

Sample usability report: A review of the user interface of the MLN online catalog

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Introduction

This is a review of the user interface (UI) of the Minuteman Library Network (MLN) online catalog. While the system is powerful, problems in the UI may limit access to the information it contains. The report contains examples from the catalog with explanations of the problems I found and brief recommendations for fixing them.

I am a member of the Board of Library Trustees in Belmont, but I wrote this as a patron and a UI design consultant. My business is designing and evaluating Web applications to meet user needs and to make software more intuitive for users. I have been working with Web applications since their beginning; for more information about my background, see www.user.com.

Note to clients: I wrote this report on my own to offer suggestions to MLN. Your report will have more detail. It will also have sketches of design solutions and ranked recommendations to show you which problems are most important.

Executive summary

The online catalog is a great resource, but its user interface (UI) has problems common to many Web applications. Many of them will cause confusion and limit access to information.

This brief review includes problems in these categories:

- > Specifying searches: Most computer users have problems specifying searches, so the catalog UI must make it as easy as possible.
- > Conceptual model: The UI does not match the conceptual model that a typical patron has of a library catalog. Better organization of information and better visual design would help patrons understand search results and other screens.
- > Terminology: The system uses many technical terms that users will not understand. Software should always employ the users' terminology.
- > Consistency: Some important features are not always present and the system does not always follow Web standards. Users need this consistency to learn and use software.

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- > Serendipity: One of the joys of the old card catalog was finding things by surprise; that's not likely to happen in the online system.

Types of users considered in this report

While the online catalog is a powerful tool with a large database, I believe that the design does not reflect the needs of many of your users. This will lead to people not being able to take advantage of all that it offers.

There are many types of people who use the MLN catalog, from library staff to patrons. Patrons range from those who are very comfortable with Web software to those who are quite unsure of their abilities. Many patrons use the catalog infrequently and have to relearn the UI each time.

Another relevant group of library patrons includes people with *no* computer experience. Those people are probably completely unable to use the catalog. A novice-level UI might help some of them get started on their own.

Problem: Specifying searches

Usability professionals recognize that many computer users, especially novices, do not understand search well enough to specify queries and interpret the results. That makes it hard to design any database product for the general public.

Example: This is approximately what appears at 800x600 resolution, which many patrons use in libraries or at home. There isn't enough information for novice users and not enough alternatives for experienced ones. The MLN banner takes up a lot of room that could be used to display the search options, which are hidden from view.

Recommendation 1. Provide some tips to remind patrons that author names must be "lastname, firstname".

Recommendation 2. Provide easy ways to limit a search by media (e.g., audio book on CD) or collection (e.g., juvenile) and other attributes. It is possible to do that, but the choices may be hidden (at typical screen resolutions) and they may not be clear (because of terminology like “advanced keyword”, “material type”, etc.).

Recommendation 3. The first thing a user wants to do when this page appears is specify a search. Unfortunately, the first thing the page does is redisplay itself so that quick typists find their selections erased. Eliminate this redisplay.

Recommendation 4. Reduce the size of the MLN graphics to allow more above-the-fold space for search parameters and tips. While this acts as the home page for the catalog, the page may be viewed many times by each patron and banner takes up too much room. It may also visually obscure the navigation bar below it.

Problem: Using the patron’s conceptual model of the database

Once a search query has been processed, users have to look through the results to find their desired item. The MLN system has a tremendous collection, which means that the result list must be compact and easy to read. It must also reflect the patron’s conceptual model of library items and how they relate to each other. I think there are problems in the model used in this UI.

These examples show a problem that is sometimes called “pogo sticking” – users have to bounce back and forth between pages to get the information they need. The problem is caused by result lists with too little information or the presentation of information in a way not familiar to patrons. This wastes their time and puts unnecessary loads on library PCs and MLN servers.

The screenshot shows a search interface with a search bar containing the text "Cascading style sheets : designin" and a dropdown menu set to "All Locations Collection". Below the search bar are buttons for "Save Marked Records" and "Save All On Page". The search results are displayed in a table with columns for "Num", "Save", "TITLES (1-2 of 2)", "Medium", and "Year". Two entries are listed for the title "Cascading Style Sheets : Designing For The Web" by Håkon Wium Lie, Bert Bos. The first entry is dated c1997 and the second is dated 1999. Both entries include a "Book" icon.

Num	Save	TITLES (1-2 of 2)	Medium	Year
1	<input type="checkbox"/>	Cascading Style Sheets : Designing For The Web Håkon Wium Lie, Bert Bos.	Book	c1997
2	<input type="checkbox"/>	Cascading Style Sheets : Designing For The Web Håkon Wium Lie, Bert Bos.	Book	1999

Example: The search result above shows two entries for the same title. I expect that patrons think of this as one item that there are two versions of rather than two separate entries in the catalog.

Recommendation 5. It is probably better to list this as one title with two “versions”. Usability testing is needed to explore issues about users’ conceptual models of the collection.

KEYWORD All Locations Collection

Your search query has been changed... Tried: (diet and for and a and small and planet)
Sorted by Date

Num	Save	KEYWORDS (1-5 of 5)	Medium	Year
1	<input type="checkbox"/>	Hope's edge : the next diet for a small planet / Frances Moore Lappé and Anna Lappé.	Book	c2002
2	<input type="checkbox"/>	Diet for a small planet / Frances Moore Lappé ; illustrations by Marika Hahn.	Book	1991
3	<input type="checkbox"/>	Diet for a small planet / Frances Moore Lappé ; illustrations by Marika Hahn.	Book	1991
4	<input type="checkbox"/>	Diet for a small planet / Frances Moore Lappé ; illustrations by Marika Hahn.	Book	1982
5	<input type="checkbox"/>	Diet for a small planet / Frances Moore Lappe ; illustrated by Kathleen Zimmerman and Ralph Iwamoto.	Book	1975

Example: There's no way to tell what the difference is between items 2 and 3 (above) without examining each listing in detail. That requires too much clicking, thought and time.

TITLE All Locations Collection

Result page: 1 [2](#) [Next](#)

Num	Save	TITLES (1-12 of 17)	Year	Entries 48 Found
1	<input type="checkbox"/>	Fiddler On The Roof		22
2	<input type="checkbox"/>	Fiddler On The Roof 1964 Tradition	p1996	1
3	<input type="checkbox"/>	Fiddler On The Roof Chinese	1986	1
4	<input type="checkbox"/>	Fiddler On The Roof Libretto		2
5	<input type="checkbox"/>	Fiddler On The Roof Libretto English	c1964	1
6	<input type="checkbox"/>	Fiddler On The Roof Motion Picture		4
7	<input type="checkbox"/>	Fiddler On The Roof On The Screen	c1971	1
8	<input type="checkbox"/>	Fiddler On The Roof Original Broadway Cast		2
9	<input type="checkbox"/>	Fiddler On The Roof Original London Cast Recording	p2001	1
10	<input type="checkbox"/>	Fiddler On The Roof Original Motion Picture Soundtrack	p1984	1
11	<input type="checkbox"/>	Fiddler On The Roof Original Motion Picture Soundtrack Recording	p2001	1
12	<input type="checkbox"/>	Fiddler On The Roof Piano Vocal Score English	c1965	1

Example: Some rows in this result set represent groups of items while others are individual items. It's hard to tell that by looking. Some items are located in multiple places. That can be helpful, but it makes it difficult for patrons to know if they've looked at all of the possibilities.

Recommendation 6. Find out how patrons think about the relationship of library items to each other and present them that way.

Recommendation 7. Organize search results better to help patrons navigate the collection and complete searches. For example, group together items that only differ by publication date to make it easier to scan result sets. This is a complex problem that will require some research.

Recommendation 8. When search results include similar items, highlight the differences to make it easier to understand the list.

Recommendation 9. Better visual design, including layout and graphics, will help patrons understand all of the information in the catalog, especially the search results.

Problem: Knowing what to click on

Author	Friedman, Allan Jay.	
Title	A.A. Milne's Winnie-the-Pooh;	
Publication info.	Chicago, Dramatic Pub. Co. [1964]	
Location	Call No.	Status
WELLESLEY/Children's	JUVENILE 822 Sergel	AVAILABLE

Example: The author name, call number and library links are useful, but probably just to a small number of users and should stand out less.

Recommendation 10. Web users scan pages quickly looking for the next link to click on, so secondary choices should be more subtle than primary ones. This will help patrons find what they want most of the time.

Problem: Unfamiliar terminology

Library patrons do not understand library terminology and will be confused by it.

Search by: <input checked="" type="radio"/> Keyword <input type="radio"/> Author <input type="radio"/> Title <input type="radio"/> Journal Title <input type="radio"/> Subject
--

Example: The search choices give patrons a good level of control, but the wording may be confusing. Most people probably don't know the difference between "keyword" and "subject". "Subject" appears to use a controlled vocabulary, which is unfamiliar to most patrons. I suspect that even "keyword" is not clear to many people.



While the features are useful, this tool bar is difficult to use. Examples:

- > No one will be able to predict the difference between "New Search" and "Another Search" because these labels are not descriptive of the functions.
- > "Save Records" is unclear – what is a record and where is it going to be saved? "MARC Display" uses technical terminology that will not be clear to patrons.

- > Search history is a helpful feature, as is letting users change the search parameters right on the page. The *Modify search* button is really more than modifying the search – it’s the advanced search feature and should be so labeled.
- > In the example under *Problem: Punctuation should not affect search results*, an error message includes the prompt “Search as Words”. That’s a helpful feature, but its meaning is not clear from the text.

Recommendation 11. Using technical terms (e.g., “keyword”, “subject” and “MARC”) will confuse patrons. All on-screen text should use patrons’ vocabulary, not technical wording.

Recommendation 12. It is great to offer technical options like searching by subject terms and MARC displays, but they should be less prominent to protect novice users.

Recommendation 13. Labels should be clear enough so patrons immediately know how one command differs from another and know what they will get when they click on something.

Problem: Inconsistent UI

The user interface must be consistent. There may be reasons for commands to be removed from some screens, but users won’t understand why. Missing commands are confusing.

The screenshot shows a library search interface. At the top, there are several icons: 'New Search', 'Save Records', 'MARC Display', 'Return to List', 'Modify Search', and 'Another Search'. Below these is a search history dropdown menu. The search bar contains the text 'design and thing' and is set to 'All Locations Collection'. A 'Search' button is to the right. Below the search bar, it says 'Sorted by Date' and 'Record: Prev Next'. The search results show the following information:

Author: [Davidsen, Susanna](#)
 Title: **Web site design with the patron in mind : a step-by-step guide for libraries / Susanna Davidsen and Everyl Yankee.**
 Publication info: Chicago : American Library Association, 2004.

Below this is a table with the following data:

Click on the following to:		
Table of contents		
Location	Call No.	Status
FRAMINGHAM/Adult	005.7 Davidsen	Out

Below the table, there are two lines of text:

1 copy being processed for FRAMINGHAM.
 1 copy ordered for WALTHAM on 06-29-2004.

The bottom section of the page contains detailed information about the book:

Description: xi, 114 p. : ill. ; 26 cm.
 Bibliography: Includes bibliographical references (p. 109-110) and index.
 Contents: Yet another book on Web **design**? -- Redesigning for users : the basics of usability and user-centered **design** -- Redesigning : an overview -- The vision **thing** : goals for your Web site -- Patrons : who they are -- Tasks : understanding what patrons want to do -- Library objects -- **Design** or redesign? -- The process of redesigning -- Evaluating and testing.
 Subject: [Library Web sites -- Design.](#)
 Added author: [Yankee, Everyl.](#)
 ISBN: 0838908891

Example: The *Request* button is missing from this screen, and there’s no explanation. I looked around the page to see if it had moved. It’s not clear if the copy listed for Framingham is the same copy that’s listed as “being processed”; if so, maybe I can’t request it because it’s not

available yet. But that's not clear and patrons shouldn't have to think about reasons for missing commands.

Recommendation 14. The UI must be consistent. Users will be confused by commands that are sometimes missing. Instead of removing the command, include a dimmed version of the button with an explanation of why it's unavailable. Another alternative is to replace the button with text such as "Request not available. Click for more information."

Problem: Punctuation should not affect search results

Many titles contain punctuation. Patrons may be unsure how the system handles it.

The screenshot shows a search interface with a search bar containing "Curried Favors: Family Recipes for South India" and a dropdown menu set to "TITLE". The search results show "No matches found; nearby TITLES are:" followed by a table of results. The table has columns for "Save", "Year", and "Entries". The results include "Curriculum Vitae Tango Arr" (p1995, 1), "Curriculum Vitae Y Propuestas De Colaboracion" (1993, 1), "Currie Lectures 1964" (1966, 1), "Curried Favors Family Recipes From South India" (c1996, 1), "Currier And Ives" (4), and "Currier And Ives A Manual For Collectors An Alphabetical Catalogue Of All Known Prints By C Currier" (c1931, 1). A message states: "Your entry **Curried Favors: Family Recipes for South India** would be here -- [Search as Words](#)".

Save		Year	Entries
<input type="checkbox"/>	Curriculum Vitae Tango Arr	p1995	1
<input type="checkbox"/>	Curriculum Vitae Y Propuestas De Colaboracion	1993	1
<input type="checkbox"/>	Currie Lectures 1964	1966	1
Your entry Curried Favors: Family Recipes for South India would be here -- Search as Words			
<input type="checkbox"/>	Curried Favors Family Recipes From South India	c1996	1
<input type="checkbox"/>	Currier And Ives		4
<input type="checkbox"/>	Currier And Ives A Manual For Collectors An Alphabetical Catalogue Of All Known Prints By C Currier	c1931	1

Example: The result above is from a search by title for "Curried Favors: Family Recipes for South India". It turns out that there is an exact match, but the system shows an error message instead because the listing does not include the colon. This will cause patrons to miss what they are looking for. (This may be a database error, because it works for similar titles.)

Recommendation 15. The system should ignore punctuation when comparing search parameters with database entries. Another possibility is to take punctuation into account only if the user specifies it in the query.

Problem: Need for increased compliance with Web standards

The screenshot shows a search interface with a search bar containing "winnie the pooh" and a dropdown menu set to "TITLE". The search results show "No matches found; nearby TITLES are:" followed by a table of results. The table has columns for "Save", "Year", and "Entries". The results include "Curriculum Vitae Tango Arr" (p1995, 1), "Curriculum Vitae Y Propuestas De Colaboracion" (1993, 1), "Currie Lectures 1964" (1966, 1), "Curried Favors Family Recipes From South India" (c1996, 1), "Currier And Ives" (4), and "Currier And Ives A Manual For Collectors An Alphabetical Catalogue Of All Known Prints By C Currier" (c1931, 1). A message states: "Your entry **Curried Favors: Family Recipes for South India** would be here -- [Search as Words](#)".

Save		Year	Entries
<input type="checkbox"/>	Curriculum Vitae Tango Arr	p1995	1
<input type="checkbox"/>	Curriculum Vitae Y Propuestas De Colaboracion	1993	1
<input type="checkbox"/>	Currie Lectures 1964	1966	1
Your entry Curried Favors: Family Recipes for South India would be here -- Search as Words			
<input type="checkbox"/>	Curried Favors Family Recipes From South India	c1996	1
<input type="checkbox"/>	Currier And Ives		4
<input type="checkbox"/>	Currier And Ives A Manual For Collectors An Alphabetical Catalogue Of All Known Prints By C Currier	c1931	1

This is just one example where clicking the *Enter* key has no effect, even though it does in most Web forms. Many patrons, especially those with advanced computer skills and those with motor difficulties, prefer to not use a mouse. Enabling standard Web conventions is helpful to these people.

Recommendation 16. Unless there is a compelling reason (that makes immediate sense to patrons), be consistent with Web UI standards. Here, it should initiate the search.

Problem: Difficulty in saving and sharing information

Users have a need to save and share information, such as search results.

Example: While individual items have unique URLs, the result of every search seems to be the same: <http://library.minlib.net/search~/a?a>. That prohibits saving and sharing.

Recommendation 17. Every page should have a unique URL to enable patrons to save and share information.

Problem: Comparison with the card catalog

The automated system is a great advance over the old paper catalog. There were some benefits of card-based system, however, including the serendipity of finding interesting items while browsing. While the same information is in the Web-based system, this kind of discovery is not likely to happen.

Recommendation 18. Although users can browse by call numbers, they are not likely to because that feature is hidden. Making browsing available and enjoyable is another complicated design task, but is worth exploring.

Summary

This report points out a number of problems in the user interface to MLN's online catalog, which is a great resource to staff and patrons alike. There are many other problems, including layout and graphic design, the difficulty in getting to and using the advanced search feature, and the difficulty in limiting a search to media types. These problems make it hard, perhaps impossible, for patrons to use the system and find what they need. This raises frustration and increases the workload of the reference staff.

I believe that senior citizens are affected more than others. They are more likely to have few or no skills with computers, thereby disenfranchising them from the library. This hypothesis has been supported by informal discussions with patrons and those who work with seniors.

This is admittedly an unsolicited report, but I felt that it was important to point out significant problems in this important software. Next steps include:

- > Gathering data through surveys to collect large amounts of feedback.
- > Running usability tests to get detailed feedback from users of the catalog.
- > Using information from patrons and others to consult with Triple-I on ways to improve the UI to the catalog.