it also embraces a more dynamic and social character, including options to share and exchange information with other users. BiblioCommons provides a complete online catalog replacement, though NYPL will continue to rely on Innovative's Millennium ILS as its core automation environment.

According to BiblioCommons President Beth Jefferson, NYPL has not only subscribed to its current product, but has also invested \$1 million in the business. This investment will support BiblioCommons' capacity to develop of its next generation of features.

NYPL sees BiblioCommons not just as a replacement for its current catalog, but as a platform that it can use as the basis for other kinds of services. As a large library with complex needs, NYPL will take advantage of the ability to extend the BiblioCommons platform through the use of application programming interfaces. In some areas, NYPL and BiblioCommons will collaborate on the development of new capabilities. The library will also have the ability to create extensions to BiblioCommons that are specific to its interests by building on top of its platform of APIs. In this way, the library is not limited to the out-of-the-box capabilities of the product, but can integrate and extend it to its specific requirements.

BiblioCommons offers a suite of APIs that can be used to support the creation of custom features and functionality and to make connections into external systems. NYPL expects to work with BiblioCommons collaboratively, in some cases expecting the company to produce enhancements to the system, and in others will build its own capabilities on top of the platform of APIs.

Rather than creating its own system using open source software, NYPL chose to invest in a company that brings technologies to the table beyond what they would be able to create internally. By subscribing to BiblioCommons and making investments in the company, NYPL will be able to accelerate its development roadmap.

New York Public Library: A World-Class Municipal Public Library

NYPL serves the New York City boroughs of Manhattan, the Bronx, and Staten Island, with a total of ninety locations, including four research libraries. The boroughs of Queens and Brooklyn operate independent library systems. Queens Public Library has implemented the Virtua ILS; Brooklyn Public uses Millennium.

NYPL implemented Millennium in 2008 to support both the research and the branch libraries as a combined system. The research libraries had been using Innovative's INNOPAC system since 1988. The branch libraries operated on a separate Dynix system. Millennium provided a technology platform to unite the two sides of the library system that previously had been separate due to major differences in requirements between a major set of research collections and the branches of a major municipal library system.

BiblioCommons Makes the Big Leagues through Social Discovery.

BiblioCommons, a relative newcomer on the library discovery product scene, was created by a company of the same name based in Toronto led by Beth Jefferson. *Smart Libraries Newsletter* featured BiblioCommons in its August 2009 issue, covering its background, launch, and progress through that time. Since the initial pilot implementation in the Oakville Public Library in July 2009, BiblioCommons has been implemented by libraries throughout Canada, the United States, Australia, and New Zealand. Other major municipal libraries in the North

America implementing BiblioCommons include the Seattle Public Library, Boston Public Library, the Ottawa Public Library, Edmonton Public Library, Vancouver Public Library, and the CLEVNET consortium in Ohio; and the Santa Clara County Libraries in California. It has been implemented by the Christchurch City Libraries in New Zealand and the Yarra Plenty Regional Library in Australia. As a small company that only recently launched a Web site beyond a single page placeholder, BiblioCommons has relied followed a relatively low-key marketing approach, but one that has landed a number of high-profile public library systems.

To date, BiblioCommons has seen adoption primarily in public libraries. NYPL also includes four major research libraries. Jefferson states that, “Our product appeals to the research libraries of NYPL in its potential to help make connections among researchers into communities of interest. In this same vein, we see that BiblioCommons can also help establish connections among teachers.”

BiblioCommons Technical Details

According to Marty Tarle, Vice President for Engineering, BiblioCommons fully embraces cloud computing technology in its design and deployment. The application has been built to operate as multi-tenant software-as-a-service, where a single code base supports all subscribing libraries. It has been designed in both its internal architecture and deployment strategy through a cloud-based infrastructure to scale to support extremely high use by its rapidly growing customer libraries.

BiblioCommons relies on a technology platform constructed from an arsenal of mostly open source components. It makes use of PostgreSQL as its



core relational database, Apache Lucene and SOLR for relevancy-based search and retrieval, and runs in a Java Virtual Machine with software written in Java and Ruby on Rails. Critical infrastructure, internal synchronization, and business logic is written in Java with Ruby used primarily for front-end interface routines. The environment relies on the relative new nginx (<http://www.nginx.org/>), which has gained a reputation as a high performance and lightweight Web server for delivering static pages.

The hosting model for BiblioCommons follows a hybrid approach, making use of servers that reside in cloud services along with its own equipment. As of July 2011, BiblioCommons reported that its service was deployed using about 30 Amazon Machine Instances (AMIs) through the Amazon Elastic Compute Cloud (EC2), supplemented by another set of 30 servers housed in its own co-location facility. Over time, BiblioCommons expects to increasingly shift to cloud-based infrastructure as it scales in capacity to support additional libraries.

BiblioCommons maintains separate indexes for each subscribing library system. Even though all libraries share the core infrastructure, as patrons search, they see results only from the collections of their own organization. The service takes a more centralized approach for user records, providing a larger pool of participants for social features and enabling interactions among patrons associated with different library systems.

Functioning as a complete online catalog replacement, BiblioCommons has invested heavily in developing connectors to synchronize data from an underlying ILS and to display real-time status and availability information. Connectors have been completed for SirsiDynix Horizon and Symphony, Innovative Interfaces Millennium, and Evergreen; support for Polaris is underway. The connectors make use of API's and other techniques; the Integrated Discovery System-Discovery Interface (ILS-DI) protocol has yet to become implemented by the major systems in such a way that would allow a more standard approach for communicating with a library's automation system.

Navigating Privacy Issues

BiblioCommons aims to help patrons find interesting materials to read next rather than simply returning search results in response to keyword queries. A thoroughly social approach for library patrons to interact with the library catalog stands out as the distinctive element of BiblioCommons. The environment encourages users to create their own personal collections and reading guides which lay the foundation for engagement with the library and fellow readers in various ways. Social features include sharing their reading experiences with others, to rate and review material and to create private or shared lists of titles. BiblioCommons provides ample opportunities for library users to share information regarding their reading interests in order to gain insights on interesting materials from fellow readers. Patrons are provided with the ability to easily manage the visibility of their contributed content, anticipating the general concerns libraries may have regarding guarding the privacy of patrons.

Social networking has acclimated individuals in our society toward sharing considerable information about themselves, though with ever more demands for increased control over what is shared and to what audience. Librarians gener-

ally hold a very high standard of protecting patron privacy. As library discovery products increasingly adopt social networking characteristics, they need to balance the benefits of sharing information while giving patrons the ability limit or grant access to contributed content according to their preferences. NYPL worked with BiblioCommons to develop a privacy policy in a frequently asked questions format to explain the privacy options and controls available to users. (see <http://nypl.biblio-commons.com/info/privacy>)

As part of its due diligence prior to implementing BiblioCommons, NYPL engaged the security firm Cigital (www.cigital.com) to audit its software and security practices, which gave generally positive results and led to even tighter controls.

Today BiblioCommons stands as a major contender in the discovery services arena for public libraries. The successful deployment in these major libraries demonstrates not only that its approach resonates with the current aspirations that libraries hold for the way that they aim to deliver their services with increasingly social flavor, its technical platform can scale to meet the demands of some of the largest libraries.

— Marshall Breeding

Queens Library Develops daVinci to Deliver its New Integrated Web Site

The Queens Borough Public Library plans major changes to its public Web presence, with a shift from an online catalog based on AquaBrowser Library to an entirely new environment based on a technology platform it developed called daVinci created through collaboration with VTLS. This new environment will feature a single search spanning the library's Web site, its physical holdings managed within Virtua ILS, and its digital collections managed in a Fedora repository and will offer a range of social features to facilitate engagement of library users with its collections and services.

Queens ranks as the busiest public library in the United States, with over 23 million circulation transactions reported in 2009. The library's collections total over 7.1 million items and it serves a very diverse population with a central library in Jamaica and 62 branches throughout the borough. As one of the top libraries in the United States, the Queens Borough Public Library requires a very sophisticated and flexible tech-

nology environment to support its operations and to power its Web presence.

The Queens Library has gone through an interesting set of transitions related to its automation environment. The library operated a DRA library automation system since 1989, which was due for replacement by about 2006. Queens implemented AquaBrowser as its next-generation catalog in August 2005, one of the early adopters of this product in the United States. Queens had initially selected Horizon 8.0 from Dynix Corporation in March 2006 to replace its DRA system, but that agreement failed to come to fruition as a consequence of the merger of Dynix with Sirsi Corporation and the termination of development of the new Horizon 8.0 platform. In 2009, Queens Borough Public Library brought a lawsuit against SirsiDynix, which was ultimately settled out of court under undisclosed terms. In January 2008 the library signed a contract with VTLS to replace its DRA Classic system with Virtua, going live in July 2008 following an expedited six-month

implementation process. Queens' selection of Virtua was not a standard procurement to implement an ILS, but one that required specific customizations and an ongoing development partnership between the two organizations. In the initial implementation, Virtua replaced DRA as the internal automation environment, relying on the existing AquaBrowser discovery product as the public interface. In this way, the transition from DRA to Virtua was transparent to the library's users, despite a major transition that took place internally as library personnel adapted to a new system for circulation, cataloging, acquisitions, and other operational areas.

In this current move, the library will completely revitalize its public Web presence, replacing its AquaBrowser catalog and Web site with daVinci, an environment composed of a suite of components from VTLS and open source developments extended and integrated by Queen's own development team. The daVinci platform relies on the Virtua ILS and the Chamo online catalog produced by VTLS, as well as the Oracle database engine embedded in that platform. Queens has implemented and extended the open source Drupal content management system to power its public and staff Web sites, using Apache SOLR to support relevancy-based search. The daVinci environment will also include a digital asset management component based on the open source Drupal Commons repository with the VITAL repository application supplied by VTLS. The integration of VITAL remains in development with deployment expected by early 2012. Queens has also programmed e-commerce capabilities that allow library patrons to pay fines and fees through an online credit card processing module based on a Drupal extension.

According to Wes Trager, the Chief Technical Officer of the Queens Library, daVinci was conceived to deliver a consistent experience to the visitors of the Web

“daVinci was conceived to deliver a consistent experience to the visitors of the Web site that blends the traditional ILS and online catalog functionality with a sophisticated Drupal-based front end that supports social features and incorporates content created by the library's community of uses..”

site that blends the traditional ILS and online catalog functionality with a sophisticated Drupal-based front end that supports social features and incorporates content created by the library's community of uses. While making use of technology components produced by an outside vendor, it gives the library complete control of all aspects of its environment directly experienced by its users.

The daVinci platform offers a single search capability, but in a different manner than other discovery products. The usual arrangement between integrated library systems and discovery interfaces involves a continual transfer of data, a process that Queens has followed during the five years it has been using AquaBrowser. The harvesting, synchronization, and real-time status lookups comprise a complex connection layer between the ILS and the discovery interface. Queens' daVinci platform avoids this overhead by relying on shared data and index structures. VTLS and Queens agreed on a search engine strategy based on Apache SOLR. With Virtua, Fedora, and Drupal each configured to directly populate SOLR indexes, a single search environment can be offered without the need for harvesting and synchronization. In contrast to the three to four hours of processing needed to transfer data from Virtua to be indexed in AquaBrowser each night, daVinci populates its SOLR indexes as part of its standard operation.

Queens will use Drupal as the content management system to present the end-user interface and to manage the underlying data beyond that held in the Virtua

ILS or in Fedora. Content stored in Drupal will include the content of the library's Web pages, news announcements, frequently asked questions, blogs, and subject material created by Queens librarians, pages specific to each branch facility, community-contributed content, and ratings and reviews of materials in the Virtua catalog. By using SOLR as the search engine associated with Drupal all of this content can be easily retrieved in search results alongside results retrieved from Virtua and Fedora.

The collaboration with VTLS allows the library to take full control of the user experience, while relying on components supplied by a commercial software development firm for core automation components. The strategy makes use of technology produced by a vendor, but in a way quite different from the traditional arrangement where a library implements software as delivered. The development team at Queens creates the integration among all the components, shapes the interfaces presented to library users, including the creation of custom Drupal modules. As part of the Queens enhancements, VTLS has created API's out of Chamo to expose all its functionality, providing the technical interfaces needed to tightly integrate it within the daVinci environment.

The Queens Borough Public Library anticipates making the transition to its new daVinci-powered Web site by September 2011.

— Marshall Breeding

Library Technology News in Brief

Excerpted from Press Releases Posted on Marshall Breeding's Website (<http://www.librarytechnology.org/>)

EasyBib.com Redesigned for Better User Experience

New York, August 10, 2011 – The website for EasyBib.com, the world's largest online bibliography service, has been newly redesigned and enhanced, to make navigation even more intuitive for students, instructors and librarians.

As part of the redesign process, every part of the site was scrutinized to make sure it was as up-to-date and user-friendly as possible. Now, with the redesign, writers will have a more robust EasyBib experience when they take advantage of these new features:

- A large, easy-to-use footer, to navigate to any section of the website
- Bubo, the mascot, which will playfully provide updates
- The site's blog, redesigned to host fun student-related content, as well as EasyBib updates
- A Google Translate link allowing the site to be read in many different languages
- Advertisements for the free service that are designed to blend well with the rest of the site

In addition, the redesign will make it easier for writers to use some of the great newer features of the site. One recently-added feature is the iPhone application, which makes it possible to use an iPhone to quickly scan the barcode of a book and get an accurate MLA, APA, or Chicago style citation. Also recently added to the site is the Website Evaluation Tool, which shows researchers which resources are the most credible to cite and helps them understand the criteria used to evaluate those resources.

“Even though we had a design change a little over year ago, we continuously think about how to improve the experience for our 27 million users, and design is a large part of that,” commented Neal Taparia, EasyBib co-founder. “This site now has a modern look consistent with the other websites students frequent and it's even more intuitive and easier to navigate. Plus Bubo, the new mascot, will be a fun way to share information with our users.”

LibLime Academic Koha to be used by UOHK Library School Students

In August, 2011 students at The School of Continuing and Professional Studies at The Chinese University of Hong Kong will be using LibLime Academic Koha as part of their coursework. Students in Professor Derek Lui's “Information Technology and the Library” course will have the ability to learn cataloging and classification firsthand by creating records in their own ILS.

LibLime will provide the class and Professor Lui with a hosted installation of LibLime Academic Koha, free of charge. This program will allow the students unlimited access and all privileges associated with the staff end of the ILS as well as all OPAC functionality for the duration of the course. Using this version of LibLime Academic Koha, students will be able to create, edit, and delete MARC records, review them in the OPAC, and see how the ILS indexes work for retrieval.

“Koha is a real-life Integrated Library System being used by many libraries, from small to large, worldwide. It provides a wide spectrum of functions for librarians to manage the daily operations of a library,” said Professor Lui. “With LibLime Academic Koha with Class, my students can gain hands-on experiences in using and administering an ILS. This also allows them to understand some complicated technical topics such as MARC structure and Z39.50 more easily.”

LibLime's Koha with Class program is designed to give library school faculty a chance to embed the use of an ILS into their coursework and curricula. Students gain practical experience with library automation software as they prepare to enter the library workforce. LibLime provides free support for these Koha with Class installations, and already there are dozens of faculty members throughout North America taking advantage of this program. LibLime is looking to expand the program overseas to support librarianship at an international level.

EBSCO Publishing and Innovative Interfaces Demonstrate Partnership with EBSCO Discovery Service and Encore

IPSWICH, Mass. — August 9, 2011 — In an effort to improve accessibility and usability for customers requesting various ports of entry into EBSCO Discovery Service (EDS), EBSCO Publishing (EBSCO) and Innovate Interfaces, Inc.

(Innovative) are working to develop improved access into these resources via Innovative's Encore discovery platform. The result of the partnership is a smarter experience for mutual customers and library users who begin their search from Encore. EDS will be available via a dedicated API with enhanced functionality.

Executive Vice President of Technology and Chief Information Officer for EBSCO Publishing, Michael Gorrell, says a dedicated API allows users accessing EDS through the Encore platform access to the valuable resources available in EBSCO Discovery Service. "EDS has quickly become the discovery service for hundreds of universities around the world. EDS provides a full-featured experience for end users. In other words, we have brought together a comprehensive index and a single search approach, but we also offer a true academic and powerful environment in order to facilitate a comprehensive discovery experience. As much as we've invested into our native user interface, we also must accommodate the users who may start their research on a partner platform such as Encore. This agreement lets users who are in the Encore platform access the power of EDS from within the Encore user environment."

For Innovative, partnering with EBSCO to satisfy the needs of mutual customers is a key strategy for the company. This most recent announcement builds on a long-standing relationship with EBSCO in which the two companies continue to explore areas where collaboration would benefit libraries. According to Innovative Interfaces' Vice President, Encore Division, John McCullough, Encore users will benefit from this arrangement. "Our goal with Encore is to offer users the most successful library discovery experience possible and providing access to services like EDS from within Encore is a fundamental part of that strategy."

Encore Synergy's Services Oriented Architecture seamlessly integrates powerful discovery services like EDS into the user experience without the limitations and trade-offs of 'one size fits all' systems. McCullough expanded on the partnership saying, "with libraries facing an increasingly complex world of content and technology, it's a Web imperative that discovery systems interoperate and scale collaboratively to ensure that libraries have the freedom to choose best-of-breed functionality for their users."

ProQuest Acquires U.K.'s Expert Information

August 5, 2011 (ANN ARBOR, Mich.) -- ProQuest has acquired U.K.-based Expert Information, publishers of

Index to Theses and Theses.com, premier sources of hundreds of thousands of citations and abstracts for British and Irish dissertations and master's theses. The addition of Expert Information will continue expanding the global impact of ProQuest's acclaimed dissertations publishing program, which includes ProQuest Dissertations and Theses, the world's most widely consulted resource for graduate research.

"ProQuest's acquisition of Expert Information is a significant milestone toward the worldwide, integrated access to graduate works demanded by serious researchers," said Rod Gauvin, ProQuest Senior Vice-President, Publishing. "The content in Index to Theses and Theses.com captures landmark works and emerging research from the U.K.'s most influential universities. Including this deep historical archive strengthens ProQuest's dissertations publishing program and enables us to serve a much broader range of the world's researchers."

Expert Information abstracts and indexes more than a half million dissertations and theses, covering more than seventy years and continually growing by nearly 20,000 records per year. The content has been available via ProQuest through its product PQDT: U.K. & Ireland. Now, as part of the ProQuest family, the publishing program behind Expert Information's products will expand to meet the global information needs of researchers.

Expert Information joins one of the world's premier dissertation publishing programs. Approximately 99% of North American graduate degree-granting institutions contribute their students' works to the ProQuest Dissertations and Theses database, enabling them to be easily discovered and accessed. Chosen by United States Library of Congress as the official archive of American dissertations, ProQuest Dissertations & Theses encompasses more than one quarter of a billion pages. Its 1.4 million digital dissertations and 2.9 million records create a unique and continually growing trove of research. ProQuest Dissertations & Theses is relied upon as a source of enlightening information as well as a pivotal tool for new scholars who aim to make their research available to the world's intellectual communities. A team of scholars and technologists, who combine their talents to make it accessible, reliable and supported by continually advancing technology, manages the archive.

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