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## Supporting Library Research with LibX and Zotero

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# **COMMUNICATIONS**

# Supporting Library Research with LibX and Zotero: Two Open Source Firefox Extensions

Jon Ritterbush

ABSTRACT. Two open source extensions to the Firefox browser, LibX and Zotero, can improve the research process for library staff and users. Once configured and installed, LibX provides Firefox users with an additional browser toolbar and right-click functionality that can search a library's catalog, OpenURL resolver or federated search engine, as well as other Web sites. LibX also includes an autolinking feature, which embeds searchable links within other Web sites such as Google, Amazon, or Yahoo. Zotero merges the best features of other citation management programs with those of popular Web 2.0 services. Zotero users can store full citation information and sort, tag, annotate, and search these citations from within the Firefox browser. Zotero can also "scrape" citations from certain Web sites, allowing users to selectively save citations into their research collection. Zotero can generate complete bibliographies in MLA, APA, and Chicago styles. The abilities to remotely store, synchronize, and

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**KEYWORDS.** Browser extensions, LibX, Zotero, open source software, linking, bibliographic management software, citations, bibliographies

Librarians looking for more reasons to embrace Mozilla Firefox as their default Web browser should consider two helpful and free Firefox extensions: LibX and Zotero. Both of these open source add-ons enhance the research process for library staff and users, and LibX can serve as an effective marketing tool, helping libraries establish their brand identity within the Firefox browser.

### LIBX

LibX, available at http://www.libx.org, is freely distributed under the Mozilla Public License. Once configured as a library-specific edition, LibX provides Firefox users with an additional toolbar that can search a library's catalog, OpenURL resolver, or federated search engine, as well as other Web sites. The LibX extension only works within Firefox, but it is compatible with Windows, Mac OS/X, and Linux operating systems. As of February 2007, more than forty academic and public libraries had configured live editions of LibX, and it had been downloaded 8,200 times.<sup>1</sup>

Toward the left edge of the LibX toolbar, libraries may opt to configure a short list of bookmarks, which appear above LibX's display preferences (see Figure 1). LibX gives individual users the option to direct search results to the same tab, to a new tab, or to a new window. Users may also enable or disable LibX's autolinking feature, which automatically embeds a library's icon with a searchable link to the library catalog from search results within certain Web sites, such as Google, Amazon, Yahoo, or Barnes & Noble (see Figure 2).<sup>2</sup>

The toolbar search form allows for searching a library catalog by keyword, title, author, subject, call number, and ISBN/ISSN (see Figure 3). At Regent University, LibX was also configured to allow users to search

FIGURE 1. Libx Bookmarks, Display Preferences, and Autolink Option



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FIGURE 2. Icon Autolinking from Amazon to Regent University Library Catalog

# Travels with Charley in R by John Steinbeck (Author) (169 customer reviews)

our journal list (via Serials Solutions) in addition to Amazon, Google, and Open WorldCat. Toggling between different search engines is as easy as clicking on the arrow to the right of a label. Additional search fields can be added by clicking a blue arrow icon next to the search box. Users may also highlight and drag words or phrases from a Web page into the search form, or to the toolbar's "Scholar" button to search Google Scholar.

LibX also adds several options to the context menu within Firefox (see Figure 4). By highlighting and right-clicking text within a Web page, users can quickly search the catalog by author, title, or keyword, or search Google Scholar. If an ISBN is selected, the context menu options will change to search a library catalog by that number, or search OCLC's xISBN service if configured, to locate different editions of the same title. If a digital object identifier name is selected, the context menu will display an option to search a library's OpenURL resolver, if configured. The context menu can also reload a page through a library's proxy server, a helpful feature for off-campus users attempting to access non-proxied article links.

LibX was developed in 2005 by Annette Bailey and Godmar Back at Virginia Tech University, in part to address the problem of library search tools being less accessible or poorly integrated with browsers, particularly in comparison to other search engines, such as Google and Yahoo.<sup>3</sup> LibX currently supports several major ILS systems including Innovative Millennium, Dynix Horizon/IPAC, Ex Libris's Aleph, Sirsi, and Voyager, but the developers are willing to assist libraries using other systems.<sup>4</sup> Additional screenshots, screencasts, and documentation are available at the LibX Web site.

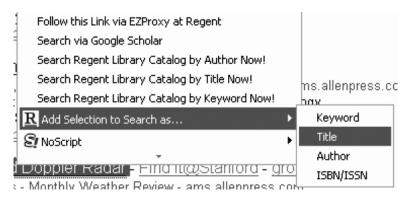
Librarians can request an edition for their own libraries by e-mailing a configuration file and two versions of an icon to Bailey and Back, following the instructions at the LibX Web site. The configuration file can be tweaked in any text editor, such as Notepad, and is complete with

FIGURE 3. LibX's Search Toolbar Can Expand and Search Selected Fields



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FIGURE 4. LibX Context Menu



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comments and examples. An excerpt of Virginia Tech's configuration file, as posted on the LibX Web site, is listed herein:

```
# This name of the edition will be shown in the title bar of the
# "About-Box" box and in a tooltip
#
libxedition=Virginia Tech Edition
# This is shown in the list of extension if the user clicks on "Tools- >Extensions"
emname=LibX Virginia Tech
# This is shown in the toolbar as label on the button on the very left
emnameshort=LibX VT
# These links are shown in the dropdown menu on the top left
$link1.label=VT University Libraries
$link1.url=http://www.lib.vt.edu/
$link2.label=Addison Catalog
$link2.url=http://addison.vt.edu/
$link3.label=LibX VT Homepage
$link3.url=http://libx.org/editions/vt/libx.html
# you can add more here
```

Librarians may also review the configuration files of other libraries' editions with similar ILS, proxy, and OpenURL systems at http://www.libx.org/editionsintesting.php.

Ideally, the icon should be an eye-catching graphic that will help your library establish or advance its brand identity. This icon should be legible

in a  $16 \times 16$  pixel format, as well as a larger size, such as  $48 \times 48$  pixels. The smaller icon is displayed in the LibX toolbar, but it is also inserted on select Web sites where bibliographic "cues" for autolinking are available. The larger icon is displayed in the LibX "About" page.

What's next for LibX? The developers have received two years' funding from the Institute of Museum and Library Services to develop a LibX version for Internet Explorer and to allow librarians to build and customize their own test editions online.<sup>5</sup> Some consideration has also been given to adding a "pre-search" option to LibX, where a library's autolinking icon would be displayed on an Amazon or Google page, only after searching and confirming that the library owned a particular item.<sup>6</sup>

### **ZOTERO**

Zotero, available at http://www.zotero.org, helps users collect and organize research sources within the Firefox browser. Though this extension works only with Firefox 2.0.x, it is compatible with Windows, Mac and Linux operating systems.

Zotero merges the best features of other citation management programs with those of popular Web 2.0 services. Users can store full citation information and sort, tag, annotate, and search these citations. Released as a public beta in October 2006, word of this handy extension is quickly spreading; the editors of *PC Magazine* have named Zotero one of the best free Firefox extensions.<sup>7</sup>

One of Zotero's most powerful features is the ability to "scrape" citation information within the Web page being viewed. With a single-click, users can save this information to the appropriate fields in its database. For example, an author search of Amazon yielded a list of results, which Zotero recognized by displaying a folder icon in the Firefox address bar (see Figure 5). By clicking on this folder, users can then selectively import citations into Zotero (see Figures 6 and 7).

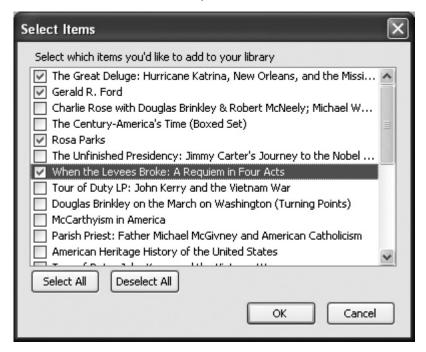
Bear in mind, citations are only as complete as they are on the Web page from which they are imported. Your mileage may vary, but Zotero does offer some welcome surprises. When testing against Regent University Library's catalog (Innovative Millennium ILS), Zotero detected the page as batch of catalog results and allowed me to save selected records from within that batch. In essence, Zotero provided a "cart" for saving search results, even though at the time our version of Millennium didn't allow users to save records through its Web interface. Zotero also saved each item's subject headings as potential new tags for my research

FIGURE 5. Zotero's Scraper Detects Citations and Displays a Folder Icon in the Address Bar



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FIGURE 6. Zotero Can Scrape Selected Citations from a List

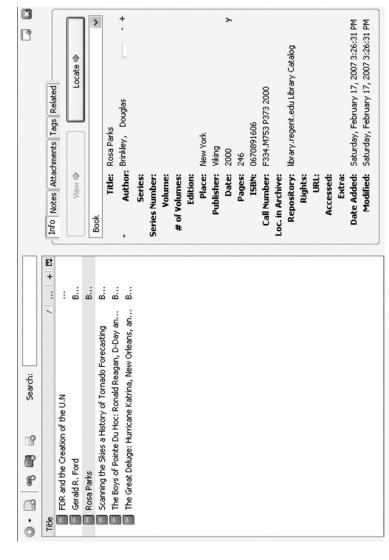


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collection. A complete list of Zotero-tested databases and resources is available at http://www.zotero.org/translators/.

Zotero also supersedes simple bookmarking by taking automatic snapshots of stored Web sites and articles. This offers a tremendous advantage for capturing information from frequently updated Web pages or in case your Internet connection is something less than always connected. The

FIGURE 7. Citation Data Scraped from the Regent University Library Catalog

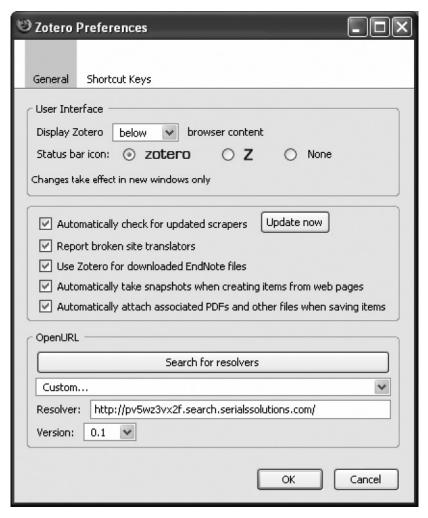


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option to configure an OpenURL resolver is also available in the Preferences screen (see Figure 8).

Future enhancements to the note-taking features are coming. "[Zotero] will also allow you to highlight and put sticky notes on archived HTML pages," said Trevor Owens, technology outreach coordinator for the

FIGURE 8. Zotero Preferences Window



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Zotero Project. "A researcher should be able to create and annotate her unique personal collections from within the common denominator across all such sites: the browser itself."

Generating a bibliography in Zotero is as simple as right-clicking selected items or an entire folder of items. Users can choose the desired citation style (APA, Chicago, or MLA), and output the bibliography in a variety of file formats. Likewise, Zotero can import and export citations from a variety of formats including BibTex, RDF, RIS, and Refer/BibIX.

Developed by the Center for History and New Media at George Mason University, the Zotero project has been funded by the United States Institute of Museum and Library Services, the Andrew W. Mellon Foundation, and the Alfred P. Sloan Foundation. Zotero's interface includes support for Chinese, Dutch, French, German, Italian, Japanese, Korean, Norwegian, and Serbian. A documentation wiki and discussion and development forums are also available on the Zotero Web site.

A beta version macro is available for users wanting to integrate Zotero citations into Word documents.<sup>11</sup> Developers are also planning to create ways of storing, syncing and sharing Zotero collections remotely–possibly by fall of 2007.<sup>12</sup> "This will open up opportunities for researchers to collaborate on projects using Zotero, send their collections to other free Web services such as mapping or translation sites, and receive recommendations and feeds of new resources that might be of interest," Owens said.<sup>13</sup>

The developers of LibX and Zotero have done a tremendous service to librarians and researchers everywhere. Librarians should in kind promote open source tools like these, which can assist library users in the research process and support libraries' place in the information market.

### **NOTES**

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