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 British Fiction British History British literature buddhism buffy **Business** C c20 california calligraphy Canada **canadian** canadian
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christianity Christmas church Church History cinema cities civil rights **Civil War** class **classic** classic fiction classic literature
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cookbook cookbooks Cookery **cooking** Cosmology Costume counseling COVER cozy CP or craft Crafts creativity **Crime** crime
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Film Finance finished first **First Edition** fishes fitness florida Folio Folio Society folklore **food** Football foreign language forgotten realms
france French french history french literature French Revolution friends friendship fun funny future Futuristic G gaiman games gaming garden
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 Presents harry potter have hb hc healing **health** hebrew Herbs HERE hermeneutic high fantasy High School hiking hinduism his **historical** historical
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 science libronix life **linguistics** lit lit ent literary **literary criticism** Literary Fiction literary theory **literature** liturgy living room Local
 history Logic London Los Angeles love lp LR m m/m MA made into movie Magazine **magic** Magical Realism magick Maine male author management
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mathematics media medical Medicine **medieval** medieval history meditation **memoir** Memoirs Men mental illness metaphysics
 Mexico middle ages middle earth middle east Military military history mind Mine miniature book ministry minnesota Missions mm mmpb modern
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 COVER Nobel Prize noir non fiction **non-fiction** nonfic **nonfiction** not owned not read Not Read Yet not yet read **novel** novella
novels nr nt numismatics nutrition NYC NYR o occult Office old testament omnibus opera osprey outdoors **own owned** oz p pagan Paganism
 painting paleontology **paperback** paragonimal paranormal romance (parenting) Paris parody partially read patterns pb pbk PC pending penguin
 Penguin Classics periodical peri pern pets **philosophy** photographs **photography** photos Physics piano **picture book** picture

February 5, 2011

Library Director
Mid-sized Library System
123 Fake St.
Anytown, USA 98765

Dear Library Director,

As per your recommendation at the January board meeting, I have spent the last ten weeks investigating emerging Library 2.0 trends to possibly incorporate into our library. In our discussion of technologies like blogs, wikis and tagging, you expressed special interest in the implementation of social features to our web-based OPAC.

While there is much talk within the larger library community about the desire for a social OPAC, or SOPAC, very few libraries have adopted this technology. My report focuses on two libraries' systems, Ann Arbor District Library and Hennepin County Library, as well as the systems being developed by the major ILS vendors. Much of my research also looks at related social features in other web-based services.

Enclosed is an executive summary and the full body of the report including information about architecture, design, standards, markets, regulation and future trends.

Sincerely,

Whitney Winn

Library Technology Advisor

Executive Summary

Survey data shows that people are not using library websites, even though the majority of the population has access to the Internet. With the popularity of Web 2.0 services that bring people together in virtual communities and “harness collective intelligence” (O’Reilly, 2005), some libraries and library software vendors are bringing these features to the library. A library catalog that allows tagging, rating and reviewing of materials and shared lists is being called a social OPAC, or SOPAC.

The SOPAC’s architecture is no different than that of existing OPACs. The three-tier client/server model allows users to access the catalog database from any web browser without having to install any software. All functionality and upkeep is done on the library’s end.

Users are the central component of the SOPAC, so the system is designed with the user in mind. All of the features are straightforward and easy for someone to learn quickly. Much of the design mimics other web services like Amazon, Flickr and LibraryThing so users can transfer skills.

SOPACs, specifically, are not standardized at this point. Since the features exist alongside existing catalogs, standards like MARC and AACR2 formats still persist. The folksonomies created by collaborative tagging actually defy the standards imposed by controlled vocabularies like Library of Congress Subject Headings. The appearance of the features seem to follow some de facto standards, like five-star rating systems and the way tags appear on records.

Some social elements exist in current vendor software solutions – patron reviewing and rating appears to be the most popular – but only two vendors have announced plans to provide full-fledged SOPACs. In light of this, some libraries are creating this technology in house. This will probably be a competitive feature in the library software market, though a lot of that depends on whether or not users buy into the features provided by SOPACs.

Since SOPACs deal with user information, the systems must consider privacy issues. Most library policies strictly regulate the use and display of patron information, so all users have to opt in to this technology. We will also have to decide if we should

restrict use to people with library cards and if we should somehow filter the content before it gets added to the SOPAC.

Some emerging trends may affect the way this technology evolves. Users may continue to stay away from the library web site in favor of other web services, or these web services could integrate and share data. We also have to consider alternate forms of Internet access (eg. cell phones) in the design of the SOPAC interface.

With such an emerging technology, there are still many issues to be worked out by software developers and libraries. Before committing large amounts of money to developing an in house solution or buying a new integrated library system, our library should keep an eye on advancements of this technology. I would advise against investing in a SOPAC at this time.

Introduction

In today's networked world, those of us who work in public libraries often have to question our place in that world. People used to have to visit a physical place to access the information they wanted – they came to the library, looked up materials in the card catalog, and went to the stacks to retrieve the items. As computing technology emerged, card catalogs gave way to terminal-based online public access catalogs (OPACs) in the '80s, which then led to web-based OPACs in the '90s. But while technology was changing library systems, so too was it changing other aspects of people's lives. Now libraries have to compete with other web services like Google, Amazon, LibraryThing, and Netflix. Not only do users not have to come into our library to use the catalog, but they also do not have to use the library at all.

According to our numbers, though, more people use the physical library than the library's website. Sixty-five percent of people surveyed visited the library at least once in the last year, but only twenty-four percent used the library's online presence (ALA, 2006). While there may be many reasons for this low usage, research seems to indicate that OPACs are not user-friendly, especially when compared to alternate web services (Peters and Bell, 2006; Schneider, 2006). It is clear that people still find value in libraries since they are visiting them, but we need to find a way to inject value into our OPACs.

The library catalog is meant to record the holdings of our institution and enable users to find known resources, bring together related items and help the user choose between these objects. Since the 1800s, catalogs have appeared in many forms from book catalogs to card catalogs to microfilm to the current manifestation, the web-based OPAC. The OPAC offers much greater flexibility than older forms of catalogs. They do not require the same space as card catalogs and can be accessed remotely. Despite the many advantages of online catalogs, they still depend on rules and principles developed around print catalogs and do not utilize the capabilities of an electronic, networked environment. It seems that while users are, for the most part, able to locate specific items they are looking for using the catalog, the experience does not encourage exploration of the collection and the discovery of materials that may also interest them.

Library users today are accustomed to finding information in online networks. “They may expect to be able to rate and review, to persistently link, to receive feeds of new materials, and so on” (Dempsey, 2006). Amazon and Netflix allow their customers to rate and review products and create and share lists of materials. Amazon introduced tagging in 2005. Other websites – Flickr, YouTube, LibraryThing – use tags extensively and foster communication between users through comments and shared lists. All of these features characterize the Web 2.0 principle of “harnessing collective intelligence” (O’Reilly, 2005). Many librarians have looked to the success of these ventures and begun advocating Library 2.0 – libraries that focus more on the user and what he or she can contribute to the community of users.

One aspect of a 2.0 Library is the addition of a social OPAC, or SOPAC, a term coined by John Blyberg, the innovator behind the Ann Arbor District Library catalog. The SOPAC gives library users some role in contributing to the catalog, whether through rating and reviewing, tagging, creating shared lists, or a combination of the three. Such a system would not supercede the traditional catalog, but would rather add to it.

While all of the features of a SOPAC exist in various forms elsewhere, the use of this technology in libraries is still in its formative stage. Two notable examples of libraries experimenting with SOPACs are the Ann Arbor District Library, which

implemented tagging and user reviews earlier this year, and the Hennepin County Library, which launched a book list sharing and commenting system in February. Both of these libraries created the software in house, but vendors are also responding to this trend by developing new integrated library systems that include social features. Innovative Interfaces' Encore will include "patron tagging of collection to facilitate additional access points and community participation" and SirsiDynix's Rome will "provide capabilities for user reviews, recommendations, tagging, and more." Both will get a public release later this year.

The virtual communities created by the social features in the online catalog can complement and foster the physical community space provided by the public library. This report will examine various aspects of the SOPAC technology – architecture, design, standards, market, regulation, and its future – to evaluate its potential use in our public library.

Architecture

The features of the SOPAC would essentially be additions to our existing OPAC. They would be implemented as part of the programming of the catalog software itself, so the architecture described here applies to all OPACs, whether they employ these new interactive elements or not.

The library's OPAC is usually part of a larger integrated library system. This system manages all aspects of the library's services including acquisitions, serials, cataloging and the OPAC. "An ILS usually comprises a relational database, software to act on that database, and two graphical user interfaces (one for patrons, one for staff)" ("Integrated library system," 2007). This system is an example of a three-tier client/server model. The actual records of a library's holdings are encoded in the database on a server housed in the library building if there is only one branch, or a central building for a system with multiple branches. These records are stored in the Machine Readable Cataloging format (MARC), which ensures that all bibliographic records are cross compatible and that information can be readily shared between libraries. Since these records are stored independently in a database server, they can be

retrieved with any application that is designed to work with such records. This allows systems to display the same basic data in different ways and for the updates of the software without affecting the information in the database itself. See figure 1 for a visualization.

The essential part of the OPAC is the application that operates on the database. This software is housed on the library's end, on a separate application server than the database. The current state of the OPAC is a continuation from the early years of development. Originally, online catalogs were created to digitize the preexisting card catalogs. These early manifestations appeared in three forms: in house, consortium, and package or turnkey systems (Butterfield, 2003). Major university and research libraries were among the early developers of this type of software, but commercial vendors came to dominate the market due to primarily financial concerns (Butterfield, 2003). The OPAC itself allows users to search the database of MARC records by a number of fields, commonly title, author, subject heading, and keyword. The software used in academic catalogs often allows for more search fields than a public library catalog, a decision based on perceived user needs. The OPAC software also presents the database in a graphical format that is easier for users to navigate and displays the bibliographic record using terms familiar to the user rather than the numerical fields of a MARC record.

Though early online catalogs were only available at terminals located within the library or via dial-in access, library catalogs are now available on the Internet. Users can use their home computers provided they have Internet access and a compatible web browser. With the growth of portable computing devices and wireless technology, the library catalog can be accessed from conceivably anywhere. Even within the library building itself, access to the catalog is provided by way of the Internet. None of the catalog software is stored on the user's device — it is just displayed to the user by a thin client, or web browser. Because the library user is the key element of the social OPAC movement, it is important to investigate how their interactions with the catalog are recorded and stored. Users interact with the application software presented to them over the web interface. Anything they add like tags, ratings, reviews or other feedback

must then be added to the record of that item in the database. Library catalogs already employing some type of social aspect allow all viewers of the catalog to see other users' additions, but require a user to log in to the system to make additions of his or her own.

Since the primary access point to the OPAC is a web interface, anyone with Internet access, whether dial-up or broadband, can access the system from anywhere. A greater variety of features included in the social OPAC will likely increase the needed bandwidth for the user and the library system itself. The library's servers may need more processing power to handle more tasks and the user will need faster connections to view graphic-heavy OPACs. Since many users use the OPAC from computers in the library, we will also have to ensure that these machines are capable of displaying the OPAC. These issues pose questions as to limitation of access to certain user groups and to the greater funding needed to maintain the library computers and the database and application servers.

Design

Online public access catalogs are, as stated in their name, intended for public use. They allow users to discover what materials our library holds and since we are a public library, our catalog needs to be designed in a way that is accessible to a variety of users. These users range from children to adults and from highly web-savvy researchers to people who may be using a computer for the first time.

Current web-based OPACs are just continuations of older, print-based catalogs. When Anthony Panizzi and Charles Cutter established their rules for catalogs, they shaped how catalogs would be designed for years to come. That is, records included set fields (author, title, publisher, subject, etc) and were arranged in a particular order (alphabetical by author, title or subject). The first generation OPACs in the early 1980s, merely emulated print catalogs – a user accessed the database through a text-based interface and searches were limited to left-anchored searches of certain fields (Husain & Ansari, 2006). Later OPACs allowed keyword searching, truncation and wild card support, browsing and more manipulation of search results. While all catalogs are intended to facilitate user access to library materials, user-centered system design is just

recently gaining momentum (Taylor, 2004). The nature of the web allows for the design of more interactive, user-driven services in web-based OPACs.

The idea of social OPACs did not arise in a vacuum. Their growing popularity is part of the Web 2.0 trend and also a response to the popularity of non-library sites like Amazon. The designs of already implemented SOPACs owe a lot to the designs of these other services. Users familiar with collaborative tagging from sites such as del.icio.us and Flickr will see similarities in library catalog tagging. Likewise, user ratings and reviews in many catalogs resemble that used on Amazon. "I'm rather excited to see if library users will respond to these tools in an OPAC setting as much as Web 2.0 users have to commercial social networking sites" (Blyberg, 2007a). Blyberg wrote the code for the SOPAC at Ann Arbor District Library by himself and does not indicate his process. Hennepin County Library provides even less documentation about how and why they implemented their Bookspace.org. Both Innovative Interfaces and SirsiDynix are collaborating with libraries to create their new systems, but again, there is no indication of how users play into these designs. All the systems seem to be based on theoretical ideas of what users might want to use and how they will use them.

Collaborative tagging is one of the newest social trends online. It allows users to freely assign keywords to items in the catalog. This is usually done by providing a simple text entry box on the record display page. Users can enter as many tags as they wish separated by commas. All tags for an item are stored in the catalog. Since there are no restrictions on the words entered, there is the possibility of misspellings, offensive language, unrelated terms and the like. Most systems allow users to click on the tag in one record and retrieve all other materials tagged with the same term. Systems may also display lists of the most popular tags or the most recent tags in what is called a tag cloud. Another useful feature is the ability to generate an RSS feed for specific tags, so a user is informed any time another item is tagged with a particular term.

Another popular social feature for catalogs is the ability to rate and review materials. Users assign a rating to the item, usually using a five-star scale and can provide a review using a text box. Existing reviews for the item can either be on the main page of the record or can be viewed by clicking on a link. Some systems allow

other users to provide feedback on reviews by clicking yes or no in response to “did you find this review useful?” or by commenting on the review. The system may also provide a means for reporting of abusive or offensive reviews directly to the library staff. Users can also subscribe to RSS feeds for reviews, either by user or by item.

Users may also be able to create lists of materials. Most library catalogs allow users to see which items they have checked out and the ability to renew these items. A more social OPAC would let users create multiple lists of items. These lists could be used privately to keep track of items they wish to check out or to maintain a log of books read or movies seen. Users should also have the ability to share lists with other catalog users. Shared lists are used on many social networking sites like Amazon and Netflix and are the primary feature of Hennepin County Library’s Bookspace.

Ann Arbor and Hennepin County require users to create a login to use any of the social features beyond just browsing the catalog. This online login can be tied to a user’s library card number if he or she wishes. This allows users to maintain their own tags, reviews and lists and gives them control over privacy settings. Requiring a login makes it more difficult for spammers to attack the system. Neither of these libraries allows users to create profiles, though, which could be a useful tool for fostering the sense of community. On both sites, you can see lists of all someone’s reviews, tags, or lists, but there is no other information about the user. While public profiles would have to be opt-in for privacy reasons, the ability to know more about other users on the SOPAC allows for discovering and connecting with other community members (Kroski 2006).

Obviously the usefulness of such a user driven design is only as good as the users make it. According to a December 2006 survey by the Pew Internet & American Life Project, 28 percent of Internet users have tagged online content and seven percent tag content daily (Rainie, 2007). At Hennepin County Library, 144 book lists have been created by users in a little over a month. In the first week of Ann Arbor’s SOPAC, 27 people tagged 97 items and 16 people reviewed 21 items, numbers that Blyberg found “promising” (Blyberg 2007b). While the prevalence of these user driven features across the web may be enough to justify adding them to the library catalog, it may still be

prudent to conduct user surveys or focus groups to see if our community expresses interest and what features they would like implemented.

As with any service, it is also important that the system is designed to be sustainable, expandable and adaptable. If users come to expect these sorts of social features in the catalog, we cannot lose the data or decide that it is no longer relevant. We also need to be able to add new features or tweak existing ones in response to user feedback. If the services become very popular, we need to be able to support the traffic and deal with items with many reviews or tags. Much of this flexibility of the social OPAC depends on whether the system is designed in house or provided by a vendor. An in house design has the advantage that it is designed with our library's users in mind and we can make changes as often as we need. A vendor provided system will be compatible with our current ILS and has the input of a wider range of libraries, but is not as adaptable to our needs.

Standards

The emergence of social OPACs is a relatively new phenomenon. As such, there are no official standards in place at present. That said, there are some aspects of the social OPAC that may become de facto standards.

The existing web based OPACs themselves are standardized to a point. They all utilize the standard MARC format to encode the records, but the way the system retrieves and displays this data varies from vendor to vendor and from library to library. From the user's end, one expects to find a simple search screen that allows author, title and subject searching. Library catalogs will also display a certain amount of bibliographic information, though the amount can range from just some basics like author, title, publisher and call number to very rich displays that also include table of contents, professional reviews and other data.

As for the social features of the catalog, the first standard to look at is just what features we want to include in the system. Current trends seem to indicate that tagging, rating and reviewing and shared lists are the most popular features to implement. Since there is no standard dictating that all libraries must implement a specific set of features,

it is up to the individual library to decide what to add. This could be based on what users indicate in surveys or the decision may be left up to library software vendors.

Many libraries use proprietary software from vendors to manage their collections, so the way these vendors design systems may guide some standards. Some library vendors are starting to respond to this emerging trend by offering social features in their ILS software. Many libraries, however, are developing these features ad hoc. John Blyberg at the Ann Arbor District Library, for instance, wrote his own code that integrates with the library's ILS. He offers this code open source, so maybe this sort of grassroots movement will dictate the way the social OPACs standardize (Blyberg, 2007a). There may also be tension between the vendors and the independent, open source developers. Some software companies might prohibit the customization necessary to use independent coding of these features. Cost might be a prohibitive factor in using social features in our library catalog, if this is the case.

Aside from the broader standards of the OPAC itself, the features we may want to implement also come with some of these issues. Tagging seems to have developed according to some de facto standards. That is, the way tagging that is done on various websites occurs in basically the same way. Users enter tags into a text box, separating tags by commas. Most systems allow multiple words as one tag, though some do not. It is helpful to the user to see a similar interface, so that the process becomes familiar to them. If we radically alter the way a user tags an item, we force the user to learn a new method that might discourage them from using the feature.

One aspect of tagging that is not standardized is the terms used – users can type in any word they want, even strings of characters that are not dictionary words. Of course, this is the appeal of social tagging. Traditionally, library catalogs display very standardized sets of information. The fields are standardized according to MARC and the data in the fields complies with AACR2. The subject headings are part of controlled vocabulary sets, like Library of Congress Subject Headings. When multiple users tag information, they are creating bottom-up classifications, or folksonomies, that do not follow standards. These folksonomies offer many benefits: they are inclusive, current, non-binary, and usable (Kroski, 2005). Of course the standardized subjects have benefits

of their own, so it is important to keep both in the system so users can choose how they wish to search.

Likewise, the rating and reviewing of materials has also developed some standards. Most web-based systems like Amazon and Netflix allow users to rate items on a five-star scale. There is no reason why this scale as opposed to a ten-point scale or a thumbs-up/thumbs-down scale should be the standard, but it has emerged as such. Other elements of reviewing are also present on most systems, like the ability to comment on a specific review or to mark a particular one as being useful.

While there is no governing body that is setting de jure standards for library catalogs, it makes sense to design the interface in a way that is familiar to users. Since social aspects of web pages are only as effective as the users make them, we do not want to have any unnecessary barriers to their use. If tagging and reviewing are done the same as on any other Web 2.0 page, users will know how to use them when they encounter these features on the library catalog. Whether or not they actually make use of them is another case.

Markets

For the social OPAC technology, there are three players in the market: the library, the users and the software provider. In some cases, the library itself will also be the software provider. When choosing how to implement this technology we must look at the ways these players interact.

Since our library has an existing ILS, it does not make practical sense to switch to a new one just yet. The ILS is such an integral component to the functioning of a library, changing systems requires a lot of research, money, training and other resources. In this way, once a system is in place, the library is essentially locked in to that particular software.

So the easiest way to implement social features to the OPAC would be by adding the features on to the system. We can achieve this by writing our own code to customize

the current OPAC. The Ann Arbor District Library's catalog is provided by Innovative Interfaces, but they wrote the SOPAC application in house. Most ILSs allow for some level of customization. Hennepin County Library's Bookspace actually exists separately from the catalog, with links to the records.

Another way to get these features is to request them from the vendors. Some are already responding to the trend by developing new programs. Innovative Interfaces, for example, is working on a new system called Encore, which they announced in May 2006. It will include community tagging and patron rating and reviews, among many other features. They are developing this software in cooperation with several libraries. SirsiDynix announced its Rome system in March 2007. These vendors were the top two vendors in 2006 (Breeding, 2006), so there may be some market pressure to follow suit. On the other hand, smaller vendors may not have the resources to build entirely new systems. Companies that do offer reviewing and tagging may have an edge on their competitors for libraries who are looking to switch.

According to a recent survey (Wayne, 2006), there are at least 45 different ILS software system options available from software vendors, 27 of which market to public libraries. While the survey reports on a variety of features, only one social feature is addressed — "can patrons submit book reviews?" Of the ILS systems for public libraries, 11 of them offer this feature. Since the survey does not include tagging, it is difficult to judge how many systems offer it, but it is definitely not a common feature at this time. With two of the major vendors announcing these features, however, next year's survey may include questions about social OPACs.

Pricing for an ILS system varies greatly depending on the specific library's size and needs, so it is difficult to estimate a general cost. If we want to write the code to supplement our existing software, we can use a current staff member's skills to write the code or hire someone to custom create it. John Blyberg of Ann Arbor District Library offers the code he created for free use, but it will still have to be customized for our catalog. Besides the initial implementation of the software, we also have to keep in mind the cost of the upkeep and updating of it. Software develops quirks and bugs and with social features, we must monitor the usage for instances of spam or other abuse of

the system. And to get users to use the system, we have to consider marketing and promotion costs.

Another important aspect of the market to consider is the user. In order for the users to “buy in” to the social features we could provide in an OPAC, they must see the benefits. This is the network effect. Users will benefit the most if lots of other people use the service. One tag on a book does not do much good and, in fact, may have nothing to do with the subject. If many people tag that book, users can see the many words associated with it and will see that some tags are used more often for that book. Similarly, if just one person reviews a book and hated it, the book will have a very skewed rating. With more reviews, the user can see multiple opinions and see trends develop. Ideally, people will use the social OPAC features and benefit from them, so they will in turn contribute to the system.

Regulation

The addition of social features like tagging, rating/reviewing or shared lists to preexisting web OPACs is a relatively recent phenomenon. As such, specific rules and regulations governing the development and sale of the technology have not yet appeared. There are, however, some considerations related to the regulation of the use of the technology.

Since the technology focuses on the user and his or her opinions, we will have to consider how privacy issues play a role in the system. Privacy of user information is an important value in libraries and in most states confidentiality of circulation and registration information is protected by law. ALA advises that libraries limit the degree to which personally identifiable information is monitored, collected, disclosed, and distributed and avoid creating unnecessary records, retaining records that are not needed for operation of the library, and avoid library practices and procedures that place information on public view (2005). In developing the social OPAC features, we must maintain our users’ privacy and confidentiality. There is some tension here because we also must collect some information to allow the user to access these features.

The Ann Arbor District Library requires users to register on the library website before contributing to the social OPAC features. For privacy purposes, however, the user can choose to enter only minimal information. In this case, only a user-created name and password combination is necessary, though one can also choose to add an e-mail address or library card number. This allows the user to participate in the shared knowledge of the social OPAC without giving personal information. Of course, this also inhibits the community sharing aspect of the OPAC if users do not know who else is contributing.

Another related issue is how we regulate the use of the features. One option is to open access to anyone who registers online, whether or not they have a library card. This requires the least initial regulation and has the least barriers to access. Allowing just anyone to contribute, though, offers more opportunity for abuse of the system by spammers and the like. Library staff will have to monitor usage of the system to guard against abuse.

Alternately, we may require a library card number to register for the web based OPAC. Since we already have regulations in place to obtain a library card (eg. local address), there is no additional screening to participate in the social OPAC community. By only permitting current library patrons to use the system, we maintain the local community feel. Users will have some idea of where the information is coming from – that is, from their neighbors and not just some random digital entity. This regulation may encourage non-patrons who find value in the system to visit the library and obtain a library card. However, it may also just be another barrier to access and further drive non-patrons from the library. This choice clearly has many implications.

Since the above issues relate to the idea of abuse of the system, it is also important to be concerned about how the library will regulate content of user-submitted information. The nature of social features allows for users to add any tags they want or to write anything in the reviews entry form. Should we screen all content before it displays to the public? And if so, how do we decide what is allowed? We do not want to censor users, especially when it comes to their opinions, but we also have to consider the value of contributions to the community as a whole. Children also use the

catalog and there are special restrictions guiding their use of the Internet. The Children's Online Privacy Protection Act requires web sites that collect personal information from children under 13 to comply with certain regulations like what to include in a privacy policy and how to get parental permission. The Deleting Online Predators Act of 2006 is still under consideration, but would require libraries to restrict access to social networking sites. The decision to somehow regulate use of the SOPAC is a gray area that should be clearly outlined in library policy. Since it is an emerging technology, we must pay close attention to how our users are shaping the landscape of the social catalog and to how other libraries and associations are responding to these same issues. At present, the SOPACs at Ann Arbor District Library and Hennepin County Library do not appear to filter content and it is not known how the vendor software will operate in this arena.

Looking toward the future

As discussed elsewhere in this report, the social OPAC trend is still a new phenomenon. Libraries and vendors are working on providing software solutions to implement social features in existing OPACs and creating entirely new integrated library systems that include these features. It will be interesting to see how users respond. The ideal outcome would be a thriving library website where a large percentage of the community, both current users and former nonusers, interact with each other and utilize the SOPAC to increase the circulation of library materials. Of course, there will have to be methods in place to track this kind of data. Then again, users may continue to use other web services instead of the library and only a few people use the SOPAC rendering it fairly ineffective.

If current trends continue, though, the Internet and Web 2.0 technologies will gain importance in people's lives. Increased bandwidth, decreasing connection costs, and wireless capabilities are making the Internet even more ubiquitous. This means more people on the Internet more often, which could lead to increased use of social websites like the library SOPAC. Similarly, these trends could lead to a "diminishment

of community and social connectedness within our society” (Kroski, 2006), which a virtual community that reflects a local community could help to lessen.

Another movement that could affect the OPAC is the integration of resources. Compared to choices people have in the real world, the sheer amount of information available online is overwhelming. Even social web services are multiplying. People often have accounts and contribute information to multiple sites. For instance, one can tag photos on Flickr, review movies on Netflix, maintain a book collection on LibraryThing, contribute restaurant reviews on Yelp, and bookmark websites on del.icio.us. Mashing up information is another characteristic of Web 2.0, so one could foresee some service that compiles your contributions and profiles from all these sites into one. Thomas Gruber envisions something like this, some way to “exchange, compare and reason about the tag data without any one application owning the ‘tag space’ or folksonomy” (2005). A web application like this would certainly require some standards to share the data, so we will want to keep an eye on developments like this to ensure library catalogs get included.

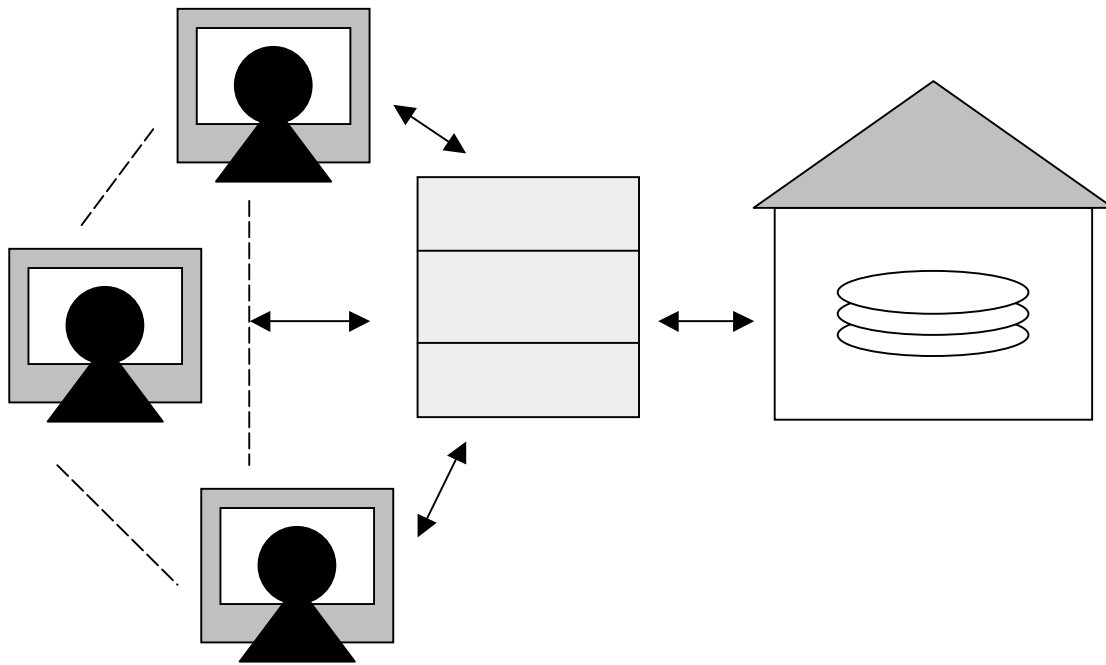
The increased ubiquity of the Internet is another issue to consider. With wireless capabilities on PDAs and cell phones, people can access the Internet from anywhere. The screens on these devices are much smaller, though, so if we want users to access the SOPAC from anywhere, we have to design web pages that can be displayed across various platforms.

Conclusion

The social OPAC is a promising new technology. Instead of giving our users a catalog that is difficult to navigate and far behind the capabilities of other web services, we can give them a place to contribute their own ideas and interact with other community members. Tags, user-submitted reviews, and shared lists offer new discovery paths and the ability to find information with organic, personal terms instead of relying on an imposed vocabulary structure. That being said, it is not clear that users want these capabilities in a library catalog. If we build it, will they come?

Whether we develop a SOPAC in house or go with a vendor, this technology will cost money. Purchasing a system from a vendor makes the most sense for our library, as our technology staff does not have the resources to develop software at this time. But switching integrated library systems is a long process that we should only undertake if we are truly confident that it will benefit the library and the community.

Since the Innovative Interfaces and SirsiDynix systems are still in development, I advise that we wait to implement social features to our catalog until their public launches later this year. By that time, maybe we will see some more research and data on users' perceptions of these kinds of systems. I will continue to pay attention to advancements in this field and update you on my findings in six months.



Tier 1: user at web browser

Tier 2: application server

Tier 3: server with catalog database

Figure 1. Web-based client/server library information architecture. Dashed lines between users represent social interactions facilitated by the application. Based on Li (2006).

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