



Smart Libraries™

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Smarter Libraries through Technology:

Discovery Services Improving

By Marshall Breeding

I continue to be impressed with the ongoing improvements in library resource discovery services. These services aim to allow library users to access library resources with the same level of ease that they experience with the general Web through search engines like Google or Bing. But ease of use isn't the only concern. It's imperative that these discovery services deliver search results consistent with library values, which differ considerably from what applies in the commercial Web.

For library discovery services, the universe of content addressed corresponds to all of the material that a library

considers its collection, or in some contexts it might be the collective body of material held across all libraries. It spans both representations of the physical items owned by the library; the material within electronic resources to which libraries subscribe; digital materials created by libraries, archives, or heritage institutions; or other material selected by librarians as appropriate for a library collection. Even though the search mechanisms may be "Google-like," the scope of search excludes extraneous and unreliable content.

Given this ideal scope of all the material in the library's collection, the discovery services are working toward increasingly comprehensive coverage. To review the basics, the genre of Web-scale or index-based discovery services relies on access to the materials for the purpose of generating the index. Publishers of electronic resources, for example, would provide a discovery service provider one-time access to the full text of articles or to its corresponding metadata. Once the content is in the index, library patrons that use the discovery service would see these items in search results and when selected, items would link to the content provider's server for access. Not all providers are able or willing to provide copies of their content to the creators of discovery services, resulting in some gaps relative to the ideal scope of discovery. Fortunately, these gaps are closing. I observe a fairly steady stream of announcements of partnerships between

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content providers and developers of discovery services. With many of the general resources already covered, many of the recent announcements involve foreign language or specialized materials. I'm optimistic that gaps in coverage in the discovery services will continue to narrow.

The other area where the state of the art in library discovery is gaining definition is in relevancy ranking and techniques to guide users toward the most important or interesting items. Commercial search engines have a lot of advantages in this area. The sheer popularity of an item as gauged by the number of times selected in results, the number and quality of in-bound links, and other factors together contribute to sequencing the result candidates that match a user's query term. They benefit from very sophisticated relevancy algorithms and vast amounts of use data. The commercial search engines also track, or at least infer, lots of data about the person entering the query, such as physical location, search history, and other behaviors within the search environment, and often beyond it. When taken together, all these factors yield almost magical relevancy ranking so that the desired item almost always appears at the top of the results list. But the values behind the search process are commercial, mostly related to optimizing ad revenues.

We expect library discovery services to operate on the basis of an entirely different set of principles or values. Relevancy must be calculated according to such things as scholarly or literary value and alignment with the interests or discipline of the searcher. Some of the techniques of the general search engines may be helpful, but these library-oriented discovery services must also exploit other clues as they guide users to content.

It's important to get beyond sole reliance on matches of the keywords in a user's query. In many cases, this can lead to poor results. From a keyword perspective alone, secondary or derivative materials often seem stronger matches than the related primary work. I often use a simplistic "Harry Potter" search example to observe relevancy. In the absence of use-related factors, the results will usually display the analytical materials and

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obscure formats ahead of the J.K. Rowling novels. By counting word occurrences, books about Harry Potter will seem disproportionately relevant. Adding consideration of even simple measures such as the number of copies held or circulation frequency would easily identify the items of more likely interest.

The current phase of development of library discovery services appears focused on increasing the sophistication of relevancy and tuning the interfaces to deliver better results from library collections. This issue of *Smart Libraries Newsletter* includes a feature on Summon 2.0, which employs a variety of interesting techniques to improve the quality of its search performance. We can be sure that the other competitors in Web-scale library resource discovery services are also refining and enhancing their products. The ScholarRank technology developed by Ex Libris as the basis for Primo's relevancy ranking comes to mind. ScholarRank technology makes use of inferences mined from link resolver logs and a variety of other factors to calculate relevancy based on scholarly importance.

Today discovery services exist mostly as an interface that is somewhat separate from the core automation system used in a library. For access to the local physical collections, the online catalog associated with the ILS remains available and is often preferred by librarians or expert users for accessing these materials. Discovery services, lacking some of the nuances and structure of online catalogs, in many cases have not won over these users. I anticipate a time when online catalogs will become extinct. It's imperative that the capabilities of discovery services satisfy all types of users by the time these transitions take place. The pace of development in this area gives me some encouragement that the state of the art of discovery services will ultimately meet the expectations of librarians and the full spectrum of library users.

Serials Solutions to Launch Summon 2.0

Serials Solutions will launch Summon 2.0, a major update of its Web-scale discovery service, expected to be available in June 2013. Summon 2.0 brings in a number of new major features, as well as optimizing some recently added capabilities. As part of the transition to Summon 2.0, Serials Solutions will make improvements to its underlying technical platform. Serials Solutions launched the genre of Web-scale, index-based search,

announced in January 2009, with its first live implementation in July 2009 at Grand Valley State University.

Web-Scale, Index-Based Discovery

Summon is designed specifically for the needs of academic libraries. Serials Solutions also offers AquaBrowser, a discovery inter-

face more oriented toward public libraries. In the category of Web-scale discovery services, Summon competes directly with Primo and Primo Central from Ex Libris, EBSCO Discovery Service from EBSCO Publishing, and OCLC's WorldCat Local. The services within this genre all aim to provide access to a broad representation of library resources at a granular level, enabled by indexes constructed in advance through metadata or full text made available by content providers.

Serials Solutions reports that Summon now indexes more than 1.1 billion unique content items. Each entry in the index represents a unique item, which involves creating composite records when duplicates are detected in multiple sources. The management of the Summon index is based on a proprietary match and merge technology, resulting in richer composite records blended from multiple sources that may each carry different data. The company indicates that more than 500 million duplicates have been merged in the current index.

Advancing Summon to a New Level

Summon 2.0 builds on the foundation of index-based search established in the original version, layering in a variety of new tools designed to assist users in the research process, beyond the basic presentation of search results. As the volume of material indexed by discovery services such as Summon expands, one of the key challenges lies in finding ways to guide the user toward the best results. Many of the new features in Summon 2.0 aim to provide additional assistance to the user by highlighting important resources or guiding the search process to improve the quality of the results relative to the topic at hand. This additional layer of assistance is accomplished through a combination of features that bring librarians

into the discovery process, providing opportunities for them to engage with users in different ways.

Delivered through Software as a Service

Delivered through multitenant software as a service, Summon has continually been enhanced with new features during the four years since launch. This software delivery model allows the developer to deploy new features or fix anomalies in small incremental releases for the entire base of institutions using the product. Bug fixes can be implemented transparently. When new features become available, Serials Solutions give its customer libraries the ability to control when to activate them through the administrative console used for configuring local options. Libraries will likewise be able to manage the timing of when they make the transition to Summon 2.0, which encompasses a cluster of new capabilities and a new and enhanced user interface.

Serials Solutions, consistent with the prevailing trend in the software development industry, follows an agile methodology, developing small units of functionality that can be fully tested and deployed in a few weeks. This approach contrasts with the traditional waterfall model where programmers address improvements throughout a complex application in a longer development and testing cycle.

New and Optimized Features

Summon 2.0 brings significant changes to the user interface. Currently, Summon is based on a two column interface, with facets and other search refinement tools presented on a narrow left column and the search results using the remainder of the page. Summon 2.0 divides the page

into three columns, narrowing the results area a bit, making room for a column on the right, populated with different tools for the user according to the context of the session.

Some of the major new features in Summon 2.0 include:

Summon Topic Explorer. The initial release will include around 50,000 topics, which Serials Solutions plans to continually expand. The company also intends to cover topics in many languages, expanding beyond the English to include thousands in Chinese and German, with others added over time. Topic Explorer panes are created based on usage data mined from Summon, content from commercial and open access reference resources, and materials contributed by librarians. In addition to descriptive information and links to relevant resources, topic explorations can also include a profile of a local subject librarian available for consultation.

Summon Scholar Profiles display information about authors or researchers triggered in search queries. These profiles, based on the 3 million entries in the ProQuest Scholar Universe, contain brief biographical information about a scholar, related topics of interest, and links to specific works by or about the person.

Automated Query Expansion enhances the query entered by the user by automatically including related terms likely to bring in other relevant results. This feature assists users who may enter informal terms and may not be familiar with the all of the specialized vocabulary in a discipline. Users that want precise control of their query can disable this feature.

Summon 2.0 also includes some capabilities that were recently announced and implemented, but were less optimized given the limitations of the original interface design. Many of these were covered in the December 2012 issue of *Smart Libraries Newsletter*.

- The database recommender, activated by trigger words or phrases in the query, highlights specific databases or other resources that the user might want to explore directly in addition to the specific items in the search results. The recommendations are based on local trigger words or phrases or those shared in common among other libraries using Summon.
- Best bets, based on trigger words in the query supplied by local librarians, activate the presentation of links to resources the library wants to feature, such as subject guides, reference resources, or specialized collections.
- Related search suggestions are presented to users dynamically as they scroll through search results offering scholarly and multilingual suggestions for query expansion and refinement.
- Integrated chat and reference widgets can be incorporated into the Summon interface, based on a set of supported services that a library may be involved with through third-party providers.
- Currently Summon spotlights image sources, which will be expanded to include other content types such as newspapers, reference material, or dissertations.

Responsive Web Design

Summon 2.0 incorporates the technique of responsive web design, in which the interface is delivered according to the capabilities of the user's device. Rather than having separate version for desktop and mobile access, services created through responsive Web design dynamically adjust to any user platform. Responsive web design is generally based on the principle of delivering the user interface in a way that is dynamically optimized for the size and capabilities of mobile devices and computers. Based on techniques such as media queries that detect device characteristics, the interface can be optimized for the limited capabilities of smartphone with fluid presentation of content appropriate to the size of the screen on the device and able to alter layout or offer additional features for more capable browsers. Users naturally benefit from responsive web design in that they always receive an interface suitable for whatever device they happen to be using. This approach also simplifies the management of applications like Summon 2.0 for libraries as they provide access to their users, avoiding the need to license or deploy a separate site or app for mobile users. Although responsive web design offers challenges for software developers, it represents an important user experience methodology as the use of smartphones and tablets increases and desktops and laptops decline.

Serials Solutions makes extensive use of usage data as it designed the interface for Summon 2.0. The new design is able to

We see significant differentiation in the technical approaches of vendors offering Web-scale discovery services.

take better advantage of the screen real estate to deliver its new features, using techniques such as displaying a preview window with additional information as the user hovers over a result item.

Market Position

Serials Solutions characterizes Summon as distinct from competing discovery services through its reliance on a single unified index. It does not make use of techniques such platform blending as seen in EBSCO Discovery Service or the pipes architecture in Primo for incorporating local and third-party content sources, nor does it rely in any way on federated search technologies. Serials Solutions extols the advantages of its unified index for improving the end user experience, as do its competitors describing their technology. We see significant differentiation in the technical approaches of vendors offering Web-scale discovery services.

Serials Solutions points out that the Summon interface was designed specifically to support Web-scale discovery, noting that its competitors have repurposed other products or platforms. Ex Libris, for example, initially developed Primo as a unified discovery and delivery platform to which it later added the Primo Central index; EBSCO has extended its EBSCO-host platform as the foundation for EBSCO Discovery Service. Arguments can be made for and against these differing approaches, but Serials Solutions asserts that its creation of the Summon interface specifically for Web-scale discovery allows it to offer a more powerful end-user experience, which Summon 2.0 exploits even further.

The number of libraries using Summon continues to grow rapidly, but remains behind its direct competition. According to the Automation Marketplace 2013 (*Library Journal*, April 1, 2013 issue), 504 libraries have implemented Summon; 1,151 libraries have implemented Ex Libris Primo, and OCLC reported that 1,683 libraries have implemented World Cat Local, including those taking advantage of the Quick Start program. Although EBSCO does not publish comprehensive numbers, more than 2,100 libraries have access to EBSCO Discovery Service.

Technology Upgrade

Summon, from its inception, was designed as a discovery service delivered through a single hardware and software platform.

The transition to Summon 2.0 also provides Serials Solutions with the opportunity to implement some improvements in this behind-the-scenes technology platform. The four years that Summon has been available represents a relatively long time in the life cycle of technology infrastructure components.

Although the basics of the technology stack remain mostly the same, the new platform includes upgrades and optimizations that designed to maintain and improve performance levels as the use, feature set, and the content indexed continues to expand.

Credo Expands Product Line

In recent weeks, Credo has taken steps to expand the company and to strengthen its product line.

In March 2013 Credo announced that it has acquired OnlineTutorSolutions.com and will take advantage of this service to improve its Literati solutions. OnlineTutorSolutions.com is a New Jersey-based company founded in 2010 that offers fee-based tutoring services via the Internet for grades 3-12 in subjects including math, reading, and writing. Tutoring sessions are conducted using an interactive learning environment by teachers with special training and holding New Jersey teaching certification. Cherith Matlosz served as President of the company prior to its acquisition. Details of the transaction were not disclosed.

Credo has also expanded its service offerings, launching Literati School and Literati Student Athlete, specialized versions of the Literati suite of reference content, technologies, and services shaped for the needs of their respective target audiences. The company announced in February 2013 that the athletic programs of Louisiana State and Charleston Southern had licensed Literati Student Athlete. Literati Academic and Literati Public, created for users of academic and public libraries, have seen adoption by more than 600 institutions since their launch in 2011.

The Literati product suite has also been enhanced with text-to-speech technology recently licensed from ReadSpeaker (<http://www.readspeaker.com/>). This technology enables users, such as those with visual impairments or reading disabilities, to access content resources in Literati by listening to automatically generated speech. Credo initially deployed the text-to-speech capabilities on its Literati Public, with the other members of Literati suite soon to follow.

Credo announced that the Software and Information Industry Association (SIIA) awarded Literati Public its 2013 CODiE Award for Best General Reference Service. Literati Academic was a finalist for the SIIA Education CODiE Awards for Best Education Reference Solution.

In related news Tutor.com was acquired by IAC in January 2013. IAC holds more than 20 business involving more than 150 Internet brands, including Ask.com, match.com, Vimeo, Newsweek. Its companies generated over \$1.4 billion in 2012 and employs 3,800 worldwide. Tutor.com, founded in 1998 by George Cigale, is the largest online learning service. In June 2012, Tutor.com acquired the Ask A Librarian online virtual reference service.

Follett Releases Destiny 11.0

Follett School and Library Group released Destiny 11.0, the latest version of its automation product designed primarily for the K-12 school library arena. Originally created in 2003, Follett has maintained a pace of delivering major updates to Destiny annually. Destiny 11.0 includes a number of new capabilities, including improvements to its support for e-books and mobile devices. This version includes a Kindle Fire mobile app the for the Destiny Quest search interface in addition to the ones previously available for Apple iOS and Android devices. The company also improved the integration between Destiny and Follett eBooks.

Destiny 11.0 also brings enhancements to the cataloging functions, such as support for the recently implemented

Resource Description and Access cataloging rules for MARC records. As of March 31, 2013, many of the major bibliographic resources, such as those from the Library of Congress and the British Library switched from AACR2 to RDA as their official descriptive cataloging standard (see <http://www.loc.gov/aba/rda/>). This release also includes a new dashboard that provides a graphic display of operational activities such as circulation statistics, hold requests, and overdue notices.

Follett ranks as the dominant provider of automation software to the K-12 arena. More than 6,000 districts spanning around 59,000 individual schools have adopted Destiny.

BIBSYS Consortium Selects Primo

BIBSYS, which provides services to a consortium that includes the National Library of Norway and about 100 research libraries in the country, has selected Primo from Ex Libris as its discovery service. These libraries currently rely on a library automation system developed by BIBSYS. Rather than creating its own discovery interface, the organization opted to investigate commercial products. Following an evaluation process, Primo from Ex Libris was selected.

The selection of Primo is noteworthy given the recent history of BIBSYS. Although BIBSYS had a history of develop-

ing its own automation products, in March 2010 it went out to procure a commercial library management system. BIBSYS selected WorldShare Management Services from OCLC, with the intention of not only using the functionality provided in the product, but to also implement locally-created services based on the WorldShare APIs. In October 2012, however, BIBSYS and OCLC mutually dissolved the partnership and BIBSYS opted to continue with its locally developed system at least for an interim period. This event was covered in the October 2012 issue of *Smart Libraries Newsletter*.

SirsiDynix Announces BLUEcloud Suite

SirsiDynix has extended its product strategy of creating a new suite of products with new interfaces and capabilities that operate with both of its ILS products: Symphony and Horizon. A layer of Web services available for Symphony and Horizon provide the foundation for the development of new applications based on current technologies, such as a services-oriented architecture. Branded as the BLUEcloud suite, components will be offered for staff interfaces, for patron discovery, and for electronic resource management.

The new BLUEcloud Staff components will include Web-based staff interfaces for all of the major modules of the system, including system administration, circulation, cataloging, serials, and acquisitions. As these BLUEcloud Staff modules are completed, they will be made available to libraries without additional cost beyond their current maintenance fees. Optional added-cost modules will also be offered including MobileCirc and a new Analytics application. MobileCirc, with availability planned for summer 2013 for Android or iOS based devices,

will include functionality for circulation, inventory, and shelving tasks such as pulling weeding lists or requested items.

Two tiers of patron-oriented interfaces make up BLUEcloud Discovery. BLUEcloud PAC and a generic version of the BookMyne mobile application are available without additional cost. Consistent with current pricing, BookMyne+, a customized mobile app with library branding, the Enterprise discovery service, Portfolio digital asset management, and the Social Library for Facebook are the premium offerings within BLUEcloud Discovery.

BLUEcloud Marketplace includes eResource Central, previously covered in March and June 2012 issues of *Smart Libraries Newsletter*. Its eResource Central provides capabilities to manage and provide access to eBooks and other electronic resources. SirsiDynix also plans to develop Global Titles Lists and Global Vendor Access to simplify the acquisition of materials from multiple suppliers.

Library Technology News

NISO publishes recommended practice on presentation and identification of e-journals

Baltimore, MD – March 27, 2013 - The National Information Standards Organization (NISO) announces the publication of a new Recommended Practice: PIE-J: Presentation &

Identification of E-Journals (NISO RP-16-2013). This Recommended Practice was developed to provide guidance on the presentation of e-journals—particularly in the areas of title presentation, accurate use of ISSN, and citation practices—to publishers and platform providers, as well as to solve some long-standing concerns of serials, collections, and electronic

resources librarians. In addition to the recommendations, the document includes extensive examples of good practices using screenshots from various publishers' online journals platforms; a discussion of helpful resources for obtaining title history and ISSN information; an overview of the International Standard Serial Number (ISSN) and key points for using it correctly; an explanation of the Digital Object Identifier (DOI), the registration agency CrossRef, and tips on using DOIs for journal title management; and a review of related standards and recommended practices.

"The PIE-J Recommended Practice provides a clear and succinct list of guidelines that publishers can easily implement to facilitate long-term access to their e-journal content," declares Todd Carpenter, NISO Executive Director. "This constructive advice will aid publishers with the presentation of born-digital content as well as supporting the continued digitization of content from journals originally published only in print."

The PIE-J draft Recommended Practice and a brochure summarizing the recommendations are available from the NISO PIE-J workroom website at: www.niso.org/workrooms/piej/.

13 partners from across Europe join together to improve digital curation

Seven European countries are launching 4C (the Collaboration to Clarify the Costs of Curation) to help public and private European organisations invest more effectively in digital curation and preservation, sustaining the long-term value of all types of digital information.

Curation ensures digital objects remain understandable, accessible, useable and safe over time. 4C will provide practical guidance to help organisations estimate the cost of digital curation work and demonstrate the long and short term benefits.

Alex Thirifays, National Archives of Denmark, explains: "As well as bringing together a fragmented research landscape, the project will create an online 'curation costs exchange' which will help users to model their costs and in this way predict more accurately the sorts of costs and benefits that are likely to result from the positive decision to preserve. This will be useful for managers in major archives and data centres and we hope it will support preservation planning functions. These tools will be particularly useful for policy-makers concerned about long-term access to data. In addition we will publish a roadmap for

future work in modelling costs which will help to clarify the areas which need more support."

Neil Grindley, project co-ordinator from Jisc in the UK, explains: "It can be difficult to make a convincing case for investment in digital curation for two reasons. Firstly the costs of curation are currently hard to predict and secondly the short term benefits are hard to define because curation implicitly addresses long-term challenges." 4C will address both concerns and provide practical guidance that will help practitioners persuade executives to invest in new services.

4C is described as 'open and social' and rather than waiting for perfect and polished results, they will be blogging and sharing findings as they go. 4C hope that this will encourage debate and increase the likelihood that their findings and guidance are useful.

Sabine Schrimpf of the Deutsche Nationalbibliothek, Germany, says: "We are looking to engage with many different kinds of organisations and to set up partnerships and have discussions with everyone who would like to get involved in the development of these tools. We'll be inviting people to workshops and focus groups during the next two years, and we'll be organising a conference to share our results at the end of the process."

The partners involved are: Danish National Archives (Denmark), DANS - Data Archiving and Network Service (Netherlands), Deutsche Nationalbibliothek (Germany), Digital Curation Centre (UK), Digital Preservation Coalition (UK), Humanities Advanced Technology and Information Institute (UK), Institute for Information Systems and Computing Research (Portugal), Jisc (UK), Keep Solutions (Portugal), National Library of (Estonia), Royal Library of Denmark (Denmark), Secure Business (Austria), UK Data Archive (UK).

Polaris implements new customer support portal

SYRACUSE, N.Y., March 25, 2013 —Polaris Library Systems introduced a new software system to further enhance its customers' support experience. Designed by PhaseWare, the system provides one-stop access, through the "Polaris Supportal," to ticket status, an extensive knowledgebase, project management tools, robust enhancement process features, peer-to-peer information sharing through new forum software, and much more.



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