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Open Source Discovery
Interfaces Gain Momentum

Smart Libraries Newsletter

Smart Libraries Newsletter delivers hard data and innovative
insights about the world of library technology, every month.

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Open Source Discovery Interfaces Gain Momentum

The library community's intense interest in discovery interfaces that allow libraries to offer more modern tools to their users for searching their collections continues. While many libraries cannot make wholesale changes in their automation environment, many seek better interfaces for their end users. Almost all of the commercial library automation vendors now offer products in this genre, including Encore from Innovative Interfaces, AquaBrowser created by Medialab Solutions and distributed by R.R. Bowker, Primo from Ex Libris, LS2 PAC from The Library Corporation, Illuminar from Auto-Graphics, BiblioCommons, and Enterprise from SirsiDynix. As fewer libraries purchase new ILS products, the sale of products like discovery interfaces represent an increasing proportion of revenue for these companies.

In addition to these products, which were created by commercial companies, a number of alternatives have emerged in the open source arena. These open source products allow libraries to follow a more experimental approach in establishing their next-generation discovery interface strategy. Libraries can download and install the software on a test server, load sample data sets, and customize it without the need to make a major commitment or financial outlay. They can even experiment with multiple products. The availability of these open source products allows a library to make an initial investigation of a new generation interface and gain hands-on experience, even if they might eventually decide to purchase a commercial product.

The number of libraries currently making commitments to open source discovery interfaces currently falls well below the number of libraries who have purchased commercial products. Yet, we still see momentum building toward open source versions of discovery products. The list of those going with open source discovery products now includes some very large and prestigious libraries. In the library automation arena, success builds on success. If these projects to implement open source discovery interfaces prove successful, they will pave the way for others. Just as in the ILS arena, commercial and open source alternatives will coexist as libraries seek products to replace their aging ILS OPACs.

This genre of discovery interfaces provides a new tool that library patrons can use for searching library collections. In most cases, the discovery interface operates somewhat separately from the ILS, though it interacts with it in many important ways. The ILS continues to serve as the automation environment for library staff as they manage the library's collection. The discovery products extract data from the ILS and other repositories that manage library collections, creating a new centralized index with new search capabilities. The discovery interface often interacts in real time with the ILS in order to display information regarding the availability of materials and to place requests.

In the open source discovery interface arena, VUfind stands as the dominant product. The Mellon-funded eXtensible Catalog project has been underway for about 2 years

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and will soon be releasing software. Other open source discovery technologies emerging include the University of Virginia's Blacklight and OpenBib, which is an example of discovery interfaces developed internationally.

VUfind

VUfind was one of the first open source discovery interfaces for libraries, and it continues to be the dominant non-commercial alternative to proprietary products. SLN featured VUfind in its September 2007 edition while it was still in early stages of development. Since that time, the product has matured in functionality and has seen adoption both in its home institution and beyond. Version 1.0 was released around October 2008. In December 2008, the Andrew W. Mellon Foundation recognized Villanova University as one of the recipients of its third annual Mellon Award for Technology Collaboration, designating a $50,000 prize for the project.

A number of major libraries have implemented VUfind, with some now offering it as the default search interface. Others have created preliminary installations of VUfind, offering them to their users as an experimental alternative. As an open source application that sees adoption in a variety of major institutions, VUfind benefits from a growing community of developers.

Some of the libraries using VUfind now include:

The Falvey Memorial Library at **Villanova University,** which initiated the creation of VUfind and continues to lead its ongoing development. An early version of the software was created to provide access to a Community Bibliography (http://bibliography.library.villanova.edu/), and was later extended to address the library catalog, emerging as VUfind. The primary developers of VUfind included Andrew Nagy and Chris Barr. Villanova began using VUFind as the default interface for its Voyager ILS in August 2008. The ability for the other libraries listed below to make use of VUfind would not have been possible without the development carried out at Villanova.

The **National University of Australia** became the first major library to put VUfind into production as the default interface for its collection on May 27, 2008—even ahead of Villanova University. NLA uses VUfind in conjunction with its Voyager system, searching a collection of over 5 million titles. The library has recently expanded its scope to include all of the text of Project Gutenberg, a collection of books in the public domain, and the material in the Hathi Trust, a shared digital repository of over 2.6 million digitized volumes from 25 major universities in the United States. The use of VUfind by a library of the stature of the National Library of Australia gives the product significant credibility.

See: http://catalogue.nla.gov.au/

The **Consortium of Academic and Research Libraries in Illinois, or CARLI,** has implemented VUfind as an alternative interface for the I-Share catalog for its 76 member libraries. These libraries share a Voyager system, and offer both the native WebVoyage and VUfind interfaces. Some CARLI libraries already position it as the preferred interface. The adoption of VUfind by CARLI demonstrates its ability to address the needs of a large library consortium.

See: http://vufind.carli.illinois.edu/

The **Minnesota State Colleges and Universities** system operates a shared Aleph implementation for its member libraries, called MnPALS. The organization has implemented VUfind as an alternative interface under the name MnPALS Plus. Considered a production product, some PALS members currently position it as their primary interface, with additional libraries planning the transition in the next year.

See: http://plus.mnpals.net/

Western Michigan University plans to offer VUfind as its primary search interface by Fall 2009, replacing its current Voyager catalog. VUfind was selected following a process that evaluated Primo, Encore, Endeca, AquaBrowser, and WorldCat Local.

See: https://vufind.library.wmich.edu/

Several members of the Association of Research Libraries have shown interest in VUfind. ARL members present significant demands for automation software given their large collections and complex organizations. **Georgia Tech University,** for example, relies on it as the default interface for its Voyager system. **Colorado State University** launched its Discovery search tool in February 2009, based on VUfind. At CSU, VUfind operates with a Millennium system from Innovative Interfaces. **Auburn University** implemented a test version that it expects to put forward for user testing in Summer 2009. The University of Michigan, an Ex Libris Aleph site, offers an alternative version of its Mirlyn catalog based on VUfind. Yale University has implementation a version of its catalog based on VUfind it calls Yufind. Yale has done extensive work testing the usability of its implementation of VUfind.

http://finder.library.gatech.edu/
http://discovery.library.colostate.edu/
http://mirlyn2-beta.lib.umich.edu/
http://yufind.library.yale.edu/

York University announced that it selected VUfind as the preferred discovery interface. At York, an evaluation team was charged with evaluating the discovery products currently available, and ultimately recommended VUfind as its recommendation. Implementation is planned for Summer 2009.

The total number of libraries involved with VUfind or other open source discovery interfaces represents a small portion of the 123 total members. Yet, the ability to break into the ranks of this group at all represents a major milestone for an automation product in the academic library sector.

In Germany, the **Verbundzentrale de Gemeinsamer Bibliotheksverbund** has used VUfind as the basis of a search and discovery interface for a large collection of scientific and technical resources called Nationallizenzen. The current beta version indexes 4.6 million items, but will grow to a total of over 50 million. This resource includes about 1 million items freely available as well as proprietary resources that require authentication. This resource is funded by DFG, the German Research Foundation, one of the major sources of funds for scientific research in Germany. This implementation of VUfind illustrates its ability to address collections of content other than traditional library catalogs.

> See: http://www.gbv.de/vgm/info/biblio/01VZG/
> 01ueber_die_VZG/index?lang=en
> http://finden.nationallizenz.de/

In other news related to VUfind, Andrew Nagy, its primary developer at the Falvey Memorial Library at Villanova University has recently joined Serials Solutions as Senior Discovery Services Engineer, focusing in that company's new Summon discovery product. Nagy will continue his role as the lead developer of VUfind.

At this stage, VUfind ranks as an established competitor in the discovery interface product genre. While not as many libraries use it as their production interface as some of the commercial products, it is off to a respectable start. The projects listed here do not represent a comprehensive list of libraries working with VUfind, but a selection of examples that illustrate its use in diverse library settings.

eXtensible Catalog reaches milestones

The eXtensible Catalog (or XC) project continues its progress in creating an open source discovery platform for libraries. SLN covered this project in its December 2007 issue, following its award of a second round of funding from the Andrew W. Mellon Foundation. Since that time, progress on the project has taken place mostly behind the scenes. Although the XC team has been active in describing the conceptual framework behind its approach, no software has been released with specific information about what the eXtensible Catalog will look like.

One of the key concepts behind XC involves its approach to metadata. XC includes a Metadata Toolkit for exporting and transforming metadata into forms that make it more effec-

tive in a faceted search environment. It also includes toolkits for OAI and NCIP for interacting with ILS systems and other repositories. XC will embrace multiple interface options, including one that uses Drupal, an open source content management system that finds widespread use, with an increasing presence among libraries. By working with Drupal, XC will be able to take advantage of a mature set of interface tools, which can be extended to incorporate library data and services. Alternative interfaces for XC will be created for Learning Management Systems so that academic libraries can more easily present their services through these environments.

The XC project will soon begin making its software available. The University of Rochester River Campus Libraries has recently announced that it plans to release early versions of the various components that comprise XC by March 30, 2008. The release of the software and documentation does not signal completion of the project. Development will continue, but in a more public way that will allow the library community opportunities for review and comments.

OpenBib

Interest in open source development of new library interfaces extends internationally. The University of Cologne in Germany, for example, has uses a locally-developed search environment called Koelner UniversitaetsGesamtkatalog, or KUG. This portal provides access to the holdings of the 145 institutes associated with the University, each of which maintains its own catalog, as well as other repositories and special collections. KUG currently searches about 7.1 million items.

This project relies on OpenBib, open source software for library interfaces whose original development began in 1997 led by Oliver Flimm. It makes use of open source components including Apache, Perl, and MySQL. OpenBib uses the open source Xapian search engine toolkit (xapian.org), unlike many of the other library discovery products that tend to use Lucene.

OpenBib includes the standard features of the current line of library discovery interfaces, including faceted searching, end-user tagging, reviews, tag clouds, and recommendations of popular or related items based on use data. The interface offers a live-search feature, where the system begins to offer search terms in a clickable dropdown that builds as the user types a few characters. This increasingly popular feature not only saves time in typing, but presents the user with valid search terms that might not have otherwise been obvious. OpenBib includes the ability to browse the collections, allowing the user to drill down from broad disciplines to structured subject terms down to specific works. OpenBib makes generous use of RSS, offering

feeds for subject terms and authors represented in the collection, as well as search results.

A new version of KUG has been developed that looks more similar to the current line of discovery interfaces. This new interface, now available in a beta test version, will become the default interface in the near future.

So far, no other libraries are using OpenBib to power their catalogs other than the University of Cologne.

For more information OpenBib, See: http://www.openbib.org.
KUG : http://kug.ub.uni-koeln.de/

Blacklight

Another open source discovery product that has begun to receive attention is Blacklight, a development project at the University of Virginia (UVa) libraries. Blacklight was created as a research project by the University of Virginia and has not yet been put into production for the catalog of the UVa Library or any other library.

Like VUfind, Blacklight is an open source faceted discovery tool based on the Apache SOLR technology. It relies on Ruby on Rails as the programming language for presenting its user interface. Blacklight emerged out of a project to create a tool called Collex that it originally created to provide access to a collection called NINES, nineteenth-century studies online. Blacklight operates with a variety of international metadata formats including MARC, EAD, TEI, and General Descriptive Modeling Scheme (GDMS) developed at UVa.

Blacklight offers a very similar approach to VUfind, with comparable features. The Ruby on Rails programming environment has become very popular for Web development. While still a research project, Blacklight serves as an example of ongoing work in the discovery interfaces arena that will lead to even more of a variety of options and opportunities in this arena in the future.

http://blacklight.betech.virginia.edu/catalog

—*Marshall Breeding*

Voice Lessons

In a February 13th post on the ALA TechSource blog, I wrote an amorous, partially tongue-in-cheek Valentine's Day lament about not being able to afford the new Kindle 2 portable ebook reading device from Amazon. In that blog post I noted that the text-to-speech (TTS) function of the Kindle 2 was one of the things I thought I could love about it, if I could just bring one into my life.

It was intended to be a cute spoof, but the issue of audio books is very serious. Some libraries are beginning to take audio narrative content seriously, while other libraries are still struggling to discern how audio content fits into their overall service mission. I have written and spoken on several occasions about the fact that auditory reading—listening to an audio book—is a valid, enthralling, rewarding form of reading. I also have suggested on several occasions, in print and recitations, that text-to-speech soft-

ware has a bright future, partly because the software is becoming better and more natural sounding, and partly because the low cost and immediacy of turning any digital text into a TTS audio book would make it very attractive to many people in many different situations.

In the last half of February, the TTS function in the Kindle 2 hit a buzz saw of controversy that may have a significant long-term effect on the options available to readers, the libraries and bookstores that serve readers, and the makers of portable electronic reading appliances. Just a day or so after the Kindle 2 was officially released, Roy Blount, Jr. had an op-ed piece published in the New York Times in which he took the Kindle 2 to task for how its TTS feature essentially enabled the reader to enjoy an audio book without compensating authors and other rights holders for use of audio book or performance rights. Blount, mainly an

author of humorous books who currently is serving as the president of the Authors Guild, called it the Kindle swindle. Blount, like me, is an admirer of the comic novels of Charles Portis, such as *Norwood* and *The Dog of the South*, so his opinion of the TTS function of the Kindle warrants attention.

As is often the case, the problem and controversy seem to boil down to money. Amazon has licensed the electronic book rights for the titles it offers in Kindle format, but not the audio book rights. Audio book publishing in the United States is now a billion dollar industry. In the economic marketplace, audio book rights usually fetch a higher price than e-book rights. Authors and other rights holders of books offered through Amazon for the Kindle 2 claim that by implementing a TTS function for all Kindle ebooks, Amazon has failed to compensate the authors for the audio book rights.

Michael Kwun at the Electronic Frontier Foundation responded with a cute but serious article about the concerns expressed by the leadership of the Authors Guild. Kwun argues that a TTS audio book version of an electronic text is not really a derivative work, an unlawful reproduction, or a public performance of a written text, and thus is not covered by current copyright laws.

In response to the growing controversy, Amazon announced in early March a new policy that would allow publishers, authors, and other rights holders to block the TTS function on the Kindle 2 on a title-by-title basis. Some commentators feel that the authors got their justly deserved control (if not bankable compensation) over audio versions of their works, while others feel that Amazon, led by founder Jeff Bezos, caved in to an established guild mentality that is retarding progress in the technology of reading.

While all this acrimony and wrangling cannot be wished away, and while it may have a long-term effect on how readers and the libraries and bookstores that serve them are able to interact with digital texts, it may be worthwhile to bracket for a moment all of the issues about rights, money, and compensation and focus exclusively on the promise. Imagine a portable reading appliance that offers near-instantaneous access to hundreds of thousands of electronic books from almost any location in the United States, if not the entire world. Then imagine that portable reading appliance having the ability to render not only a legible, flexible electronic text for visual reading, but also an audible, enjoyable audio version on demand for auditory reading. If the price point was within the reach of most readers, and if the overall design of the device was accessible to blind and low-vision users, this would be a tremendous boon to all American readers.

With the Kindle 2, Amazon has taken a couple of steps in the right direction, but they still need to address the issues surrounding rights, price, and accessibility. Authors and other rights holders should be fairly compensated, whatever that ends up meaning in this case, and many readers continue to balk at the high price of the Kindle 2. Based on what they've read about the Kindle 2, many of my blind and low-vision colleagues think that this device would not be very accessible to them. In a statement on the controversy released by the National Federation of the Blind, Marc Maurer, NFB president, is quoted as stating, "The key point is that reading aloud in private is the same whether done by a person or a machine, and reading aloud in private is never an infringement of copyright."

Yet the prospect of hundreds of thousands of electronic books almost instantaneously available not only as ebooks but also as digital audio books should continue to spur not only hardware and software development, which includes making electronic content accessible to all, but also rights negotiations.

—*Tom Peters*

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http://www.alatechsource.org/blog/2009/02/kindlekrankheit.html

http://www.nytimes.com/2009/02/25/opinion/25blount.html (subscription required)

http://www.authorsguild.org/advocacy/articles/e-book-rights-alert-amazons-kindle-2.html

http://www.nfb.org/nfb/NewsBot.asp?MODE=VIEW&ID=412&SnID=2

http://www.eff.org/deeplinks/2009/02/does-authors-guild-want-sue-you-reading-aloud-your

Implementing Libraries and Learning in Second Life

The literature on librarianship in Second Life and other virtual worlds continues to expand. Late in 2008 a collection of contributed chapters called Virtual Worlds, Real Libraries: Librarians and Educators in Second Life and Other Multi-User Virtual Environments, edited by Lori Bell and Rhonda Trueman, was published by Information Today. Library Technology Reports issued *Librarianship in Virtual Worlds*, authored by yours truly, in Octo-

ber 2008. In March 2009 LTR published another issue (Volume 45, Number 2) called *Implementing Second Life: Ideas, Challenges, and Innovations*, by Joe Sanchez, with a chapter contributed by Jane Stimpson. Sanchez and Stimpson explore new territory that does not merely reiterate ideas and details covered by earlier publications.

The Sanchez and Stimpson report focuses on the history and current state

of online social worlds, beginning with text-based virtual worlds launched in the late Seventies through the current interest in Second Life, Active Worlds, There, Teen Second Life, and other three-dimensional virtual worlds. Sanchez, a doctoral candidate in the School of Information at the University of Texas at Austin when he wrote this report, comes to Second Life with an interest in instructional design, and as a doctoral

student researcher. He has experience teaching undergraduates in Second Life. His stated goal in this report is "…to provide an understanding of the historical and practical applications of social virtual worlds." Social virtual worlds are virtual worlds that are not primarily about games and role-playing. Sanchez claims to occupy the middle ground between what he calls Second Life "evangelists" and virtual world "Luddites"—nonusers who don't understand the experience of living, working, and learning in virtual environments.

Chapter 1 provides an overview and framework for the report. After outlining the types of text and voice communication that are possible in Second Life, Sanchez articulates six aspects of Second Life that should be of concern to librarians and library administrators who are considering developing an organizational presence in this virtual world (I'll list five here). First, Second Life has trouble retaining its population. Nine out of 10 new accounts in Second Life are not being used even on a weekly basis as soon as three months after the accounts were created. Second, Second Life began as proprietary software on a closed grid owned by Linden Lab, a privately held company. As a result, several substantial price increases for hosting fees and virtual land have occurred in the past three years. Third, intellectual property rights remain with the content creators, although it should be noted that property and rights may be sold and/or deeded to other individuals and organizations. Fourth, Second Life has been an over-hyped technology. Other modern technologies like television and electronic books went through a phase of being overhyped as well. Fifth, an organizational presence in Second Life must be managed and cultivated. As Sanchez notes, if you just built a three-dimensional set of buildings, gardens, and meeting places in Second Life, the avatars might not come at all, or they might come once for the grand opening, but probably would not return. Organizations in Second Life need to cultivate a user base and foster the development of an in-world community. As Sanchez notes, "In Second Life, it is people, not the content that is king."

Stimpson's chapter examines the efforts of eight public libraries to develop and maintain a presence in Second Life. One problem that public libraries encounter in Second Life is that people younger than 18 years of age officially are not supposed to be able to open accounts. Youths aged 13 through 17 are welcome on Teen Second Life. Pre-teens have plenty of virtual world options, but many of them have little or no public library presence. Currently there is no popular "cradle to grave" virtual world that serves all age groups, as public libraries in the real world strive to do.

Stimpson notes that some of these libraries are creating links to resources and services available at their brick-and-mortar libraries, creative in-world exhibits, and in-world events that would be difficult or impossible to conduct in the real world. Other public libraries, however, seem to have spent most of their time and energy in designing and assembling their virtual world library building and the surrounding grounds, with little thought given to events and community-building in Second Life. These builds run the risk of becoming "ghost sims"—spaces built in a virtual world like Second Life that have little traffic. As Stimpson notes, "It is not enough to have ambitious architecture and static displays."

Second Life also can function as a venue for teaching and learning. In Chapter 4 Sanchez examines some of the more promising pedagogical applications, such as digital storytelling, community engagement, and role-playing, which in Second Life can ascend to a high level of engaged, immersive, empathetic learning.

Chapter 5 includes an examination of some of the barriers to student learning in Second Life, including a difficult interface that is often counterintuitive to many people, technical hurdles and difficulties, the expectations about Second Life that students and library users bring to it, and the fact that doing things in Second Life can be very time-consuming. All of these barriers and others lead to the commonly held perception that Second Life has a long, steep learning curve.

Sanchez also notes several positive aspects of Second Life reported by many of the students with whom he has worked, including their interest in creating and using avatars, the creativity elicited and engendered by the type of group learning activities common in Second Life, and the feelings of accomplishment students express when they achieve some goal in Second Life. Although Sanchez concludes that librarians and libraries should proceed with caution when considering becoming active in Second Life, he does note that "Librarians and educators have three tools that can help us design a positive user experience for students: the avatar, creativity, and play."

— Tom Peters

E-Textbooks at Northwest Missouri State University

Northwest Missouri State University in Maryville is one of the first institutions of higher education in the United States to try using predominantly electronic textbooks for their courses. The university administration, faculty, and staff are seeking ways to cut student costs while delivering a better way to carry and interact with textbooks. The expanding experiment, which began as a small pilot project last fall, has garnered national attention.

For decades, the university has offered a textbook rental service to its students. In many courses at the university, students have the option to lease access to textbooks at a set fee per credit hour, far below the cost to purchase the textbooks new.

Today, several devices are being tested to carry and access the textbooks, including the Sony Reader, laptops, and iPods. The university seems to be settling on the laptop as the best of all available textbook appliances, because of the many other applications students can run on a laptop, which already are supplied by the university bundled with tuition and fees, but experimentation with iPods and newer versions of the Sony Reader continue. As an interstate billboard for the university touts, "at Northwest Missouri State, the laptop and textbooks are included."

The university has been working with McGraw-Hill Education on this project. According to a report on the experiment in CNN Money, "In the second phase of the pilot program, the students download the McGraw-Hill eBooks using VitalSource Bookshelf, a software application for reading, managing and interacting with digital content." Other e-textbook purveyors, such as CourseS-

mart, which seems to have approximately a 30 percent share of the growing market, predict that most e-textbooks used at colleges and universities will be available as e-textbooks very soon.

Predictably, experiences, attitudes, and opinions from faculty members and students at Northwest Missouri State have been mixed.

If e-textbooks become the dominant mode of access on most academic campuses, what impact will that have on these academic libraries? Although many academic libraries do not collect the textbooks that are currently used in courses taught on campus, students and faculty members may become more adept at interacting with electronic books in general, which may result in increased demand for other electronic books and journals offered by campus libraries.

—*Tom Peters*

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http://www.insidehighered.com/news/2009/01/14/ebooks

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