Prospector: A Multivendor, Multitype, and Multistate Western Union Catalog

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The Prospector project represents a unique union catalog. The origin, goals, and design of the union catalog that uses the INN-Reach system are presented. Challenges of the union catalog include the integration of records from libraries that do not use the Innovative Interfaces system and the development of best practices for participating libraries.

The Prospector project is a union catalog of sixteen libraries in Colorado and Wyoming built around the INN-Reach software from Innovative Interfaces, Inc. (III).[1] In 1997, the Colorado Alliance of Research Libraries (the Colorado Alliance) and the University of Northern Colorado submitted a joint grant proposal to create a regional union catalog for many of the major academic and public libraries in the region. The project would allow users to view library holdings and circulation information with a single query of the central database. The union catalog also would allow patrons to request items from any of the participating libraries and have them delivered to a nearby local library. However, unlike many of the other union catalogs in the country, Prospector has several unique elements:

- It is multistate (Colorado and Wyoming).
- It is multisystem (incorporating systems from Innovative Interfaces and CARL Corporation; plans call for Voyager from Endeavor).
- It is multi-library-type (academic, public, and special libraries).

Regional union catalogs representing the cataloged collections of libraries that are related by geography, subject, or library type have been extant for many years. Early leaders in the field spearheaded locally developed systems such as the University of California's MELVYL system and the Illinois Library Computer Systems Organization's (ILCSO) ILLINET Online system, which became operational in 1980.[2] The commercial integrated library system market began to emerge in the late 1980s and the 1990s with such vendors as Innovative Interfaces and its work with OhioLink through its INN-Reach union catalog product, and the CARL System.[3] Many major vendors now have union catalog solutions for a single physical union catalog, although most have the requirement that participating libraries all use the same integrated library system. An alternative approach that is also becoming popular, because of the heterogeneous nature of the ILS marketplace and the widespread implementation of Z39.50, is for libraries to create virtual union catalogs through broadcast searching. This solution is available from many ILS vendors as well as through organizations such as OCLC and its WebZ software. There is not a single "right" answer for whether regional catalog searching and document delivery is best accomplished through a physical or virtual union catalog. Each solution has benefits and drawbacks that must be balanced against the mix of vendors, economics, politics, and technical issues within a state. Prospector is somewhat unusual in that it does create a single physical union catalog but allows for the incorporation of other library systems, made possible through a published specification from Innovative Interfaces.

Prospector History, Funding, and Project Goals

Colorado has a long history of resource sharing through a variety of programs, including use of the Colorado Library Card statewide borrower's card and access to individual libraries' online catalogs through the Access Colorado Library Information Network (ACLIN) and other regional catalogs. The Colorado Alliance has taken a leadership role within the state in promoting cooperation among major academic and public libraries in the areas of automation, joint acquisitions, and other cooperative endeavors. Existing online catalog software enabled patrons to easily search individual online catalogs, but searching several catalogs was a tedious task requiring many steps. It has long been a goal of the alliance to have a true union catalog of holdings for all member libraries.

To forward this goal, in 1997 the Colorado Alliance of Research Libraries and the University of Northern Colorado jointly applied for and received a grant from the Colorado Technology Grant and Revolving Loan Program to establish the Colorado Unified Catalog, a unified catalog of holdings for sixteen of the major academic, public, and special libraries in Colorado.[4] The University of Wyoming was included in the project through separate funding. The grant of $640,000 was used to develop a union catalog that would support searching and patron borrowing from a single database. The Colorado Alliance

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and the University of Northern Colorado contributed an additional $189,500 of in-kind services to the unified catalog project. Additionally, the Colorado Alliance contributed $119,000 of in-kind funds to support purchase of distributed system software. The Colorado Unified Catalog project, later named Prospector, was based upon the INN-Reach software developed by Innovative Interfaces, Inc. It included all Innovative Interfaces sites in Colorado as of December 1996 as well as the CARL system sites that were members of the nonprofit Colorado Alliance of Research Libraries.[5]

The Colorado Unified Catalog project had two major goals:

- the development of a global catalog database containing the library holdings of the largest public and academic libraries in the region; and
- the development of an automated borrowing system so that users at any of the participating libraries could easily request materials electronically from any other participating libraries.[6]

The union catalog would allow users to view library holdings and circulation information on titles with a single query of the global database. Once titles were located, patrons could request available items and have them delivered to their home library.

The grant proposal identified four major goals and outcomes of the project: access, equity, connections, and content and training. By creating a global catalog, the Colorado Unified Catalog project would provide students, faculty, staff, and patrons free and open access to the union catalog via the Internet. Patrons from all participating libraries would have equal access to the combined holdings of all sixteen participating libraries, thus greatly enhancing resources available to patrons without the necessity of travel across the state. Connectivity was greatly enhanced by the installation of high-speed Internet access in the Colorado Alliance office where the union catalog server was housed. The unified catalog project amassed, in one place, the complete cataloged collections of the major libraries in the region creating a single, easy-to-use public interface. Training for the catalog would be conducted in each library so that it could be integrated into the standard training and reference services of each participating library.[7]

Addressing statewide goals for libraries, the Colorado Unified Catalog was designed to dovetail with an existing project in Colorado called the Access Colorado Library and Information Network (ACLIN) in several ways. The goal of ACLIN was to provide statewide searching of several hundred library catalogs in Colorado through broadcast Z39.50 searching. However, because of the large number of online library catalogs (too many Z39.50 targets cause broadcast searching to be slow) and poor network infrastructure in some parts of the state, the creation of physical union catalogs, such as Prospector, greatly enhanced the ability for a project such as ACLIN to be successful. As stated in the grant proposal it will:

- make ACLIN more efficient since sixteen libraries will be grouped together and can be accessed via a single search, thus saving ALCIN users steps in searching;
- enhance ACLIN's document delivery plans since patrons can make requests themselves;
- offer both Web and character interfaces for various levels of users;
- provide access via ACLIN's dial-in ports as well as via the Internet; and
- support ALCIN's future developments based on a Z39.50 environment.[8]

Work on the development of the Colorado Unified Catalog began in mid-1997. Even while contract negotiations were underway in mid- to late 1997, groups were busy undertaking discussions on the design and structure of the unified catalog. Work on development of profiling and system specifications continued through July 1998. This data was entered onto the server at the Colorado Alliance office and a test database was created in August 1998. Testing was completed in November 1998 and the first records were loaded in December 1998. The creation of the database for the first twelve libraries took seven months. During the database load the catalog was available for searching, although most participating libraries did not highlight the system in their local OPACs.

Innovative Interfaces, Inc. conducted training on the actual patron requesting and circulation functions at three sites over the period from May through July 1999. As of January 2000 the catalog included more than 3.6 million unique bibliographic records of the twelve largest libraries in Colorado (more than 6.6 million MARC records have been contributed, which has resulted in 3.6 million unique records after de-duplication). With the database in place and OPAC and circulation training complete, Prospector went "live" for patron-initiated requests in the first eight libraries on July 23, 1999. As of December 31, 1999, all twelve Innovative sites were "live" in Prospector.

The final programming for loading the records from CARL-system sites will be completed in spring 2000. It is anticipated that CARL-system library records will be loaded in late spring 2000 and will bring the database to more than five million unique MARC records, with more than ten million item records. Since the receipt of the grant, two participating libraries have selected Endeavor as their online integrated system. Contract negotiations are underway between Innovative Interfaces and the

Colorado Alliance to come to an agreement on loading records for the Endeavor libraries into Prospector.

Politics and Marketing of Prospector

Planning and policy making are inherently political processes in which participants choose among goals and options in order to make decisions and to direct actions. For Prospector the diverse makeup of multitype libraries and multisystems augured for different perspectives on implementation from the onset. Nearly every department in member libraries would have an impact from the project. To be successful in carrying out their charges, the work of the task forces appointed to implement Prospector had to address how these staff could influence the process and how local practices would be affected. The challenge was to engage staff in the process since the task force structure precluded representation from every member library. Meeting this challenge would be vital to ensuring input and fostering buy-in and advocacy for Prospector in member institutions. Consequently, in addition to reviewing standards or best practices and focusing on the goals stipulated in the grant, obtaining factual knowledge about member practices and resources and encouraging communications served as key ingredients in planning and policy development.

General Process

Profiling Prospector, a main charge for the Cataloging/Reference Task Force, illustrates the general process employed in planning and how key ingredients were applied to gain input and produce results. The first step involved the task force's review of the grant's aims for the unified catalog. With that framework as a basis, a planning process was outlined and shared with participants. The Prospector Web site detailed the specification development process, including the schedule and opportunities for input.

Next the task force surveyed participants for information on their systems: bibliographic indexing rules, types of indexes, characters indexed in phrase indexes, indexes on which authority control performed, and suppliers of authority records. Using this data, the task force identified the commonalties and differences to determine what to create in the unified catalog. Members also consulted Innovative Interfaces and reviewed what previous INN-Reach customers had established.

Draft recommendations for indexing, indexes, record overlay, and record display specifications were then posted on the Prospector Web site and participants requested to review and provide input. A notice in *Datalink: The Alliance Newsletter* (www.coalliance.org/datalink) also referenced the site.

At the same time, testing was performed using draft specifications in order to assess them and to check for other concerns that testing might reveal. Because of the importance of the recommendations, an open forum was held to receive additional comments. Following the forum, the task force members made final adjustments to the specifications.

After the period for public comment ended, the specifications were submitted as recommendations to the Prospector Steering Committee for approval. Once approved, the specifications became official and were referenced in all site visits.

Issues

Because of the design of INN-Reach, participants must make decisions about contribution of records, priorities for what record would serve as the master record, order of loading, indexing, indexes, and displays for the unified catalog. Circulation functions require decisions about services for patron types, circulation statuses, loan periods, numbers of loans, renewals, recalls, checkouts, holds, overdues, fines, notices, pick-up locations, and billing.

In the case of Prospector, expectations regarding what would be controversial met with a few surprises. For example, the master record, the bibliographic record from one participating library to which holdings of other libraries are displayed, is based upon encoding level and the library priority list. The latter determines if the incoming record should replace an existing level; a record with a higher level will replace a lower one. Based upon the data collected from libraries, a proposal categorized libraries into the following order: large, special, and "all others." The order was further factored by a member library's application of authority control and participation in Program for Cooperative Cataloging programs. The proposal drew minimal comment from libraries. Pride of ownership was not an obstacle. Everyone was committed to the fullest authorized form of the record.

How many loans an individual could request was the subject of early debate. There were concerns about discrepancies between local limits for borrowing and the possible setting of a higher number of loans on Prospector. A corollary concern was that a high number might result in depleting a member library's collection. Previous experience with borrowing by a subset of members shed light on the issue; there were no problems with loan limits. In fact, INN-Reach supports "load leveling" across participating libraries randomly as well as by

precedence tables thus avoiding systematic checkout from one library only. Members decided that they could always pass a request on to another owning library if necessary and monitor loans to determine if any abuses would develop. With these options, it then became possible to establish a forty checkout limit for individual patrons in Prospector.

Differences in cataloging practices engendered more discussion because of the potential for a policy that might affect local practice. In the course of comparing practices of institutions, the Cataloging/Reference Task Force identified multiple records for the same serial titles that reflected differences in forms of entry and multiple versions treated either in separate records or on the same record. There was wide variety in statements of holdings. These differences warranted gathering further information on holdings; multiple versions, especially those involving electronic versions; and successive/latest entry for cataloging. The task force decided to hold a focus group on serials and invited staff in member libraries from serials, cataloging, and reference to attend. In the meantime, visits to participating libraries were instituted, the first of the roadshows, to discuss serials practices, their implications for overlays and displays, and options for handling them.

The focus group attracted a large attendance and proved useful in gathering information about practices and the concerns of participating libraries regarding serials. Most libraries reported individual practices for recording holdings. Although participants expressed a desire for consistency, attendees also shared that resources are not available to retroactively change them. Instead attendees encouraged development of a best practice recommendation that would follow the NISO standards for those libraries wishing to change practices.

With the exception of electronic versions of serials, focus group participants had no problem with multiple formats in the same bibliographic record as long as it was clear to users. Electronic versions prompted a lot of questions about what to do with 856 links to restricted access resources and about changes in software. It was clear that this issue would need further investigation by the task force.

The hottest area, successive or latest entry cataloging of serials, registered strong preferences by proponents. Attendees did not welcome changing practice in either direction. Instead there were questions asked about possible system changes and about the conduct of use studies to determine what problems might arise from latest entry records in the system.

With the information gained from the focus group meeting, the task force assigned priority to the areas and pursued latest/successive entry as the top priority. Already the task force had consulted Innovative Interfaces, Inc. and received a negative reply to possible changes to matching algorithms, loading programs, and record values that could deal with practices of participants because of the software structure. It was technically impossible for a latest entry and successive entry record to load separately given their match on the OCLC number.

The predominant use of successive entry and its status as the current national standard persuaded the task force initially to recommend coding latest entry in a special way so that the record for such an entry would not be the master record in the system unless it was unique. This interim measure led to the policy recommendation that successive entry serve as the standard for Prospector. As a part of the recommendation, members are asked to not undertake retroactive conversion/recataloging projects to change existing latest entry records. Up to the meeting of the Prospector Board of Directors, the serials policy was argued. The approval by the board illustrates that controversial issues may require that leadership commit their libraries to policies.

Marketing

Marketing incorporates an overall strategy of identifying patrons' needs, designing products to meet those needs, implementing the products, and promoting and evaluating them. The twin goals of Prospector are: (1) one-stop shopping and expanded access regardless of location, and (2) an automated borrowing system to facilitate fast delivery of materials that addressed problems experienced by patrons in searching and obtaining materials. The grant proposal outlined a plan for member libraries to meet these goals through INN-Reach software and the cooperative efforts of participating members. With the implementation of the unified catalog and patron-initiated borrowing, the next pieces of the strategy, promotion and evaluation, come into play.

Member Libraries

Commitment to a cooperative venture takes time and energy. The support for Prospector at the library director and dean level had to be translated to staff in member libraries whose efforts would be necessary to support the unified catalog and patron-initiated loans. Staff members had to become acquainted with how Prospector would benefit patrons and their work. Hence internal promotion was a necessary component throughout planning and policy development and with implementation to users.

Because of the numbers of staff in member libraries, no one method would assure awareness of developments for Prospector. The approach involved the Alliance's newsletter *(DataLink)*, a Prospector Web site, electronic

discussion lists, e-mail, correspondence, phone calls, documentation, training sessions, and many site visits. The site visits facilitated interaction across institutional lines and were important for discussing critical issues at the local level. In arranging for site visits, it was important to clarify what the staff members wanted to discuss. A general update on Prospector might be followed by other technical sessions such as preparing the library's database for load into the Prospector system.

Participants' questions emphasized the importance of sharing the plan for developing Prospector and the basic concepts guiding the implementation planning and policy process as listed below. These concepts bore repeating because a staff member could have been hearing about Prospector for the first time.

- Decisions and directions are guided by data and input gathered from participants, standards/best practices, system capabilities, and the aims for Prospector described in the grant.
- Relatively few local practices are affected by participating in Prospector.
- Inclusiveness in record contributions would build Prospector into a rich resource for users; however, participating libraries can exert control over contributions.
- Global policies are developed for Prospector only; local sites define their own local policies.
- Assistance is available to participating libraries in coming up with solutions for special circumstances.
- Prospector is not reinventing the wheel. Although the multitype library and multisystem involvement would produce a new model of INN-Reach, other INN-Reach sites could serve as models.
- Think globally but act locally. More than a catchphrase, this statement acknowledges the reality of individual library circumstances and the balancing of Prospector goals to maximize access and use of resources by patrons.

Patrons

The design of the PAC, a promotional brochure, and individual library public relations efforts all served to promote Prospector's availability to users. Prospector provides access via Telnet and the Web. The impetus, however, was to examine member WebPACs and create a Prospector WebPAC that exemplified the best in menu design including caption descriptions, navigational aids, and consistency in display of elements among search screens. Special attention was paid to providing example searches that would have appeal for the diversity of patrons served by the membership.

After mulling over several name possibilities, the Alliance staff suggested the name Prospector for the unified catalog, connoting the rich mining history of the Rocky Mountain area. This identity found its depiction in a classic picture of a gold miner supplied by the Colorado Historical Society. Representing the user, the miner is the center panning for gold, an apt image for users exploring the richness of resources from the unified catalog. The incorporation of the image as the logo on the Web site and the catalog was followed by its adoption for the entire cooperative venture. Name recognition spread quickly.

To facilitate promotion at member libraries, the Alliance staff designed a brochure. The design features a brief description of the unified catalog, a list of members and information for patrons on how to connect, what's available on Prospector, how to use the self-service borrowing, and how to view their circulation record. Many libraries have Web-mounted guides or paper handouts in their instructional service, using the Alliance-designed brochure as a model.

Finally, staff in member libraries exercised individual approaches to promote Prospector to users. Denison Library describes and provides a link to Prospector on its Web list of databases and help guides. Colorado State University Libraries devoted the front page of its library newsletter to "hunting for hidden gold," the introduction of Prospector. A special newsletter for Auraria's history faculty highlighted Prospector in its database news section. The University Libraries of the University of Colorado at Boulder describes the unified catalog in its Web site on its State Services page. More introductions came from instructional classes held by every member library.

Profile of Participating Libraries

Prospector is unique since it is multistate, multitype, and multisystem. Of the sixteen members (see appendix A), almost all are located along the front range of the Rocky Mountains extending from Laramie, Wyoming, southward to Colorado Springs, Colorado. Only Fort Lewis College is located on the western slope of the mountains. Despite the distances, a network of courier service connects all members. Within the membership are eleven public and private academic libraries, three special libraries representing law and medicine, and two public libraries that serve almost one million registered patrons.

Twelve of the libraries operate Innopac and are loaded into Prospector. Two libraries on the CARL System are slated for loading in mid-2000. Two other libraries are migrating to the Voyager System by Endeavor Information Systems in the summer of 2000. Hopes are to incorporate them into the system in 2001.

Description of How INN-Reach Works

The INN-Reach software is designed to provide a union catalog with one record per title with all of the libraries holding a title represented. After databases are loaded initially, the software automatically queues transactions that occur to bibliographic, item, order, or summary serial holdings records and sends those transactions up to the central catalog. Staff in the local library has no extra work or steps to take to send transactions to the union catalog.

The union catalog uses a "master" record to maintain only one bibliographic record per title. The "owner" of the master record is determined by several factors. A bibliographic record with only one holding library automatically has that library as the owner of the master record. If more than one library holds a title, the system uses an algorithm to determine which record coming into the system has the highest encoding level. The library that has the record with the highest encoding level becomes the owner of the record, and its version of the record is displayed and indexed in the catalog. In addition, a table is created which has a list of the libraries in priority order for determining the master record if two or more matching records enter the system with the same encoding level. For the Prospector catalog, a survey was conducted of the participating institutions to determine which libraries might have the best or fullest records. Questions in the survey included size of database, source of bibliographic records, participation in national projects (e.g., Program for Cooperative Cataloging, OCLC Enhance), amount of authority work done and level of authority control in the local database, level of cataloging given to records, and type of institution. The task force charged with designing the catalog examined these surveys and determined a priority order of the participating institutions for selecting bibliographic records.

The system also uses a set of match points each time a bibliographic record is added to the union catalog. Whenever a match occurs, the system examines the encoding level of the incoming record and the library from which the record is coming to determine if a change in the master record is required. The existing record is overlaid by the incoming record if the master record holder is changed. The first check is done on the OCLC record number. If there is a match on that, the system adds the holdings to the existing record. If there is no match on the OCLC number, the system attempts to match on the ISBN or ISSN in combination with the title in the 245 field. Again, if a match occurs, the system adds the holdings to the existing record. If no match occurs, a new bibliographic record is added to the catalog.

In addition, each library that has a local Innovative Interfaces system has the ability to exclude bibliographic, item, order, or check-in records from being sent to the union catalog. Suppression may occur in each of these record types. The library may also choose to send a record to the union catalog but exclude it from public display in the union catalog or to suppress a record from displaying in the public catalog both locally and centrally.

The INN-Reach system has no central database maintenance module, though it does provide a staff mode in which to view records, to create lists, and to monitor transaction queues. The staff module that is available via a telnet connection allows authorized users to view those records that have been contributed to the union catalog but are not displayed to the public in the union catalog. For example, a library may contribute its order records to the union catalog but choose to suppress those records from public display; however, authorized staff may view these records in the INN-Reach staff mode or create lists for collection development purposes that include those order records.

Circulation status of individual items and volumes also appears to the user. The Prospector member libraries with local Innovative Interfaces systems also maintain a set of circulation or item status codes that display various messages to users of their individual public catalogs. The INN-Reach system also has a set of circulation or item status codes. Agreement was reached on what the status codes were to be in the central catalog, and each member library then had to map its local codes to the codes used in the central catalog to ensure proper message display in the union catalog. In some cases, the member libraries had to adjust local status codes.

Indexes for the Prospector catalog were determined during the profiling process. In general, there are more indexes in the union catalog than are available in the member libraries' local catalogs. Indexes in Prospector include author, author/title, Library of Congress Subject Headings, Medical Subject Headings, Library of Congress Children's Subject Headings, journal title, keyword, Library of Congress classification numbers, National Library of Medicine classification numbers, Dewey Decimal classification numbers, government documents numbers, OCLC numbers, and special numbers (e.g., ISBN, ISSN, music publisher numbers, etc.). The classification number indexes are derived using the classification numbers that appear in the defined MARC tags for the various classification schemes in the bibliographic record and do not represent local call numbers. Local call numbers are always stored at the item record level in the union catalog. It was decided that many local MARC fields that are defined for local notes or local access would not transfer from the local catalog to the union catalog (e.g., 59x, 69x, 79x, 9xx) to avoid ambiguities and excessive heading conflicts. Therefore, there may be access points or index entries in the local catalog that may not be available in the union catalog; the local

catalog may still contain "richer" or "fuller" searching than the union catalog. The local catalog may have materials accessible in it as well that do not appear in the union catalog.

Patrons using a local catalog may transfer their searches up to Prospector simply by clicking on a button in their local public catalogs and have the search automatically occur in the union catalog. Patrons may access Prospector directly either via the World Wide Web or via telnet. Navigation between local catalogs and Prospector as well as navigation within Prospector has been designed to be clear and simple. Patrons may also go from Prospector either back to their local catalog or to the local catalogs of other member libraries. When a patron locates an item that he or she wishes to borrow from Prospector, he or she may initiate the request for the item online. The borrowing and lending process is described below.

Prospector member libraries have been asked to be as inclusive as possible in contributing bibliographic records to the union catalog. Member libraries have been asked to contribute the following:

- items that users may borrow, including all monographic materials that circulate, and other material types as specified by individual institutions that are listed as available for circulation.
- items that users may not borrow but may use onsite, including reference materials, archival materials, rare books, and others as determined by individual institutions. Virtual items, such as electronic journals, which have IP limiting and authentication are included in this category.
- Items that are owned virtually which have URLs or IP addresses that are open and unrestricted include government publications and selected home pages as determined by the local institution.

Bibliographic records that are contributed should have as full cataloging as possible for identification and retrieval. Materials that are on reserve and other locally defined special materials (e.g., materials that have use restrictions placed upon them) may be excluded from Prospector.

The Prospector union catalog will also include bibliographic and circulation information from libraries that do not use Innovative Interfaces as their local system vendor.

The Integration of Non-Innovative Libraries into INN-Reach

One of the major efforts in the Prospector project was to be able to incorporate bibliographic, item, summary serial holdings, and acquisitions records from other vendors with the INN-Reach union catalog software. In 1997, when the grant was written, it was envisioned that the system would incorporate libraries using two ILS vendors—Innovative Interfaces, Inc. and CARL Corporation—two of the major vendors in Colorado at the time. Twelve libraries used Innovative Interfaces and four used the CARL system (Denver Public Library, Regis University, Colorado School of Mines, and the University of Wyoming). However, in late 1999, the Colorado School of Mines and the University of Wyoming decided to migrate to the Voyager system by Endeavor Information Systems (this is occurring in 2000). Both of these institutions have still expressed an interest in being part of Prospector, so they will need to be integrated in 2001 after they are stable on their new system. The remaining CARL sites will be fully integrated in 2000.

The integration of records that allows document requests from different vendors is being accomplished as follows:

- Innovative Interfaces, Inc. has published a set of specifications for how bibliographic, item, summary serial holdings, and acquisitions order records should be formatted to be loaded into the union catalog.
- Published specifications were also created for patron verification and for how document requests are to be transferred.
- The Alliance office is developing the software to package USMARC bibliographic records, item records, summary serial holding records, and order records to transfer to Prospector. Work is also being done so that document requests may be relayed between the different systems using an intermediate Unix server running an SQL database with a Web interface for circulation to ILL staff.

Because the CARL and Endeavor systems are built differently, the record updating may be done on a "batch" basis several times a day. Patron verification, to determine if a CARL or Endeavor patron is in good standing before allowing a document request, will be done in real-time.

Administrative and Committee Structures

Under provisions of the grant, the Dean of Libraries at the University of Northern Colorado provides administrative management for the project while the Colorado Alliance of Research Libraries houses the server, maintains the union catalog software, provides network connectivity,

develops the software to integrate the non-Innovative sites into the union catalog, and provides ongoing system administration support for the project. A Prospector Steering Committee comprised of deans and directors of three participating libraries provided general overview for the project during the initial stages. To carry out the initial work of the project, two task forces were appointed with responsibility for detailed design and implementation of the system: the Catalog/Reference Task Force and the Circulation/Document Delivery Task Force.

The Catalog/Reference Task Force was charged with making all bibliographic and display decisions relating to the catalog. This included establishing the criteria for determining which institution's bibliographic record displays in the catalog, developing display and overlay hierarchies for bibliographic records coming into the system, and identifying MARC fields that would be indexed and displayed in the catalog. Membership on this task force included both public services and technical services personnel, but did not include representation from every participating library.[9]

The Circulation/Document Delivery Task Force was charged with developing common circulation policies to be applied in the union catalog including loan periods, fines, renewals, holds, recalls, checkout limits, and patron blocks. The task force was also responsible for developing the precedence table for routing patron requests. The members of this task force represented each participating library, and several libraries had representation from both their circulation and interlibrary loan department.[10]

These two task forces conducted meetings from July 1997 through December of 1999. The stage was set for the task forces' work at a training session held by Innovative Interfaces, Inc. on system operation and functionality. Each group received direction on what policy issues needed to be determined to lay the groundwork for establishing the codes that drive system functionality. After the initial training, each task force met several times a month, often consulting with Innovative Interfaces, Inc. and/or their local libraries as their planning and deliberations continued.

Communication was an important component during the development of the system. Soon after the grant was awarded, staff from the Alliance office visited each participating library and met with library personnel to explain the overall goals of the project and how work would be conducted. As detailed development progressed, open forums were held in central locations to keep representatives of all libraries apprised of progress and to get feedback regarding specific policy issues. Completed work from the task forces was mounted on the Prospector Web site. In addition, regular articles appeared in *Datalink*, the Alliance monthly newsletter. Specific training sessions were conducted both by the Task Forces and by Innovative Interfaces.

As the actual database loading process began, the Catalog/Reference Task Force conducted sessions at each Prospector library. These sessions were twofold in purpose: to provide an opportunity for a general overview of how the database structure and indexing worked for all library personnel, and to train technical services personnel in how local coding of records impacted the display of their local records in the global catalog. In preparation for going live with patron requesting, Innovative Interfaces, Inc. conducted PAC searching and circulation training sessions at several central locations for frontline staff from all institutions. In addition, the Circulation/Document Delivery Task Force held a central session for representatives from all libraries to discuss issues relating to the flow of materials among libraries.

During system implementation, it became apparent that some ongoing structure would be required for ongoing maintenance and development of the global catalog. In completion of their charges, each task force prepared a final report, which was submitted to the Steering Committee and to the Prospector Directors Group. Each task force recommended its own termination but outlined a structure to address ongoing issues.

As approved by the Prospector Directors Group, the ongoing governance structure is multilayered with frontline operations groups, broader planning and policy-setting committees, an Advisory Committee, a Directors Group, and electronic discussion lists for communication. Monitoring of the day-to-day work of the cataloging and circulation/document delivery operations is handled by frontline staff via e-mail, electronic discussion lists, and/or telephone. Broader planning and policy issues are addressed through smaller, representative standing committees. The Advisory Committee and Directors Group operate at a policy level.

The new structure includes:

- a Catalog Site Liaison group comprised of one representative from each participating library and charged with serving as the point of contact for inquiries regarding catalog maintenance, access and record merging;
- a Catalog/Reference Committee comprised of members selected from the participating libraries and charged with responsibility for all bibliographic and display issues relating to Prospector. This includes monitoring details of the current implementation as well as addressing ongoing policy issues, recommending system enhancements, testing new system functionality, and training staff at new sites coming into the system;
- a Document Delivery Site Liaison group comprised of one or more representatives from each participating institution with responsibility to

serve as a point of contact for other Prospector libraries that have inquiries concerning issues, lost books, courier delivery, or related topics;
- a Circulation/Document Delivery Committee comprised of representatives selected from the participating libraries and responsible for issues relating to the courier delivery service, circulation load-balancing, monitoring member compliance with circulation policies, recommending system enhancements, testing new system functionality, and the year-end reconciliation of lost book charges; and
- a Prospector Advisory Committee comprised of tewnty-four deans and directors from participating libraries to address issues requiring quick response relating to project specifications and operating rules.

The Prospector Directors Group is comprised of the deans/directors of all participating libraries and is charged with making recommendations on high-level policy and admission of new participants. Since Prospector is a project of the nonprofit Colorado Alliance of Research Libraries consortium, all final high-level decisions and financial commitments are subject to the approval of the Board of Directors of the consortium. At the present, five of the sixteen Prospector libraries are not part of the formal consortium but participate in this one project.

The newly formed committees will continue to address broad policy and operational issues such as the load-balancing tables for routing patron requests to owning libraries, will document best practices for local libraries to follow in implementing certain functionality within their local system to achieve maximal results in the central catalog, will identify enhancements to the system, and will test new release functionality.

Borrowing and Lending

Policies and Specifications

As a prelude to its work, the Circulation/Document Delivery Task Force examined borrowing and lending practices from other Innovative Interfaces. INN-Reach sites and reviewed the borrowing policies for consortial borrowers that were developed and agreed to by a subset of Alliance libraries (University of Northern Colorado, Auraria Library, and Denver Public Library) several years ago.

The first major duty of the task force was to establish circulation and document delivery policies that would govern those functions within the Prospector system. These common circulation and document delivery policies were based on a series of assumptions:

- the task force policies apply to the unified catalog only; local sites define local policies;
- local workflow remains local purview;
- policies should be kept simple;
- circulating materials are commonly circulated materials, primarily books, at each site;
- the task force will work within the confines of the INN-Reach system;
- if a patron is blocked locally, he or she will be blocked at the global level;
- for routing purposes, each institution (rather than branch) is the routing site; and
- local sites will determine when their items are declared lost.

The task force established a series of recommendations for policies that applied to the Prospector system. The proposed policies were discussed within the local institutions as well as with various administrative groups. The final policies for Prospector lending as adopted and implemented in the system are:

- loan period: twenty-one days
- renewals: one
- number of holds allowed: forty
- checkout limit: forty items
- recalls: none, except for academic library reserve collections
- lost book charge: $100, which is comprised of a $75 refundable lost book charge and a $25 nonrefundable processing fee
- libraries establish their own local rules for overdue fines on Prospector materials.

Key features of the INN-Reach software that were emphasized with each local library during training sessions are:

- Libraries have local control over what is loaned through the global catalog.
- Libraries have local control over which of their patrons can borrow materials through the global catalog.
- If the local copy is checked out or missing, a copy may be requested through Prospector.
- The system is sensitive to multivolume works and allows particular volumes to be selected.

The ongoing Document Delivery Committee has developed a series of "best practices" that establish benchmark policies that each library is urged to adopt in the spirit of uniform cooperation among participating libraries. Individual libraries, however, may choose not to adopt these practices.

System Functionality

The actual steps for a patron to request an item within the Prospector system are simple and self-explanatory. Once a patron has identified an item they wish to order, the following steps take place:

- The user is prompted for institutional affiliation, name, and library card number.
- The system checks local system to ensure that the patron is in good standing.
- The user selects a pick-up location from those offered by their home institution.
- The system forwards the patron request to an owning library with an available circulation status doing load balancing among the libraries with available copies.

Once the patron request is forwarded to a lending library, the request goes into the queue of requested items from that library. Each library has established its own workflow for handling requests; however, that workflow must include interaction with the system to record the status of the request. Once the item is located by the lending library, it is checked out to the requesting patron's "home" library and is sent, via courier, to that library. The "home" library then receives the item in the system and holds it pending pick-up by the patron. When the patron arrives to borrow that item, it is checked out to that patron's record according to the Prospector loan rules. Having a common set of loan rules for all Prospector loans provides consistency for the patron. The patron may still have multiple due dates on items checked out at the same time depending on the loan rules for local checkouts.

The system maintains statistics on several elements of the borrowing and lending processes. It tracks the total number of items borrowed and loaned and calculates the ratio of borrowing to lending per institution. In addition, it tracks the number of items cancelled and the reason why, the number of holds filled and cancelled, and several other groupings.

Challenges and Issues

With the building of Prospector still underway and public access available only since late July 1999, Prospector is doing a respectable volume of loans in its infancy. Over ten thousand items were delivered during the first six months of operation. This number is expected to dramatically rise as the system grows and as local libraries promote the service. This auspicious start provides a sense of accomplishment tempered by recognition that there is more to do. Some of the major challenges facing the project include:

- Development is underway to integrate records for the CARL system libraries into the central catalog and provide borrowing capabilities for their patrons. As member libraries choose other online system providers, ideally, these systems likewise need to be interfaced with the Prospector system. Coming to agreements with all vendors involved will require careful negotiation and wording of contracts.
- Discussions are underway with Innovative Interfaces and Endeavor Information Systems for merging Endeavor libraries into INN-Reach.
- Monitoring how the fiscal accounting for first end-of-year reconciliation will work for lost books is planned.
- Developing best practices and evaluating software enhancements for INN-Reach are necessary.
- We need to determine how to handle electronic resources and multiple formats, and load records from commercial electronic resources, for example, netLibrary.
- We must improve matching within the system and additional enhancements to the Prospector Web site.
- With growth of the system, full-time operations and management staff may be required.
- Securing funding for the new ventures and new staffing will require development efforts or a sharing of costs by members. There is no state-based funding for ongoing maintenance and new product acquisition.

With the increasing flow of materials between libraries, the courier delivery service must be monitored on an ongoing basis. The statewide courier service has been recently restructured and was contracted based on pre-Prospector activity levels for interlibrary loan materials. With the ever-growing popularity of Prospector, there will be a corresponding increase in volume for the courier. Service levels need to be monitored closely to ensure that the speed of delivery is maintained and that the loss and incorrect routing rate is within acceptable limits.

The balance of borrowing and lending will have financial impacts on some of the participating libraries. Through a legislative allocation, the State Library of Colorado provides funding on a per transaction basis to libraries that are net lenders, or that loan more materials than they borrow. Most libraries are considering the Prospector transactions as equivalent to interlibrary loan transactions and counting them toward the payment for lending program. It is anticipated that the inclusion of Prospector activity in the interlibrary loan borrowing and

lending statistics will significantly alter the balance of payment for lending among the Prospector libraries.

Already Prospector has shown that it is changing behaviors. The cooperation between libraries has been impressive. In member libraries, staff are factoring Prospector into their plans and realizing that keeping Prospector operations staff informed of problems is a good habit. User searching and document delivery patterns are changing. Margaret Landrum, Director at the Fort Lewis College Library, predicts that Prospector will have a dramatic effect on researchers in the geographic area. Its start has given all members a share in that expectation.

The Future and Interesting Spin-Offs

Union catalog projects often take on a "life of their own" far beyond what was originally envisioned. Some of the future spin-offs may include:

- The addition of other research libraries in nearby states.
- Collection overlap studies and improved coordination on acquisition and weeding projects between libraries.
- With the full implementation of the union catalog, there are opportunities for resource sharing at a broader level. The central catalog has the functionality to support bibliographic records for and access to "consortial" resources, thus enabling libraries to jointly purchase resources and provide centralized access to them.
- As database and online information providers develop new methodologies for access to their resources, there will be opportunities to easily link from either the local or central catalog to these online resources, a process which is cumbersome and/or impossible in the nonglobal environment. For instance, where databases are centrally mounted at the Alliance office with shared ownership, the link to serial holdings feature is pointed to Prospector, thus providing patron access to consortiawide holdings.
- Use of the system as a central repository for cataloged metadata for electronic resources on the Web.
- Encouraging Innovative Interfaces, Inc. to allow document requests that "fail" in the system to be forwarded to national ILL subsystems or commercial document suppliers using national standards.

Conclusion

Prospector dramatically alters the bibliographic landscape in Colorado, offering patrons easy access to the bibliographic wealth of the state. Patrons will be easily able to move from a local catalog to this regional system and request materials. Librarians will find the system useful for collection overlap studies, improved coordination on acquisitions and weeding projects, Z39.50 links with other indexing/abstracting services for serials holdings information (e.g., Ovid or SilverPlatter), and expedited book delivery.

The high level of cooperation among the diverse nature of the participating libraries is exemplary. The incorporation of public and private universities, public libraries, and special libraries offers a model for cooperation.

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5. Gary Pitkin, *Colorado Union Catalog—Prospector. Final Report.* July 27, 1999.
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7. Ibid.
8. Ibid.
9. Prospector Staff Web site, www.coalliance.org/prospector.
10. Ibid.

APPENDIX A

General Statistics about Prospector:

- sixteen libraries (see below)
- twelve Innovative Interfaces sites (went live in fall 1999)
- two CARL sites (to go live in 2000)
- two Voyager Endeavor sites (to be incorporated in 2001 pending final negotiations with both vendors)
- 3.6 million unique MARC records as of January 2000, which are expected to grow to more than 5 million after the incorporation of the CARL and Endeavor sites.
- 9 million item records, which are expected to grow to more than 12 million after the incorporation of the CARL and Endeavor sites.
- Currently 61 percent of the records in the system are held by only one library.
- Greater than 1 million registered patrons are possible users. Denver Public Library has over 500,000 patrons and Jefferson County Public Library has over 300,000 patrons.
- Prospector URL for public use: http://prospector.coalliance.org
- Prospector staff URL, which includes policies, committee minutes, and profiling tables: www.coalliance.org/prospector

Prospector Libraries	Web site
Auraria Library	http://carbon.cudenver.edu/public/library
Colorado College	http://www.coloradocollege.edu/library
Colorado School of Mines	http://www.mines.edu/academic/library
Colorado State University	http://manta.library.colostate.edu
Denver Public Library	http://www.denver.lib.co.us
Fort Lewis College	http://library.fortlewis.edu
Jefferson County Public Library	http://www.jefferson.lib.co.us
Regis University	http://www.regis.edu/lib/wlibhome.htm
University of Colorado at Boulder	http://www.libraries.colorado.edu
University of Colorado/Colorado Springs	http://web.uccs.edu/library
University of Colorado/Health Sciences	http://www.uchsc.edu/library/index.html
University of Colorado/Law Library	http://www.colorado.edu/law/lawlib
University of Denver	http://www.penlib.du.edu
University of Denver/Law Library	http://www.law.du.edu/library
University of Northern Colorado	http://www.unco.edu/library
University of Wyoming	http://www-lib.uwyo.edu

APPENDIX B

Early Borrowing/Lending Data

The borrowing and lending patterns in Prospector will be of interest to monitor because of the wide variety of participating libraries in the system. The incorporation of both academic and public libraries has the potential for different use patterns as seen in more homogeneous academic union catalogs. The following data represents some of the very early borrowing and lending patterns in Prospector. All of the libraries in the table went "live" in terms of borrowing and lending in late July or August 1999, with the exception of Jefferson County Public Library, which went live in November 1999. History with other similar projects has shown that use will dramatically grow as libraries and users gain familiarity with the service. The incorporation of Denver Public Library in 2000 should provide significant impact on the service. At the present (and in the accompanying table), Prospector has been configured to do random load balancing without the use of any precedence tables to force document requests to one site or another.

			Borrowing Site											
			Aur	CCC	SU	CUL	CUB	DU	DUL	FTL	JCPL	UCCS	UCHSC	UNC
Lending (Owning) Site	Ratio L/B	TOTALS	1879	930	2301	225	1520	1132	129	946	1775	882	364	2063
AUR	0.89	1667	--	108	282	33	232	187	17	113	234	128	70	263
CCC	0.72	673	114	--	109	11	96	57	--	66	89	53	10	68
CSU	0.86	1985	267	156	--	29	272	221	18	130	288	134	55	415
CUL	0.55	123	24	9	20	--	5	11	12	3	10	7	3	19
CUB	2.05	3120	396	231	590	26	--	260	21	246	420	233	56	641
DU	2.07	2341	361	153	464	42	315	--	20	163	279	131	69	344
DUL	1.12	145	27	7	14	27	15	25	--	3	11	6	4	6
FTL	0.54	511	66	36	130	3	66	36	7	--	72	31	11	53
JCPL	0.54	962	187	81	201	11	154	65	11	64	--	33	38	117
UCCS	1.02	900	170	65	148	12	130	65	5	3	137	--	15	90
UCHSC	0.83	301	63	5	49	5	26	31	3	5	32	36	--	46
UNC	0.69	1422	219	81	291	27	207	153	13	89	222	90	30	--

Prospector Fulfillments Report, August 1999 through February 14, 2000