



Breaking through the Walls: Enhancing Library Services and Resources by Moving Data into and out of Library Silos

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The focus of the paper was to highlight 10 resources that can be used to enrich libraries and library user experience by using technology to move information and data into and out of library silos. Below we have found 10 emerging tools and technologies to facilitate this process and enhance our resources and services to provide a better library experience for users.

Mashup

<http://www.programmableweb.com/>

A *Mashup* is the concept of taking multiple sources of information and/or data and combining them together using web services, which allows the convenient and creative integration of disparate data into a single location or tool. Commonplace applications include incorporating feeds and widgets on websites (RSS, Twitter, Delicious Bookmarks, search boxes).

Libraries can integrate many external tools and sources of information relevant to users into a mashup website. Libraries are prolific holders and generators of content and metadata. Using this data in combination with external web services tools can greatly enhance the context of information and the user experience. Furthermore, opening this data up to be *mashable* by the wider web community may yield unanticipated results.

- University of Puget Sound Collins Memorial Library retrieves *NY Times* Bestsellers Lists and places them on library catalog page as a RSS feed.
- Readingradar.com combines *NY Times* Bestsellers Lists and Amazon data to enhance the list.

APIs

APIs, doorways for structured data, allow different programs to communicate with each other over the web to query and return data results. These results can then be parsed, used, and displayed in a number of ways. Coding is required to use APIs, but it is more important to know what APIs are and what they can and cannot do. Good APIs will have documentation that describes the information that can be retrieved. Even if you do not understand all the “nuts and bolts” of scripting and programming, you can still see what kinds of information can be brought back from these external sources and why providing APIs for your library resources can be advantageous.

Libraries use APIs frequently. Discovery layers, OPACs, WorldCat, Google Maps, LibraryThing, Flickr, Facebook, Mendeley, etc. all have APIs that are extensively employed by libraries to retrieve and integrate data and to facilitate cross-platform discovery. A list of APIs that could be of interest to libraries can be found at: <http://techessence.info/apis> (Tennant, 2008).

- Example of API documentation: LibraryThing at <http://www.librarything.com/services/>
- Example of API query: NY Times at <http://prototype.nytimes.com/gst/apitool/index.html>

Yahoo! Pipes

<http://pipes.yahoo.com/pipes/>

Yahoo! Pipes is a freely available tool (with a Yahoo! account) to combine different sources of information into a singular feed or tool. It utilizes a graphical user interface (GUI) to simplify the process of aggregating these feeds and provides methods to filter, sort, and manipulate data passing through the feed. The resulting feed can then be embedded on a website. A pipe can also be published publicly for cloning and modification by other individuals or organizations with similar needs. Yahoo! Pipes provides an easier

means to create sophisticated mashups with less human investment spent creating complex code. As such, libraries and library organizations have started using Yahoo! Pipes both to provide information to users and to aid user discovery.

- This feed aims to bring together news items posted by library services in Scotland, whether on institutional websites or blogs. Developed by the Scottish Library and Information Council (SLIC): http://pipes.yahoo.com/pipes/pipe.info?_id=6i28A8Rv3hGFIZQI_frsUA
- Amazon Feed Remixed pulls in the feed from Amazon and rewrite it so books link to WorldCat.org and there is a link to TOCs from GoogleBooks (Karen Coombs): http://pipes.yahoo.com/pipes/pipe.info?_id=293d1dcb85e3c1171a3d90c063eb44b5

Google Maps/Google Earth

<http://maps.google.com/> -- Create Google Maps

<http://maps.google.com/help/maps/getmaps/advanced.html> -- Google Maps APIs

Geographic mapping provides another layer of context for data and is very useful for information seekers. In fact, half of all Google searches contain some sort of geographic component according to Andrew Foster, product manager at Google (Sweney, 2010). Creating your own map by placing markers on specific locations is straightforward and can be embedded on websites. Your site can also communicate with the various Google APIs to create a dynamic and interactive tool for users to search or browse markers.

Many libraries use Google Maps to enhance their holdings and data. Google maps are used as simple branch location maps, as geo-location tools for finding nearest library holdings. They also display a resource's subject using geographic metadata or may be overlaid on historic maps. Transforming library holdings into intelligible geographic coordinates for Google's APIs can be challenging depending on the metadata records. Consulting the professional literature provides a few examples to overcome these obstacles. Again though, one must know the possibilities of Google Maps and Google Earth.

LibX

<http://libx.org/>

LibX is a free, open source extension for Firefox and Internet Explorer that lets patrons use services offered by the library. Users can search catalogs, databases, journals, and Google Scholar for information and services, search ISBNs and ISSNs to find specific books, and can create a LibX edition through the LibX Edition builder, which allows librarians to create, edit, maintain and provide a LibX Edition for free in their library. LibX is produced by Virginia tech, and currently 962 academic and public libraries have created public LibX editions.

Many different examples are in practice. Harvard, Brown, Missouri State, NYU, and the University of Missouri all have LibX editions. MU especially has taken advantage of the LibX toolbar. Currently MU has 10 different editions of LibX for different libraries such as Education, Journalism, even fisheries and wildlife ecology. There is much discussion in library literature about LibX, and the University of Missouri has a subject guide to direct users through downloading and using the software. In the *Journal of Web Librarianship*, Jon Ritterbush provides examples of how LibX and Zotero can be used to support research. Once LibX is installed correctly, users can browse a libraries catalog and databases with minimal effort.

Mendeley

www.mendeley.com/

Mendeley is another free resource of which librarians can take advantage. Many different companies and services have citation management software. Mendeley is a desktop application in which users can import and manage citations. Mendeley offers plug-ins for Microsoft word, Open Office, and other programs as well as the ability to import and export citations to other services such as Zotero and Citeulike. Users can add text to image files to enable easy searching and finding.

Mendeley has been gaining popularity due to the “social components and statistical information,” which creates a whole new set of uses (Curran, 2011). Library users can aggregate information statistics about papers, authors, journals and academic disciplines and recommend interesting articles and research to other Mendeley users.

Bibliocommons

www.bibliocommons.com, www.dbrl.org, www.nypl.org

Bibliocommons and other social media OPACs are becoming more common in libraries. Social Media overlays allow libraries to share resources with more than just their library system. While the default setting for users is private, users can opt to write reviews, create tags and lists, and share information with other users. Bibliocommons integrates reviews and other resources and shares them online with all Bibliocommons users.

There are many different implementations of Bibliocommons. The New York Public Library and the Boston Public Library are two of the larger libraries currently subscribing to the Bibliocommons service along with smaller libraries such as the Daniel Boone Regional Library. Bibliocommons adds information and features that users would not normally get from an OPAC.

Mobile Apps

<http://www.nytimes.com/2011/06/26/nyregion/new-apps-from-the-new-york-public-library.html>

While libraries should have a mobile presence, there are many different applications and uses for libraries. Librarians should know where to go to have mobile applications developed. Gale has recently created the free AccessMyLibrary app in which users can make the library’s resources available on student’s iPhones, iPods, iPads, and smartphones.

Along with finding and researching, mobile apps also have the ability to work as interactive subject guides. Google earth has a nice app for reference, but larger libraries such as the New York Public Library are creating interesting subject specific mobile apps that allow users to peruse subjects. Examples are Biblion, a mobile app that allows users to read about the 1939 World’s Fair, and Find the Future, an app that prompts users to seek out objects and resources within the library in order to accumulate points.

Google Analytics

<http://www.google.com/analytics/index.html>

Google Analytics is a free service offered by Google that allows users to collect detailed statistics about site traffic. The Google Analytics is the most widely used website statistics service. The service allows staff to track web usage and build better websites and services for users. Google analytics would be useful when determining the effectiveness of a library’s website.

Anthony McMullon in Internet resources highly recommends Google Analytics as a free, easy and unobtrusive service to judge the overall effectiveness of the library’s website. There are many guides on how to set up, use, and analyze Google Analytics correctly; including a guide by Karen Marek in *Library Technology Reports* that specifically guides librarians through the set up and implementation of Google Analytics on a library website.

Creative Commons

<http://creativecommons.org/>

Legal issues are attached to works regardless of whether or not the creator has filed any paperwork. As such, copyright and licensing are important considerations when information and data are being transmitted, repurposed, or re-released in the web environment. Creative Commons Licensing (CC) has become a widespread tool to help clarify rights and reuse concerns of both content consumers and content creators. Although it is not a full replacement for copyright law as legal recognition is not certain, CC

has been adapted for 50 nations and provides an agile means to extend and express rights and regulations to works and information (Baumann, 2009).

As information and data become more portable, malleable, and mashable, libraries have begun to adapt various licensing strategies (Stephens, 2011). With a traditional commitment to openness, Creative Commons has been employed frequently by libraries. An added benefit to releasing information and data under Creative Commons is that the clear-cut nature of the license reduces time spent rectifying complicated rights inquires (Parkins, 2009). Creative Commons may not be right for all content, so libraries must understand the instances and issues where CC would not be appropriate (JISC, n.d.).

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