Personalizing the search: A Case Study

Introduction

With the advent of Google, Yahoo the search experience on the web is now well blended with simplicity and dynamism and a great deal of customization. Academic libraries often strive to implement the “simplicity” feature of the commercial search services. A key reason is libraries circumstantially choose to decentralize their online resources and search points. The primary intention of the academic library web site is to provide more and more resources online with a pool of search options. A great deal of time, effort and money had been invested in the “Online e-sources” region of the library web site (Battleson, et al). This situation led to the imbalance in the expectation of the patrons who mostly visit the library web site after actively browsing commercial search services.

This article examines the various search points available at the Resources page of the MSU library web site and at what extend “user customization” and “federated search” factors are considered in designing these search points and delivering the search results.
**Methodology**

By federated search I understand a simple search box which acts as a gateway to all search points - databases, links, web sites, online resources, etc. The search becomes all the more interesting when you have an option to personalize it - selecting desired databases, links, and e-resources and perform search only on those areas.

With this note, I started my research by logging in to the MSU library web site and then navigated to the resources page (http://www2.lib.msu.edu/resources/), but quickly noted down that login to the library page requires three clicks. The **Resources** page opened up a list of search points:

**E-resources, Indexes, Text and Links, Library Catalog, Articles, E-Resources, Indexes & Databases, Fast Facts, Research Guides, Course Guides, and Course Reserves.**

For initial research, I performed a couple of searches using **E-resources, Indexes, and Text and Links** options.

One of the links from the **Resources** page opened up an old **Resources** web site (http://www.lib.msu.edu/corby/reference/libresources.htm). The initial search also revealed how “federated search” is inconsistently implemented in certain areas of the **Resources** page. I started consolidating my observation and created a set of use cases for better illustration of the problem.

In order to perform a comparative analysis, I looked beyond MSU library web site. I started with the library web site (www.lib.utexas.edu) of University of Texas (UT) and came upon Google Scholar™ option right on the UT library home page. Further browsing through the web site introduced me to: library widget feature, resource categorization tool, federated search option, etc. I compiled my observation and marked them for the recommendation section of this report.

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**Case Studies**

**Case 1:** Using “**Find e-journals by title or ISSN**” option on the **E-Resources** page, search for journals on **Cold War**. Restrict your search within a **History** database.

**Tasks:** Type **Cold War** in the **Find e-journals by title or ISSN** text box and select **Title contains all words** from the drop-down menu and click **Search**. The search result displays a list of databases related to History as shown in Figure 1.
I started my search on LexisNexis Academic database and then moved on to Informaworld and lastly Project MUSE - Premium Collection database. Each database search retrieved 25 to 30 results. I performed a search on the search results from each database to get the best match.

**Case 2:** Using **Find Other E-Resources including Indexes** option on the E-resources page, search e-resources on Cold War.

**Tasks:** Type Cold War in the **Find Other E-Resources** text box and Click Search. The search result displays two types of resources: Research Guide on History, and ‘Texts and Links’ (as Miscellaneous resources) on Political Science as shown in **Figure 2**.

Selecting Cold War History **Research Guides** database opened up a list of bibliographic links, web sites, dictionaries and encyclopedias, etc as shown in figure 3. To pull up more e-resources on Cold War, I performed an extended search on each of the web sites listed under **Related Web Guides** section. Each link diverted me to their respective web sites, and I performed
searches on each of the web site. Some search results showed up information on subjects not relevant to History.

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<tr>
<th>Table of Contents:</th>
</tr>
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<tbody>
<tr>
<td>• Related Web Guides</td>
</tr>
<tr>
<td>• Reference Sources</td>
</tr>
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<td>• Primary Sources</td>
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<tr>
<td>• Special Topics</td>
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**Related Web Guides**

- American Foreign Relations Materials
- Freedom of Information Resources
- U.S. Military History: A Guide to Selected Resources of the MSU Libraries
- Viet Nam War/Second Indochina War: Resources in the MSU Library

**Reference Sources**

Figure 3 Search Results of Search

Selecting “**Intervention: the Use of American Military Force in the Post-Cold War World**” **Texts and Links** option as mentioned in Figure 2 displayed “page cannot be displayed”. I tried several times but the page never showed up.

**Case 3:** Log in to the MSU library web site. Search for articles on **Cold War only on History and Political Science databases. Do not include MSU catalog in your search.**
Tasks: Logging in to the library web site requires three steps as shown in figure 4.

Figure 4 Library Account Page

Click Resources link from the Library Account page. From the Resources page, click Articles. Type “Cold War” in the Quick Search for Articles text box and click Search. Following page is displayed as shown in figure 5. It displays search results from multiple databases using only one search box (on Articles page > Quick Search for Articles text box).

Figure 5 Search Results from Multiple Databases
Case 4: Log out from the library web site. Using the **Quick Search** option on the MSU library home page, search books on *Business Writing*.

**Tasks:** Presently there is no log out option on the library web site. Presuming that I have logged out automatically or my session has expired; I navigated to the library home page and tried to log in again. It took me to the **Library Account** page as shown in figure 4. Clicked **Sign out** and it took me to the log out page as displayed in figure 6.

To initiate a new search, I typed MSU library URL ([http://www2.lib.msu.edu/](http://www2.lib.msu.edu/)) into the address bar of the browser.

![Sentinel Single Sign-On Logout](image)

**Figure 6 Single Sign-on Logout**

Case 5: Log in to the library web site. Using the **Quick Search** option on the library home page, perform a catalog search on a book called *A Nuts-and-bolts Guide for Technical Writers*.

**Tasks:** I logged in to the library web site and performed a search on MSU catalog using **Quick Search** option, but the book is not available in the library. I decided to request this book through iLLiad, but there is no direct link from the search page to the **InterLibrary Services** page. I navigated to the **library home page > Interlibrary services > iLLiad**. One the iLLiad page I have to register and log in again to generate an iLLiad borrowing request.
## Findings

Above case studies contributed to following findings:

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<th>Case</th>
<th>Problems Identified</th>
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| **Case 1** Search an e-journal on *Cold War* only on *History* database | - Selecting a database at the beginning of the search is not possible  
- You cannot add a database as your search point and perform search only on that database  
- You cannot save search results from multiple databases  
- You cannot restrict your search within a database  
- The term **Find e-journals by title or ISSN** on the *E-Resources* page is misleading. This option looks like it searches for e-journals, but the result set showed up a list of databases |

| **Case 2**: Search for all the materials related to *Cold War* using **Find Other E-Resources including Indexes** option | - You cannot add search results as search points and perform search on those search points. Example: The *Cold History* reference guide opened up a list of web site links and each link needs to be explored separately  
- You cannot search all the databases, web sites, MSU catalog from a single search box |

| **Case 3**: Perform Quick Search for Articles on *Cold War* only on databases related to History and Political Science (excluding MSU catalog) after logging in to the library web site. | - This search option provides “federated search” feature. This feature is available from *Resources > Articles* page  
- Search using Research Pro™ tool is a good option. This search tool should be made available on different search points of the MSU library web site |

| **Case 4**: Log out from the MSU library web site and perform a search on *Business Writing* on MSU catalog | - Log out option/button is not available. It is accessible when you log in to Research Pro™ (see figure 5)  
- Once you log out from Research Pro™ you are forwarded to MSU catalog search page (http://researchpro-msu.iii.com:8131/search). Same feature should be implemented when you sign out from the *Library Account* page  
- Logging out from the *Library Account* page takes |
-you to an FAQ without any link to library home page
(see figure 6)
- To initiate a new search you have to type the library
URL into the address bar of the browser once you log
out
- Inter-library services require separate authentication
- iLLiad, ArticleReach Direct, and MeLCat require
separate registration and authentication

Case 5: Perform a search on MSU
catalog after logging in to the library
web site. If the book is not available
place a request through inter-library
services.
Recommendation

The case studies illustrated above portrays some basic problem areas in the MSU library website. However, there are problems which need quick fix while others need structural changes inside the library.

Decentralizing the online resources and search points are the basic hurdle behind implementing “federated search”.

“Federated or cross-database search tools now available on the market are the correct solution for unifying access to a variety of information resources. These tools can search not only library catalogs but also commercial abstracting and indexing databases, web search engines, and a variety of other databases, while often merging and de-duplicating (a.k.a. de-duping) results. In other words, the first step of search services” (Roy Tennant).

Efforts should be made in integrating all the search points and online resources. Library web sites should provide options for customizing and designing various search points.

Following are the recommendations in light of the problems discussed above.

One-Click Search

1. Organize/centralize the various search points by providing a simple search box for searching multiple online resources. Add this feature on the MSU library home page. This is the first step towards adopting a “unified search strategy” and “federated search”.

2. Let all the search options be visible to the user. Presently search options are either encapsulated or scattered throughout the web site. Need to “work towards bringing all search facilities, including non-library managed search facilities like Google Scholar, into one integrated search tool. As a first measure, ensure that users can perform both a direct catalog search and a search of the library web site from the home page” (Detlor and Lewis).

3. Provide a single interface/search box to search all the e-resource mentioned under Commonly Used E-Resources (http://er.lib.msu.edu/).

4. Provide options for adding subject specific search points to patron’s library account. If a patron is a History major, there should be an option where he can search databases, web sites links, etc specific to History from a single search box.

“Librarians could work with faculty to embed links to library resources (e.g., catalog, subject specific resource guides) directly into course management systems—either course-by-course or standardized across faculties or entire campuses. By doing so, students and teachers would always simply be a click away from the library. Students would be able to access seamlessly the e-reserves for the courses they are registered in and teachers would be able to identify and incorporate library materials (case studies, video clips, etc.) directly into their online course environments” (Detlor and Lewis). The categorization of resources on the basis of patron’s status is very important towards the success of the library. See how UT has implemented this feature at: http://www.lib.utexas.edu/foryou.html

5. Provide a single interface from where a patron can search iLLiad (OCLC database), Article Reach, MeLCat databases. Try to integrate all the search points at one place.

Personalize Search

1. Provide options for personalizing search points once a patron logs in to the library web site. Options like - mapping third-party databases to Quick Search option on the MSU library home page. “Customized search” saves a lot of time, in terms of searching several online catalogs, databases and navigating through more than one web site.
2. Provide options for personalizing the library home page once a patron logs in.

3. Customization of the library web site can be facilitated by implementing something like Administrator module or Account Settings option. With the help of similar module patron can:
   - Personalize the Library Account and library home page
   - Map multiple databases to a single search point
   - Add/remove third-party databases
   - Links databases to the Quick Search option and “defaults” his search to databases added under “Quick Search” option
   - Save search results retrieved from multiple databases
   - E-mail search results
   - Add subject databases to search points and perform search within the added databases
   - Creating alerts for the due dates
   - Choose template and personalize his library account page
   - Set and save all his account settings from a single interface

   “Personalized search” also helps in centralizing all the search tools at one place. “Once users have found relevant information, they also need the ability to manipulate the results. User interaction functions allow patrons to filter, sort, save, export, and email results. In addition to downloading and printing results, some interfaces also enable users to specify fields when doing so. Other salient functionality include the ability to record search results, preview content, and meta-alerts that notify users when search results change or new results appear” (Marshall, Shawn Herman, and Sri rajan).

4. Perform search within the saved search result and refer them back later

5. Map existing Alert services to his MSU library account

**Single Authentication**

1. Provide centralized single authentication or Single Sign-On (SSO) system that allows a patron to log in to all library services with a single click.

   “SSO is the mechanism whereby a single action of user authentication and authorization can permit a user to access all computers and systems where that user has access permission, without the need to enter multiple passwords” (Open Group).

   Yale’s Technology and Planning department designed Central Authentication Service (CAS) which works as follows: “when a user logs into Yale’s site, the Web service redirects them to CAS. CAS then authenticates the user, typically by asking for a password and verifying it with a back-end authentication service like Kerberos. CAS then returns the user to the application that originally requested authentication. Thereafter, whenever the user requests access to an application, CAS confirms the user’s identity without requiring the user to log in again” (From Success Story, Yale University).

2. Implement SSO on interlibrary Loan Service (ILS). In the present scenario after a patron logs in to the library web site and switches over to iLLiad he needs to first fill-in the iLLiad registration form and then authenticate on iLLiad page. MSU ID and password should let you log in to all MSU library services which you are authorized to. This problem is common across all ILS: MeLCat and ArticleReach Direct and iLLiad.

   *Academic library Web sites should share the same platforms and centralized user profile database as university administration, and be integrated with other campus portal solutions.* (Zhou)
3. Once the patron logs in to the library web site, user’s log in status should be displayed. Something like “You have logged in as ……..” Otherwise it is not clear whether you have logged in to the web site or your session has expired and you have been logged out.

**Educate the user**

1. Provide a quick reference guide, training materials on search services. Update training materials when the library search work flow changes or when any online resources moved from one part of the web site to another.

2. Add a small FAQ on the New Resources page related to the newly added online resources. Add screen tip on each newly added electronic resources.

3. Improve training materials, FAQ, online tutorials. Effort should be made in educating users on various search points, online resources, and their accessibilities. Add links to training materials, FAQ, online tutorials on the Resources page.

4. Update all help systems, FAQ, etc when there are changes on the library web site.

5. Conduct surveys (case studies can used for surveys), short discussion session with patrons on improving the library web site.

**Improve Navigation**

1. Logging in to the library web site should be simple. Presently, logging in to the library web site requires three clicks. This can be reduced to one click by adding the login window as shown in figure 7 to the library home page.

2. Add the log in screen as displayed in figure 7 to the library home page to avoid multiple clicks. *Well-designed navigation leads users through the web site (George Carole).*

3. Logging in to the library web site takes you to Library Account page. Add a quick search button on this page. Currently no such options are available. To start a new search, you have to navigate from Resources > Library Catalog.

4. Provide a log out button. Presently, you need to click Sign-out from the Library Account page and this is the only place from where a patron can log out. After logging out you are forwarded to the Sentinel Single sign-on Logout page as shown in figure 5. This is a stand-alone page. Remove the Sentinel Single sign-on Logout page as this service is no longer functional.

   Update the page and add a link to the MSU library home page. Presently there is no link on this page which takes you to the library search interface or home page. Provide a Quick search interface to allow search even after a patron has logged out. This feature is useful for a user who wants to search MSU catalog without logging in to the library web site.
5. Add a log out or sign out button and this button should be visible from all the points/pages of the library web site after a user logs in.

6. Clearly label the **Quick Search** option on the home page and specify that it searches only MSU catalog.

7. Following are the important services offered by MSU library and must be moved to a place where it is visible for quick access. Provide a customization option on the page which allows the patron to add any or all of the following services to his account and perform search using all or any of the following services:
   - Alert Services
   - Citation Tracking & Journal Metrics in ISI Web of Science
   - Finding Dissertations and Theses
   - Hot Topics
   - Subject Specialists
   - Faculty Services

8. Provide clear navigation paths. Add “Bread crumbs” which helps in quick navigation.

9. There are two links on the library home page for logging in to the library account. Delete one of them.

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**Figure 8 MSU Library Home Page**
Terminology

1. Terms like **Find e-journals by title or ISSN, Find Other E-Resources** are misleading. These terms don’t explain whether it is a catalog search or database search. Rename them to **Search e-journals database by title or ISSN** and **Find Other E-Resources database** respectively. Use meaningful search descriptors so users know what source files (the catalog, the Web pages, etc.) are being searched. (Detlor and Lewis)

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<thead>
<tr>
<th>Electronic Resources</th>
<th>Research Help</th>
<th>How To...</th>
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<td><strong>Find Other E-Resources including Indexes</strong></td>
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*Figure 9 Search points on E-resources page*

2. Rename the “**Commonly Used E-Resources**” section on the **E-resources** page. In the popular commercial search sites, the term “e-resources” is often used as “databases”. Use terms which are popularly used on other commercial search sites. Refer sites such as Google, Google Scholar, Yahoo, etc. Refer to the standard lingo prevalent among libraries. 
“The use of mouse over and the creation of online glossaries to de-mystify some of the most common terms. (For ideas, see “Library Terms that Users Understand,” http://www.jkup.net/terms.html). The “Library Lingo May 2006 25 5Database” offered by Washington State University was particularly impressive” (Detlor and Lewis).
“Use consistency when determining design issues. “Meet user expectations by following conventions established by other major sites” (Bevan, n.d.). Sites such as Google, Amazon, Yahoo and even the libraries’ search engines and databases drive users’ expectations”. - Carole A. George
Conclusion

The case studies and findings provide recommendations such as implementing customized federated search, providing a clear log in and log out option, adding clear navigation paths, providing standardized terminology, etc. However, improving a library web site is an ongoing affair. It requires continuous adjustments to the changes inside the library and trends of the outside world. Considering the challenges posed by the commercial search services everyday academic libraries should assume a new role. It should no longer function as a stand-alone academic web space providing lists of available materials. Given the increasing prominence of the virtual environment, the transformation of the library Web site necessitates some transformation of the library itself (Detlor and Lewis). While assuming a newer role, academic library should act as the major “information seeking” ground, a center of excellence for information of the university. Academic libraries should adopt greater responsibilities and act as the knowledge base for the university, a key resource center for the academic research, and sole “information seeking” ground for the patron. Academic libraries package information in ways that meet user needs, make information seeking the central focus of Web site design, support rich customization features, invest more resources in interface design, and support information “use” rather than just information “access.” (Detlor and Lewis).

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