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Do We Step Together, in the Same Direction, at the Same Time? How a Consortium Approached a Federated Search Implementation

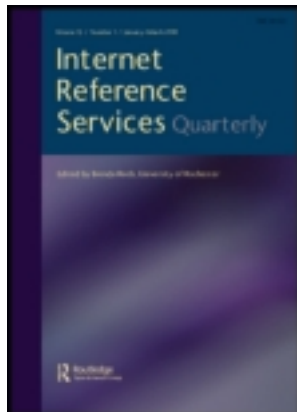
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Do We Step Together, in the Same Direction, at the Same Time? How a Consortium Approached a Federated Search Implementation

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Beth Lang
Barbara Morgan

SUMMARY. The Five College Libraries of Western Massachusetts have a long-standing tradition of collaborating on technology projects which improve our communities' access to information resources. After investigating various link resolver and federated search products in 2002, the Five College Librarians' Council signed a three-year contract with Ex Libris in spring 2003 to host SFX link resolver and MetaLib fed-

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erated search installations. Following a very successful implementation of SFX in 2003, the Libraries took on the MetaLib implementation in 2004. From the perspective of one participating library, this article addresses how the Consortia planned, made decisions, and took actions regarding this product. Some of the common interests discussed are interface design, usability, resource description, performance settings, product upgrades and customer support, as well as individual library concerns about purpose and presentation among other Web-based tools, categorizing resources, affect on resource terms of use, and user support. doi:10.1300/J136v12n01_06 [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <<http://www.HaworthPress.com>> © 2007 by The Haworth Press, Inc. All rights reserved.]

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INTRODUCTION

In the spring of 2004 the Five College Libraries embarked on a consortial implementation of Ex Libris' federated search product, MetaLib. Over the course of the ensuing year library staff from Amherst College, Hampshire College, Mount Holyoke College, Smith College and the University of Massachusetts Amherst worked together in various capacities to explore, configure and present MetaLib tools to their respective user populations. Many individuals and several groups collaborated to research product options, form a Five Colleges' MetaLib Implementation Group, coordinate training and support provided by Ex Libris, and decide on implementation choices for all libraries or for each library. This is an article about how librarians representing disparate organizations and users developed processes, made decisions and allocated tasks to introduce a new service from the complex package of tools that is MetaLib.

BACKGROUND

Five Colleges, Inc. is located in a small geographic area of Western Massachusetts. The libraries of these higher education institutions each have unique campus technology infrastructures, collections of

resources, staff expertise, and user communities. Student populations at the four colleges range from 1,350 to 2,750 and library staff sizes from about 35 to 65. UMass Amherst has a student (graduate and undergraduate) population of 25,000 and a library staff of 125. While representing different campuses, the libraries still have a proud tradition and ongoing interest in collectively managing information resources and improving access to them. They share an integrated library system (ILS), an off-site storage facility, specialist staff positions, some co-licensed electronic resources and applications (such as databases, an electronic journal locator and the package of Ex Libris products, SFX and MetaLib), as well as a new ILS, Aleph v. 18 and electronic resource management system, Verde. For a brief overview see “Five Colleges, Inc. selects ALEPH 500, Verde” (2005).

The Five College Librarians’ Council (FCLC), comprised of the individual library directors and the director of Five Colleges Inc., advocate for funding from their home institutions, make strategic decisions and allocate money for their joint projects. They authorize nine standing committees of librarians from each library to monitor, advise, and in some cases make decisions about emerging issues and functional matters affecting the libraries and their user communities. One of these is the Reference, Instruction and Outreach Committee (RIO), which among other things, has been charged by the FCLC to design the public interfaces of new Five College Libraries services and technologies. Another is the Digital Environment Development Coordinating Committee (DEDCC). DEDCC “exists to improve user access, service delivery and creation of digital collections for the Five College Libraries through the use of existing and emerging technologies” (Charge, http://www.fivecolleges.edu/sites/libraries_dedcc/). In addition, FCLC empowers working groups to manage particular projects, such as the SFX Implementation Group, the MetaLib Implementation Group, and the Aleph Implementation Committee.

At the start of the 2002-2003 academic year, DEDCC began investigating options for link-resolver and federated searching technologies. They arranged for vendors to demonstrate their products. Following vendor presentations and product review by staff from all five libraries, DEDCC made a recommendation to FCLC. FCLC agreed to a contract with Ex Libris to provide hosting and support services (known as an “ASP contract”) for both the SFX link-resolver and MetaLib federated search products for three years, through the spring of 2006. Following the work of the SFX Implementation Group and before the constitution of the Aleph Implementation Committee, FCLC appointed a Five Col-

leges MetaLib Implementation Group (MIG) in the spring of 2004. Before discussing the Five Colleges MetaLib implementation, a review of the literature provides some context.

LITERATURE REVIEW

Although federated searching has been a topic of many conferences, workshops and articles, rare is the conversation of how consortia have worked together to plan, test and implement a system. A common theme in the literature is the difficulty of implementing a federated search engine at any given institution. Most of the scholarly research of federated searching focuses on selecting a system, usability and interface issues for federated search systems, selecting search engines that have the most relevant and effective content retrieval, various technical aspects of the environments, usability testing, training staff and marketing from one library's perspective (see, for example, Reeb and Bodon (2005) for their review of the literature related to this).

Many of the published articles that mention collaborative efforts of libraries for this process are usually limited to the discussion of the benefits of what a given federated search system will allow them to do, rather than how the group decided to delegate the tasks amongst the individual libraries. The journal *Advanced Technology Libraries* has many briefs about various libraries and consortia choosing a particular system, but without any of the details of how they accomplished the implementation. In the afore-mentioned journal, many of the institutions, such as the Penn State system (composed of the University Libraries in University Park and 22 other PSU libraries), the University of Wisconsin system, five Mississippi universities working together, and 28 Florida community colleges, each mention how they chose a federated searching system for their entire university system.

Other than Colyar (2005) who documents the process that their consortia undertook to evaluate and recommend federated searching and link resolver products, specific information detailing how member institutions divided up various components of the planning, testing and implementation was not readily available. A broader search of university systems choosing a particular system, rather than limiting to consortia, revealed a few articles detailing the process of splitting up tasks and working together, such as those by Helfer and Wakimoto (2005), Chaffin (2005), and Gerrity (2002). Of particular interest is the article by Helfer and Wakimoto that emphasizes the need to find common

ground, to distribute the responsibilities and to create a team approach to customize and implement the look of the search interface. It also includes a potential warning to others that there may be contention among implementation teams. Although not discussing a consortium, Feeney and Newby (2005) discuss how a group can effectively work together to implement a federated search system based on their work for the Scholar's Portal at the University of Arizona Libraries.

Clearly, more literature is needed on how consortia, or a number of libraries in a system, worked together to not only recommend a federated system, but also to set up a collaborative process for working through an implementation. The authors of this article present an example of practical experiences of a consortia working to implement a system.

DETERMINING ROLES AND RELATIONSHIPS

The Five Colleges MetaLib Implementation Group took shape in early 2004 following the successful public roll-outs of SFX across the libraries. Administrators at each of the libraries then identified personnel to participate in the MetaLib implementation. The FCLC appointed the MetaLib Implementation Group (MIG). The group of 13 was constituted by two to three librarians from each library, including an implementation coordinator for each library. In addition, Ex Libris and MetaLib Support recommended a project manager role to serve as the leader, facilitator, coordinator and liaison for the product implementation.

Though two to three librarians from each library participated in the training, everyone acknowledged that contributions from additional staff at each library would be needed. For example, the Reference, Instruction and Outreach Committee (RIO) would direct the design of the user interface. Each library's RIO representative would present and gather feedback on choices from reference and instruction staff at their respective libraries. For those set-up choices and tasks unrelated to the user interface, the local MetaLib team coordinators were responsible for gathering the information, e.g., network IP addresses and authentication system configurations, and rallying the personnel (such as catalogers, systems staff and reference and electronic resource librarians) to accomplish them.

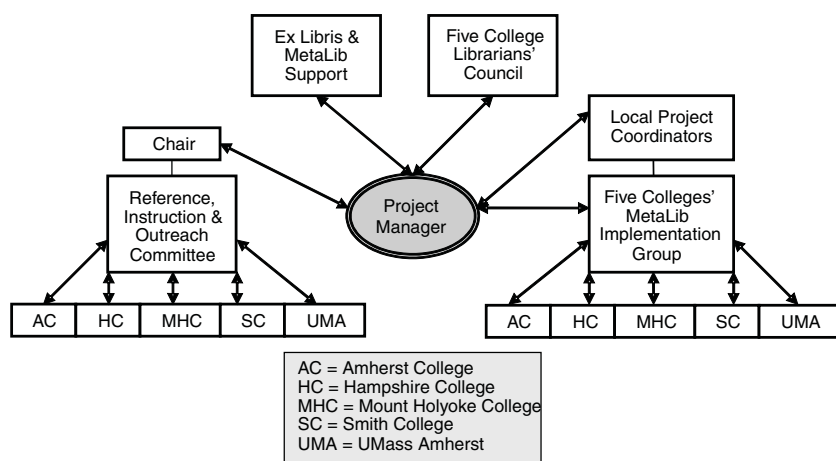
The MetaLib project manager tracked requisite system set-up data, design or user interface specifications, timeline, due dates, troubleshooting, problem reports, and improvement or assistance requests

from each campus, and communicated them to MetaLib support. She also reported on the project implementation and requested support for graphic design consultant services from FCLC. Figure 1 illustrates the relationships among those involved in the implementation.

GETTING STARTED

The Five Colleges MetaLib project manager was appointed and presented with an Ex Libris contact to schedule training. Although a timetable for training and soft roll out had been proposed, variables arose that changed this. Most importantly, Ex Libris was developing a new version of MetaLib due for release in June. MIG members discussed whether or not Five Colleges should wait for version 3.10. They agreed to move forward with the new product since it was purported to have significant improvements. MetaLib version 3.10 software was loaded for the Five Colleges' installation on the Ex Libris server at the end of June with three days of onsite training from a MetaLib staffer following shortly thereafter.

FIGURE 1. Relationships of Those Involved in Five College Libraries' MetaLib Implementation



The group met together in early June to share what it knew about MetaLib version 3 and to discuss its approach to the implementation. Among the questions they discussed were:

- What tasks would the MIG share in common and what would each library pursue individually?
- What were each library's goals for MetaLib?
- How would the group work and communicate together, with others at their libraries, and with RIO and FCLC?
- How would it manage a timeline and project plan?

Though many questions about the product and technology remained open, the group laid out its process, as well as group and individual expectations and concerns. Smith College librarians developed a Web page that would serve as the hub for links and information related to this project. It included a list of members of the MIG, their contact information and links to the MetaLib documentation portal, as well as other libraries that had implemented MetaLib. A Hampshire College librarian agreed to host a mailing list and subscribe MIG members to it. The mailing list became the primary communication channel through which the group conducted its work.

MIG recognized RIO's role to develop a local brand and user interface for MetaLib, as it had done for the ILS and SFX menus. The project manager liaised with the chair of RIO about system capabilities, requirements and the implementation timetable, while others with natural connections to their library's RIO representative provided contextual guidance. This combination of formal and informal information exchange worked well.

THEMES AND DECISIONS

Throughout the first meeting MIG discussed MetaLib's different potential capabilities, both as a federated search tool and as a resource discovery tool. Common themes emerged:

- No one intended for MetaLib to serve as its library's portal, at least initially, recognizing that the intellectual challenge alone of organizing it was too much to tackle in such a short time frame.

- Librarians wanted aspects of MetaLib to work within each library's Web site as part of their existing suite of resource discovery and search tools.
- An incremental approach to introducing new services was preferred, with each library identifying two or three different subject areas for which to prepare resources for federated searching and/or resource discovery.
- MIG members expected and hoped the "deep-linking" feature would provide the bridge between the library Web site or other Web page and the particular set of resources.
- Librarians wanted to offer students a "Google-like" tool, but with better sources.

MIG members shared concerns about how the search and retrieval technology would actually perform. Some questions they wanted to explore and test were:

- How long would searches take?
- How would the search engine rank results, and if by relevancy how accurate would that be?
- Of each library's electronic resources, how many would be in the MetaLib Central KnowledgeBase (CKB) and how many could be effectively searched in a federated manner?
- How would the group explain the complexities of resource inclusion or exclusion, search performance and search results to students?

The previous questions formed the basis of much of the product testing that ensued for the next year. As a result of discussions, the group agreed that each library would introduce selected MetaLib functions according to their own schedules and within the schemes of their own Web sites. In addition, each library was responsible for how any Web page using a MetaLib function would appear, as long as it contained the common design element that would be developed to represent the service. The short term goals were sketchy, and the long term ones even more so, given the planned conversion to a new ILS system in 2005-2006. Everyone anticipated greater and higher level attention to the libraries' public Web presences when the potential and implications of the new system became more readily apparent.

TRAINING

With this framework in mind, MIG members prepared for training by collecting connection data—vendor’s federated search server address and database code; library’s account name and password—for the electronic resources to which they subscribed. Though the five libraries shared subscriptions to a handful of resources, most were unique to each library, thus eliminating the potential for sharing the data collection burden. Each library prioritized its list of resources and contacted vendors on their own timetable. This process became more targeted after training when participants learned about the different types of search and display configurations and which resources had search configurations available in the MetaLib CKB. In addition, participants learned that to allow the connection to their servers, some vendors required the IP address from which the searches were originating, thus adding a potential notification step to the communication between the vendors and the library staff who were creating records for their library’s resources in the CKB.

In the days and few weeks following training the Five Colleges’ MetaLib project manager and MIG developed a clearer picture of areas of responsibility and tasks to be accomplished prior to public launch. Figure 2 illustrates steps in the implementation process and the individuals or groups responsible for them.

NEXT FALTERING STEPS

The new version of MetaLib, 3.10, was released just days before Ex Libris staff created the Five Colleges’ installation on the server dedicated to their ASP customers, and MIG was the first to receive training in it. This was the bleeding edge. Through training and initial system and resource set-up efforts, the group suffered a variety of shortcomings, but it became very proficient at trouble-shooting, problem-solving, and communicating internally and through the project manager to Ex Libris’ MetaLib support and the FCLC. Preliminary concerns about search run times and rankings in results lists proved well-founded. Software bugs prevented anyone from editing categories or creating subcategories, and creating direct or “deep” links to sub-levels of the interface was minimally possible but practically useless. The administrative and user interfaces of the first release of Version 3 were not compatible with a Macintosh platform.

FIGURE 2. The Implementation Process and the Players Responsible

Task:	Person or Group Responsible:
• Potential federated search product review	• Digital Environment Development Coordinating Committee
• Product choice and Five Colleges' MetaLib Implementation Group (MIG) appointment	• Five College Librarians' Council
• MIG development, project coordination, and Ex Libris contact point	• Five Colleges' MetaLib project manager
• Customer training and product support	• Ex Libris/MetaLib customer support
• User interface customization	• Five Colleges' Reference, Instruction and Outreach Committee (RIO)
• Usability testing	• RIO
• Choices about scope and role of MetaLib applications at local library	• Local MetaLib project coordinator and project team
• Local library resource configurations and category set-ups	• Local MetaLib project teams
• Public roll-out and user training, documentation	• Local MetaLib project teams

These were significant impediments for all the libraries. Still, MIG continued to discuss aspects of the implementation. It reviewed fields in the Information Resource Description (IRD) records, especially those that would appear in the public display. Aiming for certain elements of consistency across all local implementations, the group decided on a descriptive data structure and syntax for the resource records. MIG also reviewed the default resource types and agreed on modifications to the types that could be assigned to resources in the IRD records. These resource types—archives, e-book, e-journal, encyclopedia/dictionary, image, etc.—had to accurately describe the libraries' collections so that users could effectively limit their searches. With these basic standards in place, members created IRD records for those resources with search and display configurations available in the CKB. MIG members explored the administrative functions which created Quick Sets and Categories, tested the user interface, and conducted collaborative trouble-shooting as they waited for software performance improvements.

Shortly after MIG completed training, the project manager met with RIO to discuss options for customizing the user interface. Both groups had to contend with new software loaded on a server in another state with which no one could directly interact. The vendor controlled access and stipulated what they could and could not modify for the Five Colleges' installation. Most options for search and display settings and user interface labels and icons could be set once and applied to all libraries

uniformly. Such were the conditions of the contract as an ASP customer. As MIG had established its scope, goals and process, while figuring out the promise and limitations of the product, RIO had a similar challenge.

A UNIFIED FRONT: FROM METALIB TO CROSSSEARCH

Working collegially within an institution is critical to achieving effective and efficient goals for any task. With it comes the challenge of how to work cooperatively when not all agree on issues or how to reach consensus in order to move on. Now, take that process, add in four other institutions, and all of the complications related to the decision making process get heightened.

Though the five libraries had worked cooperatively on joint projects over the years, each project required new negotiation to accomplish the set goals for the current project. In this case, both MIG and RIO had to work collaboratively on the customization, testing and implementation of the MetaLib interface. Though library staff at each individual institution may have agreed internally on what they thought would be best for their users, this did not necessarily translate into a common look and feel agreeable to all five libraries. RIO devoted over six months to rigorous internal testing of MetaLib, getting feedback from colleagues, faculty and students, and then negotiating amongst themselves to reach a consensus on terminology and graphics. Their decisions had to conform with the limited customization options available to ASP customers, as determined by the vendor.

The five RIO members, one representing each library, met frequently to discuss recommendations made at each institution on the following MetaLib issues:

- icons underneath the main banner
- functionality and requirements of public rollout
- creating local branding for MetaLib
- testing
- label names
- free resources to include in the guest/non-affiliated user instance
- how to use quick sets and categories and if they should be common to all instances
- help guides to be created
- training and how to use MetaLib in instruction

- how to reduce user frustration
- public roll-out

FINDING A COMMON GROUND

Because each of the four colleges and the university all have unique user populations, needs and patterns, members of RIO spent considerable time learning about user behavior needs and patterns and the respective goals of each institution before they began work on developing commonalities. The driving force was focusing on how users would interpret what they saw and how federated searching would be used as an instructional tool. With the users constantly in mind, the members then negotiated their priorities of what interface changes were critical to have, what would be nice to have, and what could be put aside.

Icons and Labels

One of the main areas of discussion was which icons and labels to use throughout the public interface. Each institution tested various icons and descriptive labels with their users and RIO members returned with different responses to what users thought each of these terms meant, as well as suggested alternate terms. Staff members were also polled to determine if the pictorial icons should be replaced with word icons such as “login/logout” and “exit” with a door icon, instead of a padlock icon. Because not everyone agreed, RIO needed to negotiate common terms. Also controversial was the shopping basket/cart icon. An alternative choice was to use a folder icon instead (denoting the idea of putting items in a folder—as many databases do). The users who were tested understood the shopping basket as a collection/selecting function, although some expected to pay for what they collected and others did not. Despite the objections of various Five College Libraries staff, RIO decided to continue to use the shopping basket as the icon denoting “collecting”/selection, instead of a folder. The four colleges also wanted to suppress the Language icon, whereas the university wanted to keep it for their international community of users. However, the different language interfaces were not functioning properly at the time, so RIO agreed to suppress the icon.

Tabs and Labels

The default tabs for different MetaLib functions were Quick Search, Find Database, Find E-Journal, MetaSearch and My Search. The term “metasearch” was a source of confusion for many in the usability testing. Following testing and discussion, RIO agreed to recommend that Quick Search become Basic Search and MetaSearch become Advanced Search. The resource discovery features for databases and electronic journals were left alone.

Naming the Three Formats for Viewing a Record

All institutions agreed that the default terms Brief View, Full View and Table View did not clearly describe their function (or were even deceptive as to their function). Each institution offered different suggestions of what users preferred for these terms. Recommendations were often based on current terminology present on library Web pages, databases, help screens, as well as the terms that were used in instruction for a given library. Here again, consensus ruled. The terms agreed upon were: Brief View, Detailed View and List.

Determining a Common Name for the Catalog

Although the five colleges share a common library catalog interface, each maintained their own library name with the catalog. The UMass library catalog holdings are separate from the other four college holdings. Students have to “toggle” from the combined four colleges catalog to the UMass catalog to find individual holdings. Both MIG and RIO were interested in setting up a Quick Set for the combined Library catalogs. Using the federated search functionality of MetaLib, users from the five colleges could, for the first time, simultaneously search the holdings of all five libraries. With a new ILS in the offing, the group decided to name the search “Combined Five College Library Catalogs.”

Common “Quick Sets” and Databases Within Them

RIO members thought it important to determine which “Quick Sets” to share and which common databases to configure within them. They agreed that the “Basic Search” feature should be geared to undergraduate research and would contain some common Quick Sets with databases common to all of the five colleges. After assessing the most commonly requested items, RIO recommended the following Quick Sets:

- “Need a Book” (the combined five college catalog search, plus WorldCat)
- “Need an Article” (Academic Search Premier and Expanded Academic ASAP databases) and
- A few topical current event sets (such as “Terrorism” and “Hurricane Katrina”)

Category Function Discussion

RIO also spent time defining the Category function. The definition of what constitutes a “category” (for example: should it be a class or an academic discipline?) would be a decision made locally at each institution. RIO concentrated their discussion of “category” on which databases to include in a category, no matter which definition was used. RIO members disagreed on how many databases to have checked by default in a category. Library staff at a few institutions wanted to have all of their databases checked (selected for searching as the default), and some were concerned that the number of results returned would be so numerous as to end up like “Google” and therefore, not very meaningful to patrons. Some were concerned that patrons would only look at the first few pages of results, at best, and so they preferred to limit the pre-selected databases in an effort to reduce search results to those most relevant. Cervone (2005) suggested using a “best bets” group of three “major” databases in each area which could help cut down on the confusion of a long list of databases. He suggested then creating a secondary grouping of resources for those who would want to search others. Tallent (2004) also remarked on students not searching databases or systems deeply or thoroughly. Studies done at his institution reiterated that students may only view the first few screens and determine that searching subsequent screens may not be worth their effort, so they may either choose what is there or abort and retry. This was a concern by some of the RIO libraries in choosing too many databases to search together. However, RIO reached a compromise to automatically select the top ten databases in any category (although a few institutions thought ten was too large a number), still allowing the user to check or uncheck items that remained in the list. Each institution listed the databases in each category, putting their most important (core) databases first. The rationale for choosing ten was that this was a pilot and after data were gathered, there would be more evidence of what the top databases might be to include in the core list.

RIO's suggestions for Quick Sets and Categories were initially used as guidelines by each of the five libraries. However, everyone understood that each library could alter their definitions and resources as needed based on their local implementations and as assessments progressed.

Free Resources

In addition to deciding on common interface elements for the five colleges, RIO also had the task of working on a Five Colleges Inc. "sixth instance" of MetaLib. This interface would contain information about the Five Colleges and resources that were accessible to off-campus guest users. RIO worked together to recommend the following resources for that instance:

- links to each library's home page,
- library catalogs,
- archives database,
- free databases available,
- several key internet sources recommended by all.

Fortunately, these decisions were relatively painless, perhaps because RIO was only looking at resources commonly available to all (i.e., the free resources).

Choosing a Local Name for MetaLib

RIO led the effort to determine a name and "brand" that the Five Colleges could use for this product. After soliciting possible names from all interested library staff at each institution, patrons were asked to name this product during usability testing at each library. As a result, based predominantly on user feedback, RIO agreed on the term CrossSearch. For the remainder of this article CrossSearch will be used instead of MetaLib when referring to the Five College Implementation and MetaLib when referring to the broader issues related to MetaLib (see Figure 3).

Creating a Banner for CrossSearch

With a name chosen, RIO then worked with a graphic design consultant to develop banners for each institution and for the Five College Inc.'s "sixth instance." Each library chose its own institutional color

schemes. There was some controversy over which other links to provide on the banner, such as “Home” (meaning university or library), “Ask a Librarian,” “Research Help” or “About.” Several iterations of the banner were reviewed and more input sought from library staff and users at each institution. RIO felt strongly that a unified appearance for all six instances of the CrossSearch banner was of primary importance. Five college users were accustomed to their common library catalog, and CrossSearch should offer this same feeling of similarity. Decisions made for the banner included:

- Individual Library logos to be placed to the right of the CrossSearch logo
- CrossSearch Help (linked to an About page and help with using CrossSearch)
- Research Help (linked to some form of an Ask a Librarian page for that institution)
- Individual Library’s name (e.g. UMass Libraries Home, Smith College’s Library Home)

At this point the other four colleges became concerned about how to explain some of the confusing navigation, search results lists, and output functions. They decided to postpone further implementation until Ex Libris could make improvements and allow for greater customization. UMass, however, decided to forge ahead with introducing CrossSearch to classes. In this manner the consortium was able to benefit from efforts of the others. Instead of everyone investing their time in seeing how the product worked in classes, they used results from the trial groups for further implementation planning.

Figure 4 summarizes how the consortia (inclusive of all working groups) worked together (or independently) to make decisions.

TEACHING CROSSSEARCH

Three UMass librarians worked with the UMass CrossSearch implementation group to include CrossSearch in a few library instruction sessions in order to assess student response. The group discussed which functions to present to classes and created a teaching handout to assist in the sessions. While the librarians were enthusiastic about the potential of federated searching, they were concerned about a number of problems with CrossSearch functionality including long search run times and ques-

FIGURE 3. Example of the Basic Search Interface Agreed to by RIO Members



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FIGURE 4. Consortial and Individual Library Responsibilities

<i>Stepping together:</i>	<i>Stepping out:</i>
• Service implications for product hosted by vendor	• Coordination of implementation and service launch within library
• Product development, upgrades and resource updates	• Determining purpose and fit within suite of library's Web-based tools and services
• Technology and product performance choices	• Classification scheme and resource category set-up
• Customer support from vendor	• Resource configuration and description
• User interface elements and usability	• Authentication
• Default settings with bearing on functionality	• Staff training
• Resource description standard	• User instruction and documentation
• Trouble-shooting and shared support	• Public roll-out and marketing of service(s)
	• Evaluating impact on user communities

tions about search results. Each agreed he or she would continue experimenting with it, while hoping that operability would improve.

MIG and RIO wanted to use CrossSearch as a resource discovery tool for undergraduate students in general, as well as a way to teach more advanced information literacy skills to upper level undergraduates. To achieve this, the teaching librarians and local implementation group decided to use “Categories” and “Sub Categories” to help students identify databases that would be useful in classes within a general subject area, whether or not the databases were configured for federated

searching. By providing categories for specific classes librarians could focus on the databases with the scholarly literature relevant to their area. Databases that were relevant to a specific class and could be searched simultaneously were put in a Sub Category. Each librarian submitted a list of databases that would be appropriate for the general subject categories, e.g., Legal Studies, Sociology and Education, and a list of databases that would be specific to the classes for which the library instruction sessions were being held, e.g., Sociology of Law and Education and Social Justice. The librarian who worked with the MetaLib Central Knowledgebase (CKB) determined which databases would go in the general subject category and which would go in the class Sub Category, depending on whether or not it was possible to configure a database for federated search.

In addition to observing how the students used and understood CrossSearch, librarians wanted to monitor students' perceptions of the type of information that they were receiving. Baer (2004) remarked that evaluating information becomes more complicated when using federating searching as students may not understand that they are only searching some databases together and not all of them. Students may feel that only those databases included are important. He also reminds librarians that the databases may interpret searches differently, thus the results may not be as refined or consistent as a search in a native database would be. Librarians will need to work with students to help them understand what fields were searched and how to evaluate the results that are retrieved.

After spending additional time testing CrossSearch, the first librarian scheduled to teach it to students determined that despite lingering reservations, she would include it in her class presentation. The first class was Sociology of Law, an upper level undergraduate course consisting largely of sociology majors. After an overview of library services and resources, the librarian demonstrated how to search two databases, LegalTrac and Sociological Abstracts. The students were then asked to locate one article on a particular subject in each of the databases using the search techniques previously demonstrated. The librarian and the students discussed their search strategies and results. One objective of this segment of the class was to have students grapple with two distinctly different database interfaces so they would better appreciate the advantages and limitations of federated searching. Helfer (2005) pointed out how enhanced search features are lost with federated searching. Librarians teaching these classes were sure to point out the

“lowest common denominators,” such as the types of Boolean searching, phrase searching and truncation that could transfer across databases.

Next, the librarian introduced CrossSearch as a new technology which allowed students to search numerous databases simultaneously using one interface. She explained that on the front page, under the “Category” Legal Studies and the “Sub Category” Sociology of Law, she had included the databases most appropriate for their research topics that they could search all at once! The librarian also pointed out that students could select the “Sub Category” General to find databases relevant to the entire subject area of legal studies and some of these they could select and search simultaneously.

After a demonstration of Basic Search, Expanded Search and My Space, students were asked to search CrossSearch using the same topic they searched earlier in LegalTrac and Sociological Abstracts. Their immediate response was generally quite positive; they were impressed that they were able to retrieve results from not only LegalTrac and Sociological Abstracts, but also PsycINFO, Social Science Abstracts and PsycARTICLES using one search statement. The students also understood that the databases included in each of the “Categories” and “Sub Categories” in CrossSearch were selected from the hundreds of databases available at UMass for their relevancy to general as well as more specific subject areas.

Several students noted the smaller number of options for limiting or refining their searches, e.g., limiting to peer reviewed journals, use of truncation and wildcard searching, but agreed that the trade off might be worth it in many situations. They also noticed how easily they could go to a database’s native interface after determining in CrossSearch that it contained materials that were particularly useful for their research.

A follow-up survey was e-mailed to all students in the class. Additionally, the other librarians worked with their assigned classes to get feedback on using CrossSearch. The UMass representative to RIO conveyed the results to the group for use in further interface decisions that might be made. As a result, one of the other four colleges embarked on their form of testing with classes. The overall consensus was that although the system was not perfect, it offered some very useful tools for students both at the general and subject specific levels. Other libraries also understand the importance of getting a product out to the users if it will enhance their information seeking or learning behaviors, rather than waiting for perfection of that tool (Madison and Hyland-Carver 2005). Some local implementation groups decided to pursue both types of searching (Quick and Categories) as would fit the needs of the stu-

dents at each institution. Two of the institutions saw value in creating subject specific categories, whereas three felt that offering only the general categories would suffice for the majority of their students. Although Buczynski (2005) contends that these systems are not designed to meet the needs of those who are experts in searching, but rather they are tools for general searching. The librarians testing CrossSearch in their classes found that students did appreciate having their subject databases grouped together for searching, as long as they could easily get to the native interface for more refined searching, if needed.

***MIG'S CHALLENGE:
HOW TO KEEP THE PROJECT MOVING AHEAD***

As RIO sorted through language alternatives for the user interface, MIG met through the fall and winter to discuss individual library progress with authentication, resource configurations, quick set and category set-ups, as well as how customer support and software were performing. Midway through fall semester the project manager and campus coordinators for the individual library implementation groups met to discuss each library's project plan. Everyone felt that even though the opportunity to offer this new and useful service was attractive, implementation remained an uphill climb due to various factors.

Several members of MIG had to set aside the CrossSearch project as the busy fall semester progressed, and other projects took priority. Along with the reduction in personnel resources, additional challenges—some internal, some software-related, and some inherent to the current federated search landscape—also remained. Software performance was often quirky and at times downright confusing. Navigation through the search screens was not intuitive. Search results ranking was unpredictable. Many electronic resources in the libraries' collections were not compatible with federated search standards or they were not in the MetaLib CKB. As ASP customers of MetaLib, Five College library staff, even if capable, could not create or add new search and display configuration records to the CKB. Each institution had its own user authentication system, and the MetaLib Patron Directory System (PDS) for the "My Library" features had to be configured to work with each institution. Initially, some institutions were concerned about potential security breaches in passing user data to a third party. All of the libraries shared one MetaLib PDS user login screen, and MIG had to determine

how to customize it so that the requisite login elements were clear for each institution. This complex package of MetaLib functions was bundled tightly together, making it impossible for any library to select and insert discrete tools into their individual Web sites.

MIG grappled with all of these issues while individual libraries continued to explore ways to make CrossSearch services publicly available. Three libraries remained in a holding pattern, neither actively customizing their instances nor planning a public launch. Two libraries were still entertaining potential roles for CrossSearch within their Web service. No one wanted to abandon the project entirely, and staff from each library routinely monitored the impact of MetaLib service packs and upgrades.

The project manager outlined the intentions for FCLC and informed them that while work would continue in limited ways, none of the library implementation groups anticipated a public launch of CrossSearch prior to the introduction of the new ILS. Finally, as the new ILS implementation intensified, work on CrossSearch ceased.

CONCLUSION

The CrossSearch project is not dead. Five College Libraries' systems staff is installing a new server with the intent of loading MetaLib, SFX and Verde software locally for the Five Colleges. Library staff will have greater flexibility to configure and customize MetaLib according to each library's systems and needs. MIG and RIO set the groundwork for the resource description standards, common brand and terminology, and usability testing. In the process of exploring MetaLib and its implementation, Five Colleges library staff grew more familiar with the vendor, Ex Libris, and further enhanced a collaborative spirit which will ultimately carry forward the CrossSearch and Aleph ILS implementations. Through teamwork, shared resources, and a motivation to work towards a common goal, the librarians and staff in this consortium again have benefited from the spirit of collaboration that started many years ago among the five colleges of Western Massachusetts.

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