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# MLibrary Mobile Application Design

## – Improving the Efficiency of Discovering Resources

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**Introduction**

MLibrary is the library system of University of Michigan. A variety of departmental libraries and resources centers are included in this huge library system. The resources and materials in those collections are usually accessible to the entire campus as well as public community. The University of Michigan Library offers different services to the students, faculties and community members, especially to satisfy their needs of book searching, reserving and delivering.

The current mobile site of MLibrary is designed based on the desktop site. It shares some of features with the desktop site and provides similar services to the users. However, current mobile site fails to fully embrace the features of the mobile devices, and it does not cater for mobile users very well, which hinders the enlargement of mobile user group. Through the design process, we examined the barriers of using the mobile site and redesigned the system that better assists the users in accessing useful information about books and other resources in a more elegant manner, so as to increase the usage of mobile library system among the community.

**Design Problem**

The research questions of our project focus on how to improve the efficiency of finding resources and accessibility of resources. From the interviews with five

current mobile site users, we found out that the search results are shown only in texts without any cover images. It's very hard for users to focus on those search results especially when they are on the go.

Another issue is that the system would not always put the latest version of the same book on the top. It is sometimes misleading. Different editions of a book are considered and demonstrated as different items, and they may appear not next to each other in the search result list. This impedes the efficiency to find a book among all the search results. Besides, the result page does not offer the sorting options based on dates as the desktop site did. Such function simplification might be a good solution for the simple user interface design for mobile context, but it neglects the demand of some users' preference as sorting by publish dates instead of relevance, which is considered by users to be a good way to reorganize the search results to find expecting items quickly.

Additionally, the system fails to provide enough guidance for users to access a particular copy in a particular library. From our interviews, three interviewees reflected that: since MLibrary is a huge system of libraries, it is not always easy to figure out the locations of some libraries shown on the item page, and sometimes they have to type some of the libraries' names in Google Map in order to determine which library is the closest one to get certain book.

Last but not least, the current My Account section does not provide the mobile version as other sections do. It will direct to the desktop site automatically after My Account button is clicked. Although they can get access to all the features and functions of the account page, the readability and usability are severely harmed.

### **The Target Audience**

The target audience of the MLibrary mobile application design is primarily the students and faculties of University of Michigan who utilize the application to discover resources and borrow books from the libraries on campus. During the user group research we verified the assumption that they interacted with the search result page and book detail page most frequently. What they want to gain from the system are the accurate and well-organized search results, and the detailed information about getting the books by themselves, or by letting the librarians to deliver the books.

### **The Design Approaches and the Design Rationale**

To improve the efficiency of discovering resources in MLibrary, the information visualization is applied on the search result page in the mobile application design. The cover picture was added to each of the search result, so users are able to recognize if their desired resources are in the result page or not very quickly without reading the whole contents line by line. For the additional facilitation, the result page offers the alternative of thumbnails display, which upgrades the level of information visualization and supports the quick search by cover browsing. The availability information shown right below the thumbnails also convey the value to users efficiently and effectively. This design approach of showing accessibility satisfies the specific demand of finding not only recent published but also available resources at libraries.

Considering the multiple edition issues for books in the search result page, in order to keep the accessibility for each of the edition, we didn't make any changes on the search result page. Instead, the recommendation for other available editions was demonstrated in the book

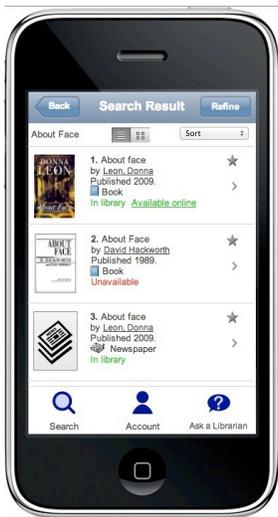


Figure 1 Search Result Page



Figure 2 Library Map View

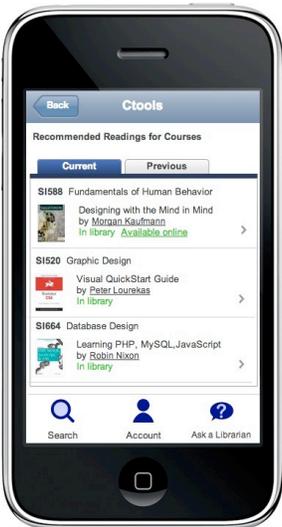


Figure 3 Recommendation

detail page. In this way, different editions of one book are categorized in an efficient way, according to users' demands. The users can get the access to each particular edition easily without switching between the result page and each different detail page back and forth.

At the same time, adding the sort button and providing sorting alternatives other than relevance is regarded as another design approach in terms of the advanced search option. Sorting by popularity and newly published within the sorting options might facilitate the customized search according to users' needs and thus help users discover their desired book quickly while interacting with the mobile application. Therefore, the advantages of using mobile application of MLibrary are more outstanding.

To enhance the accessibility of the resources, the location information of the libraries is provided along with the "get this". Users can switch between the list view and the map view by clicking on the right button. Since all of the libraries that have the available books will show up on the map view, users can find the closest one conveniently without searching for location information on a separate map application.

For the better service, a creative function of academic books recommendation is added to the system. By connecting MLibrary and Ctools, the system can gather more information about the courses that users are enrolled in, thus it is able to recommend relative books or other resources to users, which facilitates the process of discovering unknown resources for users.

Finally, the desktop site of my account is removed from the mobile application and an adjusted page is added to this section. The readability and usability are highly

improved and thus users are able to keep track of the books that they are interested everywhere.

### Outcome

To demonstrate our redesign, several versions of prototypes were accomplished by now: (1) low-fidelity prototype with paper sketching and POP app (<http://popapp.in/w#!/projects/512280807bed483c470005de/preview/iOSITKbO44xU9rvjcjXdd6VH?alt=1>); (2) hi-fidelity prototype on Axure (<http://share.axure.com/3W0XGE>); and (3) hi-fidelity prototype coded in html/css/javascript that can be automatically adapted to different viewing environments. It can be published as a mobile site or encapsulated into a mobile app. Please visit our website at <http://bromi2013.wordpress.com> to see more.

### Conclusion

The conceptual idea about the MLibrary mobile application design is to create better user experience for the students and faculties who need to discover resources in the libraries on campus. Our design team concluded the findings from the user interviews and research, then come up with the feasible improvements that could be made to the current mobile site. The redesign focuses on improving the efficiency of discovering resources and providing accessibility to the resources effectively. It utilizes the features of mobile devices to satisfy user needs in mobile context - quick searching and quick checking on status.