Mobile Devices and Their Impact on Library Services

As e-readers and mobile devices increase in popularity, libraries are finding it necessary to adapt their technology and services to meet new demands and patron expectations. As patrons embrace these new technologies, so too must libraries and many are finding innumerable benefits to both patrons and staff.

Mobile-Friendly Websites and Catalog Features

For years, libraries have been focused on providing service and programs to patrons who physically enter their building, and that focus has changed in recent decades to providing patron access via the internet. In recent years, however, that prospect has had to evolve as patrons are now accessing the library on smaller and more mobile screens.

This has necessarily led to changes in the library website. These changes vary according to the library's preferences and budget, but generally include providing a catalog interface that is optimized for mobile devices. Sometimes this comes in the form of a dedicated mobile app, but typically is a part of the library's website adopting a Responsive Web Design, or RWD, or through a third-party solution. The primary difference in this mobile designed catalog is that they tend to be optimized for simple searches and do not readily include advanced search options, such as faceted browsing, detailed metadata and library account features. This is due to the nature of mobile devices and the constraints of the smaller space available in mobile design. (Keck, 2012)

As library services have advanced to include phone and email reference services, many libraries have begun introducing "text-a-librarian" service that make use of standard mobile messaging. This allows librarians to provide service wherever they may be in the library through use of their own mobile device (often owned by the library itself). Other libraries contract with third-party services that can route text messages though instant messaging protocols, allowing librarians to work from their desks while patrons experience the immediate notification of a response on their mobile devices. Web-based chat forms are also increasing in popularity for online reference interviews. These services all allow patrons to communicate with the library in forms they are comfortable with and use regularly in everyday life. (Keck, 2012)

Other features are often being added to library websites to increase functionality in the mobile world and create additional conveniences for patrons. Mobile-optimized databases and other resources are just the beginning. Many libraries now offer a "Text Call Number" feature in their online catalog whereby patrons who locate an item of interest in their catalog can click a button on the page and have the call number of that item texted directly to their mobile phone. They can then go directly to the stacks to locate their item without worrying about having incorrectly transcribed information. (Muchow, 2013)

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Stand-Alone Apps for Mobile Devices

Additionally, many users are learning to adapt other mobile capabilities for use in libraries, and software designers are helping. Numerous mobile applications have been written for library use, both for patrons as well as library staff functions and these “apps” are gaining in popularity. Availability is typically dependent on what type of device it is intended for, but many of the more popular apps are available for nearly all standard mobile operating systems.

Of course, there are the usual apps for reading ebooks, Kindle, iBooks, Nook, Kobo, etc. Many users are also using their mobile devices to listen to digital audiobooks, often using built-in audio technology, but there are also many apps designed for specific library functions and user demographics.

Apps for Patrons

Overdrive: ebooks & audiobooks and *Libby*, both by Overdrive, Inc., are applications designed specifically for integrating with a library’s ebook and e-audiobook collections. They allow patrons to browse a library’s collection and check out digital items in chosen formats directly from their mobile devices. Libby is a newer version and intended to be viewed a simplified version of the Overdrive app, though both maintain the same basic functionality. (Apple iTunes, 2017 and Google, 2017)

BARD Mobile, by the Library of Congress, was written specifically as a service of the National Library Service for the Blind and Physically Handicapped. It provides access to talking books from the NLS Braille and Audio Reading Download (BARD) site. BARD contains nearly 65,000 talking books, magazines, and braille music scores. Users must be registered with a Braille and Talking Library through the National Library Service for the Blind and Physically Handicapped to download materials. (Apple iTunes, 2017 and Google, 2017)

Access My Library by Cengage Learning is an application that provides Discovery Services on mobile devices, even for libraries that do not currently offer their own discovery layer. Users can search for libraries, refined by library type, name or address, and then use the app’s Resource search to locate articles, databases, and ebooks offered by that library. Materials can then be access from participating libraries directly through an embedded proxy server. This application is limited to Gale resources and is cumbersome on smaller screens, but serves as a convenient portal for users of tablets and other larger mobile devices. (Apple iTunes, 2017 and Google, 2017)

Library Books by Harold Chu is an older, yet simple application that allows users to track what items they have checked out from the library. The basic premise of this application is to prevent late fees by allowing patrons to keep track of all items out from multiple items in one place, with

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pop-up notifications alerting the user to nearing and past due dates. Support for this application ended in February of 2014, though basic functionality remains and can be useful for patrons who frequent multiple library systems. (Apple iTunes, 2017)

Accelerated Reader AR Points is an application on the Google/Android platform designed to integrate with the Accelerated Reader program popular with schools. The app allows searching by title, author, and AR quiz number to return information reading level of the requested book, as well as the number of points the associated quiz is worth in the reading comprehension program. For students (and parents) searching for books to complete a specific reading goal or assignment, mobile access to this information in the lirary stacks is of great benefit. (Google, 2017)

Book Scanner App by If Then Dev, LLC is offered on the Apple/iTunes platform for a small fee. Like Accelerated Reader AR Points, Book Scanner App allows manual searches on title and author, but also integrates with the user's cameraphone to scan ISBN barcodes and then saves the resulting information in a list format for later reference. (Apple iTunes, 2017)

YALSA's Teen Book Finder by YALSA is an application designed to help readers access titles honors by the Young Adult Library Services Association, a division of the American Library Association. The app allows searches by title, author, genre, award, or booklist. It integrates with social media to allow users to share their reading habits on Facebook and Twitter, as well as using Location Services and online catalogs from participating libraries to locate copies in local libraries that are available for checkout. (Apple iTunes, 2017 and Google, 2017)

Book Crawler by Jaime Stokes is another Apple application that is designed to help locate book recommendations. It integrates with Goodreads.com reviews and also uses Location Services to direct users to participating libraries that hold copies of the selected book. This application allows users to build a custom database of owned items using manual submission, scanning of ISBN barcodes with the mobile device's camera, or bulk import of CSV files. The database is then saved to the "cloud" for access from other devices. (Apple iTunes, 2017)

iBookshelf by Varietas Software, LLC is also designed to help patrons create their own databases of books. Additional data fields are available to record information when users loan personally owned materials to others, as well as allowing users to create a "wish list" of to-be-read materials. The app includes social media integration and a rating system to help populate book recommendations. There is a small fee for this application, or users can choose to use *iBookshelf Lite* for the same functionality with advertisements. (Apple iTunes, 2017)

Numerous additional applications exist that serve as QR Code readers. These applications allow users to scan a small code, like the one pictured to the right, in order to direct them to a specific website where they can find additional information. This can be useful for libraries when

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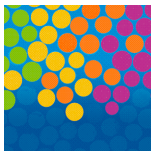
creating signage to direct patrons to longer texts on programs, policies and specific location information, such as local and historical data or meeting room reservation sites. (Alexander, 2014)

Apps for Library Staff

Many patron-focused are apps are considered invaluable by front-facing library staff, though there are numerous other applications being written specifically for library management of workflows and materials. The usefulness of these applications is primarily dependent upon systems already in place within each library, but in the right setting, can easily be adopted to help conserve staff time and resources and should be considered when investigating new system possibilities.

Mobile Worklists by Innovative Interfaces, Inc., is a mobile application on the Apple platform that allows library staff to directly integrate with their Sierra Integrated Library System (ILS). Materials lists can be created in the desktop application and then imported to the mobile application using a site code specific to the library system. Conversely, lists can be generated on the mobile site using the mobile device's camera as a barcode scanner, and then exported to the library's site server for use in the desktop application. This app helps save time and resources during weeding and inventory projects. (Breeding, 2015 and Apple iTunes, 2017)

Atriuum Mobile Interface by Book Systems, Inc. is an application that is designed to allow library staff to handle basic circulation tasks directly from mobile devices. These tasks include checking items in and out of the library system, and checking an item's status and circulation history, without the need for returning to the circulation desk. This application works with Book System's Atriuum Integrated Library System. (Apple iTunes, 2017 and Breeding, 2006)



Digby™ by OCLC® is another mobile application designed for library staff to integrate with their library systems. This application integrates with OCLC's WorldShare Management Services and allows for pulling lists by scanning barcodes and scanning used items before reshelving without needing to be returned to the circulation desk, among other functions. The app was designed for use by student workers and thus deliberately limits functionality in order to reduce errors due to complicated settings. (Apple iTunes, 2017 and Google, 2017)

Booktracks AIM by Book Systems, Inc. is designed for library inventory tracking. This application utilizes a mobile device's integrated camera to scan items and mark them as seen in the inventory system. Sounds can be enabled to notify the inventory taker if an item needs to be evaluated or set aside for further review. (Apple iTunes, 2017 and Google, 2017)

Other non- library-specific applications are also useful for library staff from an education or business management viewpoint. These include citation generators, calendar applications, file-sharing applications, and time- and resource-tracking apps, but are outside the scope of this paper.

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Library Lending of Mobile Devices

The next obvious step for libraries as they grow their offerings of various types of lendable items it to enable the physical lending of mobile devices. Many academic and metropolitan libraries have embraced this idea as an extension of lending laptops, but mobile devices come with an additional complication. Whereas laptops are programmed with multiple users in mind and can be easily reset to specified settings before being loaned to another patron, most mobile devices are not designed with that ability in mind. Additionally, most require accompanying items, such as chargers and protective cases, which must also be accounted for. Numerous libraries have documented their struggles and attempts to resolve all of these issues, and libraries new to the idea of loaning mobile devices are encouraged to consult other libraries' lending policies when designing their program.

Bishop Mueller Library at Briar Cliff University loans iPads in protective cases labeled with library contact information. iPads are checked out in bags containing a charger and microfiber screen cloth. The library began by setting up a library iTunes account with a gift card to limit future purchases and created a basic profile for the iPad to be lent. This profile was synced and copied to subsequent iPads in order to set a baseline to restore each device to upon return. Patrons are restricted from downloading new apps or making iTunes or App Store purchases by having the device locked to a library iTunes account. Users can make app suggestions and the library attempts to fulfill requests when possible. Upon return, the iPad is cleared and reset to the library's baseline settings. iPads are loaned via reservation rather than first-come-first-served and began with a four hour checkout period for students. This was extended to a two-day checkout period the following year, in hopes of allowing students more time to familiarize themselves with the devices. (Thompson, 2011)

The Central Medical Library in Münster, Germany chose to treat iPads as similar to a reference book, and only allow students one-day checkout periods. Initially, patrons used the devices primarily as a means of accessing online databases and ebooks and surveys showed that 60% found the devices useful. The driving principal behind this program was that the library was not only lending out "cool gadgets" but also providing users with "applications and the ability to build an expertise around these devices" in order to build a sustainable customer relationship between patron and library. Limiting the number of applications allowed on the device helps facilitate that by allowing library staff to be familiar with library-approved apps. (Obst, 2014)

As more and more libraries move toward offering checkout of these devices, third-party systems are being written and designed to help manage complicated issues, such as restoring software and physically managing the devices. Apple now offers a Mobile Device Management system designed specifically to allow businesses and educational institutions to manage large numbers of mobile devices. When purchasing iPads, institutions can enroll devices in the new system, which will allow for automatic device configuration through software called Apple Configurator. Libraries can then track the location of items through Find My iPhone and set them to Managed Lost Mode should a device go missing or fail to be returned. Once activated, Managed Lost Mode can only be turned off by the Mobile Device Management server, making it necessary to return the iPad to the library to regain usefulness of the device. This new program

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makes it much easier for institutions, such as libraries, to manage their fleet of devices when being utilized by numerous users on a regular basis. (Apple Support, 2017)

Conclusion

Mobile devices have been around long enough to become commonplace and adoption of the technologies to support these devices has become a necessity for libraries. As with all emerging technologies, there have been both challenges and opportunities and libraries are moving to take advantage of these.

Patrons rely more and more on accessing information through their own mobile devices and it behooves libraries to “meet them where they are” by making access as seamless as possible. Smaller screens require special consideration and library sites must be able to adapt.

At the same time, software programmers are developing applications to help both patrons and library staff members make the most of these devices’ usefulness. New apps are being developed all the time and older apps are being updated with a view toward increasing information access and productivity.

Libraries are also being called on to provide physical access to these mobile devices and must learn from each other to help overcome challenges. Software developers are creating programs to help, but libraries must also look to their peers to learn what hurdles to watch out for while seeking to provide the best access for patrons.

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