Resource Sharing

&

Library Delivery Services

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Resource Sharing and Library Delivery Services

Executive Summary

There are six trends that could affect library delivery services in the short term and especially in the long term. They are: increasing availability of library holdings in shared catalogs, growth of patron-initiated borrowing, development of tools to display library holdings in non-library applications, increased availability of electronic material, increased service level demands caused by competing information providers, and aggregation of supply and demand.

Increasingly, library users expect an easy-to-use, transparent system for locating and requesting library material for delivery anywhere. They expect service comparable to Amazon and NetFlix. What users would *like* is to select items for themselves, specify where and when they need it and to be kept informed of the status of the requested item.

Current delivery programs suffer from their lack of integration with the circulation function. Over time, this is likely to change and circulation will include delivery into the hands of the user. Delivery will continue to be a critical service requirement of libraries and agencies providing delivery services must actively monitor the changing needs of libraries and ensure that they can be responsive to the demands for higher levels of service.

Introduction

In November, 2005, a group convened at ALA to discuss resource sharing. The group was composed of members of the ISO 10160 (ISO ILL) Advisory Committee, the Interlibrary Loan Protocol Implementors Group (IPIG), and the NCIP Implementor's Group as well as leaders and policy makers from library agencies and membership organizations. The session was held because there was growing concern about the direction ISO 10160-Version 3 was taking (Bailey-Hainer, Needleman, Wanner, Zemon, Jung, & Iddings, 2005). The group released a document entitled "Its Time to Think Again about Resource Sharing: Discussion Paper"[1] which they hoped would spark innovative thinking. They stated:

> We observe that the library world is nearing the end of an era in mediated resource sharing – the era of traditional, mediated interlibrary loan – and is beginning to embark on a new set of resource sharing capabilities, with greater discovery options such as Google, Google Scholar, and linking to open access journals; the increased adoption of web services; widespread adoption of 'best practices'; improved requesting mechanisms such as user-initiated ILL, circulation-based sharing and consortial delivery services, and improvements in electronic document delivery. These technical capabilities, combined with reconsideration by many libraries of their policies regarding the sharing of materials, combine to provide a unique opportunity to examine resource sharing with a clean slate – a time to reconsider existing paper-originated models of the last 30 years and identify actual, need-based sharing functions appropriate for the future. (Bailey-Hainer, et al, 2005)

[1] For a summary of delivery-related highlights from the November 14 and 15, 2005 "Rethinking Resource Sharing" sessions held at the ALA Conference that year, see Appendix.

Resource sharing is changing. Formalized resource sharing arrangements are growing.[2] Library catalogs are being unionized making unmediated borrowing between libraries possible. Users are responding positively to the improved interfaces of catalogs that allow them to easily search, locate and request items, from almost anywhere, for themselves (Huwe, 2004). Resource sharing and interlending is increasing dramatically.[3] As a result, demands on delivery services are high and likely to grow.

Materials delivery is an important yet neglected part of the process of getting useful information into the hands of users. Library delivery is usually associated with moving materials from library to library, but in the very near future it will be more important for libraries to deliver material directly to their users. Users choose convenience over quality. They don't care about the *best* source of information, the want a *satisfactory* source. An information source that is satisfactory and convenient will always be chosen over a source that is inconvenient.

Library delivery is sometimes outsourced, sometimes managed by consortia or regional groups, and sometimes provided by commercial providers such as UPS and Federal Express. Many libraries use a combination of these delivery services. However libraries move materials, it is important to recognize that the process should be transparent to users. Only the outcome is important. The process of delivering a selected item to the user must be seamless, convenient and fast. Users don't need to know (and don't want to

[2] For a more thorough discussion of the nature of these formalized relationships. See the 2003 *OCLC Report to Membership: Environmental Scan: Pattern Recognition.*

[3] American Libraries (January 2005) reported that the ALA Office for Research and Statistics found that 50% of respondents had reciprocal borrowing (defined as an arrangement between libraries allow registered library patrons to borrow materials from libraries other than their home libraries) between all library types, 27% between public libraries only, 33% had multistate reciprocal borrowing, and 23% had a statewide library card. Also, Rosen (2005) reported a 72% increase in ILL service at Jefferson County Public Library (JCPL) after introducing Prospector (union catalog for several Colorado-based libraries). The JCPL experience is typical of other library findings.

know) whether the item is requested from another branch or from a member library within a consortium or from a library across the world.

Convenient, transparent and fast delivery is not easy for libraries to accomplish because of the lack of connection between circulation systems and delivery systems. Delivery stands apart from all other library systems. However, as libraries expand the reach of their virtual holdings, and as interlending increases, future library systems will be compelled to integrate delivery management into library systems. Until such time as *truly* integrated library systems are available, delivery must operate independent from the other library systems yet provide delivery that is convenient, transparent, and fast.

This report looks at trends in resource sharing in order to explore the possible ramifications to organizations providing delivery service to libraries. The goal is to provide New York Metropolitan Library Council with a foundation from which to launch an initiative exploring all aspects of the delivery service METRO provides to its members.

Trends Affecting Delivery

There are six trends affecting library delivery services. They are:

- increasing availability of library holdings in shared catalogs;
- growth of patron-initiated borrowing;
- development of tools to display library holdings in non-library applications;
- increased availability of electronic material;
- increased service level demands caused by competing information providers; and
- aggregation of supply and demand.

Increasing Availability of Library Holdings in Shared Catalogs

David Kohl, President of University of Cincinnati (UC), states "we are moving away from the traditional concept of the library as basically a stand-alone institution which is only very modestly supplemented by ILL use, to a developing view of the local library as an integral part of a larger entity" (Rieselman, 1999). Kohl reports that University Libraries have been able to "virtually" increase its holdings from 2.3 million to 27 million volumes as a result of OHIOLink (a consortium of academic libraries) and that 15% of UC's circulation is with OhioLINK members.

OhioLINK is one of the first networks created between cooperating libraries that allowed users to see another library's holdings. It is now common practice for consortia members to share catalog information and allow members to borrow from each other. This trend is expanding beyond membership organizations to states and beyond. Most recently, the state of California rolled out their Calcat.org product which allows for searching all California library catalogs through a statewide union catalog. Other states have developed similar products[4] and others are in the works.[5] OCLC's WorldCat product represents holdings from over 9,000 member institutions and this product can be leveraged by member institutions to provide access to other member libraries. Such access is not free, but it is available to member libraries today.[6]

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[4] Examples of state-wide (or approaching state-wide) catalogs are Illinois SILC (http://findit.ilsos.net/OCLC/), Maine's INFOnet (http://infonet.maine.edu/), Access Pennsylvania (http://www.accesspa.state.pa.us/), New Hampshire Union Public Access Catalog (http://www.nhu-pac.library.state.nh.us/), Massachusetts Virtual Catalog (http://www.mlin.lib.ma.us/books/catalogs/vc/index.php), Minnesota's MNLink Gateway (http://www.mnlinkgateway.org/zportal/zengine?VDXaction=ZSearchSimple), Michigan MeLCat (http://elibrary.mel.org/search), Wisconsin's WISCAT (http://www.wiscat.net/agent/login.asp?cid=stwi&lid=06AN&mode=g).

[5] Ohio's MORE (http://winslo.state.oh.us/more/index.html)

[6] A description of the OCLC WorldCat product is available at http://www.oclc.org/worldcat/.

The availability of distant library holdings from one's local catalog creates new opportunities for users to locate and request items. Whether by ILL or an unmediated process, such access is likely to increase the demand on delivery services among cooperating libraries.

Growth of Patron-Initiated Borrowing

Users have made it clear that they prefer to manage information-seeking for themselves. A 2003 OCLC Report found that information consumers prefer self service (OCLC, 2003). Another OCLC Report done two years later confirmed these findings:

> The survey highlighted that not only are information consumers happy to self-serve, they are confident that they can serve themselves well. [..]This self-reliance was also reflected in respondents' use of the library. Most library users say they have not asked for help using any library resources, either at the physical or the virtual library. (De Rosa, Cantrell, Hawk, Jenkins, & Wilson, 2005)

Just as self-check machines find immediate acceptance by library users,[7] requests for material from outside of the local library (interlending) rises dramatically when users can do it themselves. When the University of Washington introduced patron initiated borrowing through their six-library Cascade union catalog, total transactions for returnables increased by 272% within three years (Chmelir, 2005).

The unmediated process of *patron-initiated borrowing* or *remote circulation* relies upon standards such as Z39.50[8], ISO ILL (ISO 106011)[9], and NCIP (NISO Circulation

[7] Kenny (2005) reports that two thirds of Seattle Public Library transactions are via self-check and many libraries have had to increase the number of self-check machines available to users to keep up with demand.
[8] See http://www.niso.org/standards/resources/Z3950_Resources.html for more on the Z39.50 standard.
[9] See http://www.collectionscanada.ca/iso/ill/standard.htm for more information on this standard.

Interchange Protocol).[10] Not all union catalogs allow the user to make a request for an item. However, now that the technology is here and users have made it clear that they prefer to do it themselves, it is likely to become a standard feature of all union catalogs.

Studies have shown that patron-initiated borrowing is significantly cheaper for libraries than mediated ILL. A 2004 study done by the Association of Research Libraries (ARL) reported that the unit cost for borrowing an item ranged from $2.39 to $14.40 for unmediated requests. Mediated borrowing requests cost $17.50. Unmediated lending costs ranged between $3.27 and $12.06, while mediated lending requests averaged $9.27 (ARL, 2004). This means that not only do users prefer patron-initiated borrowing, but it is more cost-effective as well.

The confluence of trends toward shared resources, larger union catalogs, and the increase in remote requests resulting from patron-initiated borrowing will create an upsurge in demand for delivery services. In fact, each time a library makes holdings from another library available through their catalog or enables patron-initiated borrowing, an upturn in delivery demand should be anticipated and planned for.

Development of Tools for Displaying Library Holdings in Non-Library Applications

Google was one of the first to act on the recognition that users want information brought to them. Google Scholar makes it possible for libraries and publishers to make their content discoverable through Google.[11] Library holdings can be discovered via OCLC

[10] NCIP governs communications between two circulation applications or between a library's circulation and ILL application. It has the ability to turn a mediated ILL transaction into a [cheaper] circulation transaction. See http://www.cde.state.co.us/ncip/ for more on this standard.

[11] See http://scholar.google.com/scholar/libraries.html for more information on how Google Scholar interfaces with library materials.

WorldCat, and online resources can be made accessible via a link resolver.[12] Following on the heels of Google Scholar is Microsoft Live Academic Search performs much like Google Scholar but also supports the Open Archives Initiatives Metadata Harvesting Protocol (Quint, 2006). Google and Microsoft are modifying the tools users already use and making it much more likely that users will encounter content from the library.

The Open Archives Initiatives (OAI) Metadata Harvesting Protocol[13] is a mechanism for data providers to expose metadata from their repositories or archives so the data can be discovered in new ways (rather than just through the union catalog). As mentioned above, Microsoft Live Academic Search takes advantage of this protocol. Originally, the focus of OAI efforts was digital libraries, but a wide variety of digital resources are currently discoverable using this protocol including e-books; online journals; reference material; and multimedia such as audio, image, and movie files. OAIster, a project of the University of Michigan, provides a search interface for finding digital resources from 620 institutions internationally.[14]

OCLC's Open WorldCat[15] program is opening up opportunities for making library holdings discoverable on the Web. As mentioned above, OCLC member libraries can make their holdings findable using Google Scholar and Microsoft Academic Search. In addition, holdings from member libraries can be found using the "Find in a Library" Web service offered by OCLC. Yahoo and Google toolbars can be easily configured with the "Find in a Library" feature making discovery of library material very convenient for

[12] Link resolvers help users locate the full-text copy of an article, or set up an ILL or document delivery request if that's the best option for accessing an item For a good explanation of how link resolvers work and why they are important to libraries, see McDonald & Van de Velde (2004) available from http://www.libraryjournal.com/article/CA405398.html. OpenURL is a link resolver protocol commonly used in libraries.
[13] See http://www.openarchives.org/ for more about the work of the Open Archives Initiative.
[14] See http://oaister.umdl.umich.edu/o/oaister/.
[15] See http://www.oclc.org/worldcat/open/default.htm for more information on Open WorldCat.

users. The feature can be configured to prioritize library listings so items found in a user's local library appear at the top. Library holdings are brought to the user. The user need not go to the library.

Web feeds are another way to get personalized information about library materials out to users. Using an RSS reader, users can select categories of library material they wish to be notified about. For example, users can sign up to be notified about all new acquisitions or just acquisitions in a specific genre or subject area. When the user opens their RSS reader, a personalized list of library items is available for viewing. This kind of personalized notification service increases the likelihood that the user will choose to place holds or request items from their library. It puts more control in the users hands, and is very convenient.

Redlightgreen.com is another innovative way of bringing library information to the user. It functions very much like any other search engine but is focused on research materials and has features that are particularly useful for students.[16] Discovered items can be looked up at the user's local library or searched for in an online bookstore. It's a one stop shopping opportunity for researchers and scholars. It is seamless and convenient.

Aggregation of Supply and Demand

Lorcan Dempsey, Vice President and Chief Strategist at OCLC recently took up the issue of the Long Tail (referring to the long tail that follows the standard bell-shaped curve). This topic initially caught the attention of library workers when Chris Anderson wrote about it in *Wired Magazine* (Anderson, 2004). The premise of the *Wired* article is that the Internet changes markets. Specifically, the Internet changes patterns of consumption

[16] Users can generate bibliographic citations using APA, Chicago, Harvard, MLS or Turabian styles; display book reviews or MARC data; limit the search by subject headings or author.

because it is not limited by physical outlets or by the size of the population to which the physical item is accessible. In the pre-Internet days of commerce, one purchased what was readily available. Today, users can dig deep into listings to find items that better suit them. NetFlix and iTunes Music Store are examples of Internet-based companies who give access to the blockbusters and number one hits as well as the many, less known items that appeal to smaller sets of users – the long tail.

Dempsey explains that Netflix aggregates supply by making the long tail available for inspection. This also aggregates demand by creating a larger pool of potential users who may inspect an item thereby increasing the chances that it will be borrowed (Dempsey, 2005). Similarly, libraries aggregate supply and demand in their resource sharing activities when they make unique local materials or special collections available to a larger pool of potential borrowers.

Initiatives like Google Scholar and Google Book Search are aggregating demands for books and journals with their discovery tools. They are also aggregating demand by making links to books suppliers and libraries that can satisfy the demand. According to Dempsey, OCLC is "making metadata about those books [in WorldCat] available to the major search engines and routing users back to library services, to complete the D2D [discover, locate, request and deliver] chain for books. To the extent that a large amount of materials are made available through these services, Google is aggregating demand, aggregating supply, and reducing transaction costs" (Dempsey, 2006).

The effects of aggregating supply and demand and increasing user access to the "long bibliographic tail" of library collections is likely to increase resource sharing and delivery demands on libraries.

Increased Availability of Electronic Material

Database providers such as Elsevier, EBSCOHost, JSTOR and WilsonWeb provide access to digitized copies of journals, newspapers and magazine through aggregated databases. The databases are purchased by libraries alleviating them of the need to keep paper copies on hand. Most library websites provide a link to "electronic databases" where users are expected to search for items contained in these databases. Link resolvers (e.g. OpenURL) are used to select the best available copy of an article for users (e.g. they find the database that contains a full-text version of the article whenever possible).

The problem is that most information consumers are not aware of, nor do they use, most libraries' electronic resources (De Rosa, et al., 2005). The segregation of articles and newspapers beneath the counter-intuitive heading of "electronic resources" (or worse, "databases") does not facilitate discovery. Today's users are format-agnostic. They do not think about content in terms of its delivery format because technology and content are inseparable. "NexGens see little value in choosing to limit formats at the outset of an exploration or navigation when Google results include encyclopedia entries, articles, Web sites, blogs, discussion threads, and PDF documents" (Abram & Luther, 2004).

Not only are the database subscriptions underutilized, they are extremely expensive. Because of the way vendors have packaged the subscriptions, libraries are required to buy more titles than they really need for their local collection. As a result, some libraries are discontinuing subscriptions and starting to rely on other libraries to provide copies for them, or they are purchasing individual articles from document delivery services such as InfoTrieve (Jackson, 2004).

However, the world of subscription databases is changing. Joan Frye Williams, a nationally-recognized library consultant, believes that the long term cost model for database vendors is changing. Williams believes that vendors will soon take advantage of the aggregation and of supply and demand offered by search engines and will make individual articles discoverable via these tools: instead of charging for content, as they do now, vendors will begin charging for *delivery* of their content. The key, says Williams, is the alignment of discovery and delivery. The vendors can rely on Google to help more users find their content (aggregation of demand). It will be up to the vendors to provide quick, convenient and affordable delivery available (aggregation of supply) so that users are willing to pay for it.

E-books and Books on Demand are other ways material is provided electronically. It is too early to tell how the availability of e-books or services that digitize books on demand will affect delivery but some libraries have found this to be a viable way of delivering material.[17] E-books continue to face problems with licensing and access; however students have expressed interest in the idea so it could catch on as the user population ages (Abbott & Kelly, 2004).

Increased Service Level Demands Caused by Competing Information Providers

Most trends point to increases in interlending and higher demands of library delivery services. Whether users will select the library over Amazon, Google and elsewhere will still depend on how convenient, fast, personalized, and inexpensive it is for them. To

[17] See University Innsbruck's program, Digitsation-on-Demand (http://www.uibk.ac.at/ub/dea/eten/index.html) for an example of one such program that appears to be meeting with much success. In an email communication with Guenter Muehlberger, he stated that the program is especially useful for old books (1500 to 1930) and that people from all around the world are using it.

many of us, time is more valuable than money. Therefore, the time it takes to travel to the library has a cost. For example, a person earning $50,000 spends the equivalent of $20 to pick up a library item (assuming a round trip of 50 minutes). Many users would rather keep the 50 minutes and spend the $20 to have the item delivered.

Many libraries place items on the Holds shelf once they've been received from the lending library, notify the user that its there and then wait for the user to pick up the item. Whatever time an item spends sitting on a hold shelf is a lost opportunity because it is neither in the hands of the user, nor is it available for circulation. Direct delivery to users eliminates potential loss of an item due to the time it sits on hold, and direct delivery is more convenient to users.

Today's users have become accustomed to short turnaround times. Standard UPS ground delivery can cost as little as $4 and often takes only one or two days. Even guaranteed Next Day and 2nd Day services from UPS and FedEx cost less than $20 for a book-sized item. Library delivery needs to begin competing with these services because they are more convenient and flexible and worth a little extra money to many users.

Some library delivery systems use UPS for delivery because of the convenience, flexibility and tracking provided by the commercial providers. Borrow Direct, a service of seven academic libraries including Yale University, contracts with UPS. Their turnaround for a complete transaction (user initiates request to lending library that ships item to borrowing library where user picks up item) is four days and costs under $10. In addition, Borrow Direct integrates with the circulation system generating status updates to the user's record and automatically generates status emails to the user (notifications that the request has been accepted, the lender has shipped the item, and the item has been received and is available for pickup, Nitecki & Jones, 2004).

If users must pick up the item at the local library, versus home delivery, it must be easy to do so without staff assistance (Hilyer, 2006). Users want the option of home or office delivery and are willing to pay extra for expedited service (but the cost cannot be so high that users will choose to buy from Amazon instead). And users don't want unnecessary restrictions placed on the materials (e.g. you may only use this item in the library, Jackson, 2004). The more convenient libraries can make delivery, the more users are likely to use it.

Summary of Trends

As resource sharing changes, delivery services must adapt to the new demands. Most trends point to increasing demands on library delivery services. Users are using library catalogs and other discovery tools to locate and request material held in distant libraries. Remote requests are going up and are likely to continue to increase as the discovery tools improve and libraries avail themselves of opportunities to get their materials and services out to the users. However, today's library systems do not take into account the complete D2D chain: discover, locate, request, and deliver. Delivery stands apart from other library systems causing a break in the chain.

Library delivery is composed of a patchwork of solutions. Some library systems use UPS, some a regional courier, some have their own in-house source. Most libraries utilize more than one service for handling delivery of items to other libraries depending on their various affiliations and resource sharing arrangements. Few libraries offer a home delivery option.

In order to handle the demands that will be made on delivery services over the next several years, these patchwork systems must be replaced by intelligent, efficient, integrated systems. Intelligent delivery systems are able to utilize the appropriate service for the job. For example, when users need an item the next day, the intelligent system will ensure that library personnel deliver via UPS Next Day Air directly to the user's home address. Intelligent delivery systems will be able to report on the status of their items throughout the logistics cycle.

Integration with other library systems will allow for more efficient delivery systems and will reduce the impact on the sending and borrowing library, as well as delivery

personnel. For example, the bar codes (or RFID[18] tags) used in library books should also be used by delivery to track items and send updates to the circulation systems. This isn't yet possible. However, some libraries have devised custom solutions that accomplish this. One hopes that standards bodies and ILS vendors will soon recognize the importance of delivery in the circulation process and create interfaces that draw these functions into the larger library systems.[19]

For now, delivery services must function outside of the larger library system. They cannot benefit from the efficiencies that a truly integrated library system – one that incorporates the logistical demands of moving materials between libraries -- would bring about. Yet, if current trends continue, libraries will nonetheless demand much more from their delivery services, not less.

[18] See Lori Bowen Ayre's RFID Backgrounder for Library Workers for an explanation of how RFID (Radio Frequency Identification) technology is being used in libraries. Available from http://galecia.com/included/docs/rfid_backgrounder.pdf.

[19] Dempsey (2006) suggests focusing on patterns of storage and delivery as a way to improve the D2D cycle. He suggests "arranging a system of repositories so that they are adjacent to good transport links and collectively contracting with a delivery provider" (Dempsey, 2006). Such a solution depends on the availability of data about which items belong in the repositories based on patterns of use and demand.

Conclusion

Six trends have been identified that will affect library delivery services: increasing availability of library holdings in shared catalogs, growth of patron-initiated borrowing, development of tools to display library holdings in non-library applications, increased availability of electronic material, increased service level demands caused by competing information providers, and aggregation of supply and demand.

Libraries are increasingly making it possible for users to discovery and request items for themselves. More materials are likely to move between libraries as discovery of library materials is made more possible by shared catalogs, and initiatives like Google Scholar, and increased use of RSS feeds and metadata harvesting tools because users are more inclined to borrow items from remote libraries when they can do it themselves.

Users expect the convenience of other delivery providers like UPS and FedEx and will increasingly expect libraries to provide materials as conveniently as Amazon. Unless libraries can respond to the need for more flexible, convenient, and transparent delivery, many users will likely choose other information providers over the library.

Demands on organizations that provide delivery to libraries are going to increase due to high user expectations of turnaround times, cost and convenience. Libraries would benefit from integrating materials delivery with other library systems including circulation, and interlibrary loan. Such integration would increase the efficiency of the system for library staff and the transparency of the system for users.

Better discovery tools, resource-sharing opportunities and high user expectations are changing the needs of library delivery services. Organizations providing these services

must remain agile and ready to adapt to the increased and changing demands of library users for fast, convenient, and flexible delivery.

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Appendix

The 2005 November meeting at ALA provides useful information for improving library delivery systems. Two brainstorming sessions where held in which one group identified resource sharing problems and solutions, and the other identified user expectations. [20] Focusing on delivery, here are the results from each group.

Delivery related problems are:

- users can discover but delivery is chaotic
- fulfillment
- cost-effective, timely delivery
- turnaround time compression
- process not convenient to users
- delivery is not convenient

Possible solutions to delivery problems are:

- Netflix model
- self-service
- protocol & process-agnostic
- basic service is free to library members
- patrons pay for premium service
- let users pay for having choices

[20] Documents from the brainstorming sessions can be found on the Rethinking Resource Sharing blog at http://blog.aclin.org/index.php?topic=ReThinkRS. Access to the items mentioned requires registration. The original discussion paper, notes from brainstorming sessions and other useful documents are available (after registration) in the Web Resources area.

- one-stop shopping with single integrated mechanism
- tracking
- broaden delivery options
- send to hand-held devices
- digitize on demand
- buy electronic only

The list of what users want, deserve and expect in library delivery are:

- provide home or office delivery for all materials including those requested from remote libraries
- same level of service as other online services (e.g. Amazon)
- multiple options for delivery – show cost, length of time and delivery location
- provide home or office delivery service when user's home library owns the material