

A Library in the Palm of Your Hand: Mobile Services in Top 100 University Libraries

Yan Quan Liu and
Sarah Briggs

ABSTRACT

What is the current state of mobile services among academic libraries of the country's top 100 universities, and what are the best practices for librarians implementing mobile services at the university level? Through in-depth website visits and survey questionnaires, the authors studied each of the top 100 universities' libraries' experiences with mobile services. Results showed that all of these libraries offered at least one mobile service, and the majority offered multiple services. The most common mobile services offered were mobile sites, text messaging services, e-books, and mobile access to databases and the catalog. In addition, chat/IM services, social media accounts and apps were very popular. Survey responses also indicated a trend towards responsive design for websites so that patrons can access the library's full site on any mobile device. Respondents recommend that libraries considering offering mobile services begin as soon as possible as patron demand for these services is expected to increase.

INTRODUCTION

Mobile devices, such as smart phones, tablets, e-book readers, handheld gaming tools and portable music players are practically omnipresent in today's society. According to Walsh (2012), "Mobile data traffic in 2011 was eight times the size of the global internet in 2000 and, according to forecasts, mobile devices will soon outnumber human beings".¹ Studies have revealed that use of mobile devices is widespread and continues to increase. As of 2013, 56% of Americans owned a smart phone (Smith 2013). This number is even higher among people ages 18 to 29.² However, Peters (2011) points out that mobile phones at least can be found among people of all ages, nationalities and socioeconomic classes. He writes, "We truly are in the midst of a global mobile revolution."³ In 2012, the ACRL Research Planning and Review Committee found that 55% of undergraduates have smart phones, 62% have iPods, and 21% have some kind of tablet. Over 67% of these students use their devices academically.⁴ Elmore and Stephens (2012) write, "Academic libraries cannot afford to ignore this growing trend. For many students a mobile phone is no longer just a telephonic device but a handheld information retrieval tool."⁵

Yan Quan Liu (liuy1@southernct.edu) is Professor in Information and Library Science at Southern Connecticut State University, New Haven, CT, and Special Hired Professor at Tianjin University of Technology, Tianjin, China. **Sarah Briggs** (sjg.librarian@gmail.com) is Library/Media Specialist at Jonathan Law High School, Milford, CT.



It is clear from these studies that academic libraries can expect their patrons to be accessing their services via mobile devices in growing numbers and need to adapt to this reality. However, the sheer number of mobile devices on the market and the myriad ways libraries could offer mobile services can be daunting. Additionally, offering mobile services requires investing time, money, and personnel. In order to give libraries a starting point, this paper examines the current status of mobile services in the United States' top 100 universities' libraries as a model, specifically what services are being offered, what are they being used for, and what challenges libraries have encountered in offering mobile services. In doing so, this paper attempts to answer two questions: What is the state of mobile services among academic libraries of the country's top ranked universities, and what can the experiences of these libraries teach us about best practices for mobile services at the university level?

LITERATURE REVIEW

Current Status of Mobile Services in Academic Libraries

There is not a lot of data regarding the prevalence of mobile services in academic libraries. A 2010 study found that 35% of the English speaking members of the Association of Research Libraries had a mobile website for either the university, the library, or both (Canuel and Crichton 2010).⁶ A study of Chinese academic libraries revealed that only 12.8% surveyed had a section of their web pages devoted to mobile library service (Li 2013).⁷ In 2010, Canuel and Crichton found that 13.7% of Association of Universities and Colleges of Canada members had some mobile services, including websites and apps.⁸ In the United States, a 2010 survey found that 44% of academic libraries offered some type of mobile service. 39% had a mobile website, and 36% had a mobile version of the library's catalog. Half of libraries which did not offer mobile services were in the planning process for creating a mobile website, catalog, and text notifications. Additionally, 40% planned on implementing SMS reference services, and 54% wanted the ability to access library databases on mobile devices (Thomas 2010).⁹ However, it is widely assumed that mobile services will expand rapidly in the future (Canuel and Crichton 2010).¹⁰ More recently, a 2012 survey of academic libraries in the Pacific Northwest found that 50% had a mobile version of the library's website and/or catalog, 40% used QR codes, 38% had a text messaging service, and 18% replied "other" with mobile interfaces for databases being a popular offering. However, 31% of survey respondents still did not have any mobile services (Ashford and Zeigen 2012).¹¹ Osika and Kaufman (2012) surveyed community and junior colleges nationwide to determine what mobile services were being offered. 73% offered mobile catalog access, 62% offered vendor database apps, two were creating a mobile app for the library, and 14.7% had a mobile library website.¹²

Definition and Types of Mobile Services

Although there are dozens of different mobile devices on the market, La Counte (2013) aptly and succinctly defines them as follows: "The reality is that mobile devices can refer to essentially any device that someone uses on the go" (vi).¹³ Smart phones, netbooks, tablet computers, e-readers,

gaming devices and iPods are examples of mobile devices that are now commonplace on college campuses. Barnhart and Pierce (2012) define these devices as “...networked, portable, and handheld...”¹⁴ Additionally, these devices may be used to read, listen to music, and watch videos (West, Hafner and Faust 2006).¹⁵ According to Lippincott (2008), libraries should consider all their patron groups as potential mobile library users, including faculty, distance education students, on-campus students, students placed in internships or doing other kinds of fieldwork, and students using mobile devices to work on collaborative projects outside of school.¹⁶

The most common mobile services discussed in the literature are mobile-friendly websites or apps, mobile-friendly access to the library’s catalog and databases, text messaging services, QR codes, augmented reality, e-books, and information literacy instruction facilitated by mobile devices. These services fall into one of two categories: traditional library services amended to be available with mobile devices and services created specifically for mobile devices.

Common library services that have been updated to be mobile-friendly include a mobile website (either as a mobile version of the library’s regular site, an app, or both), mobile-friendly interfaces for the library’s catalog and databases, access to books in electronic format, and information literacy instruction which makes use of mobile devices. Regarding mobile websites and apps, Walsh (2012) writes,

“If a well-designed app is like a top-end sports car, a mobile website is more like a family run-around. It may not be as good looking, but it is likely to be cheaper, easier to run and accessible to more people.”¹⁷

It is not feasible to replicate the entire website in a mobile version, so libraries must know what patrons find most important and address that information through the mobile site (Walsh 2012).¹⁸ According to a 2012 survey of academic libraries in the Pacific Northwest, the most popular types of information found on mobile websites are links to the catalog, a way to contact a librarian, links to databases, and hours of operation (Ashford and Zeigen 2012).¹⁹ Many libraries are also providing mobile access to their catalogs and databases. This is sometimes difficult because often third-party vendors are responsible for the catalogs and/or databases, and libraries must rely on these vendors to provide mobile access (Iglesias and Meesangnil 2011).²⁰ However, many vendors already offer mobile-friendly interfaces; libraries must be aware when this is the case and provide links to these interfaces. When a vendor does not provide a mobile-friendly interface, the library should encourage the vendor to do so (Bishoff 2013, p. 118).²¹

There is a growing expectation that libraries will provide e-books to patrons as e-books become increasingly popular. Walsh (2012) states that the proportion of adults in the United States who own an e-book reader doubled between November 2010 and May 2011.²² According to Bischoff, Ruth, and Rawlins (2013), 29% of Americans owned a tablet or e-reader as of January 2012.²³ This has presented challenges for libraries, mainly in two areas: format and licensing. There is risk involved in choosing a format that will only work with one product, i.e. a Nook or a Kindle,

because not every patron will own the same device, and ultimately one device might become the most popular, rendering books purchased for other devices obsolete. On the other hand, formats that work with multiple devices tend to have only basic functionality and do not provide an ideal user experience (Walsh 2012).²⁴ Walsh (2012) recommends EPUB, which works well with many different devices, is free, and supports the addition of a digital rights management layer.²⁵ Licensing is also an issue as libraries and publishers strive to find a method of loaning e-books amenable to both. No one model has emerged which is mutually satisfactory (Walsh 2012).²⁶

Libraries are increasingly integrating mobile technologies into information literacy instruction and other forms of instruction. For example, services such as Skype and FaceTime, which Walsh (2012) describes as “a window to another world” (p. 105), can be used for distance learning, including reference and instruction.²⁷ When interactions do not need to take place live, many mobile devices have the capability to take pictures, record video, and record audio (Walsh 2012, p. 97).²⁸ This allows class events, including lectures and discussions, to be broadcast to people and spaces beyond the physical classroom. Walsh (2012) notes that, when constructing podcasts or vodcasts, it is important to make mobile-friendly versions of these available, bearing in mind different platforms and screen sizes people might be using to access the content.²⁹

Text messaging, QR codes, and augmented reality are examples of library services that were created expressly for mobile devices. Text messaging in particular has become a very popular mobile service offering; as Thomas and Murphy (2009) write, “Interacting with patrons through text messaging now ranks among core competencies for librarians because SMS increasingly comprises a central channel for communicating library information.”³⁰ A common use of text messaging is a ‘text a librarian’ service. Walsh (2012) recommends launching such a service even if the library currently offers no other mobile services, noting, “It can be quick, easy and cheap to introduce such a service and it is an ideal entry into the world of providing services via mobile devices” (p. 45).³¹ Peters (2011) points out that the shorter the turnaround time (he recommends less than ten minutes) the better. He notes that many questions arise as the result of a situation the questioner is currently in. He writes, “If you do not respond in a matter of minutes, not hours, the context will be lost and the need will be diminished or satisfied in other ways.”³²

QR codes have become popular in libraries offering mobile services. QR codes encode information in two dimensions (vertically and horizontally), and thus can provide more information than a barcode. The applications necessary for using QR codes are usually free, and they can be read by most mobile devices with cameras (Little 2011).³³ The most common uses of QR codes in academic libraries, according to Elmore and Stephens (2012), are linking to the library’s mobile website and social media pages, searching the library catalog, viewing a video or accessing a music file, reserving a study room, and taking a virtual tour of the library facilities.³⁴

Augmented reality may not currently be used as often in libraries as other services such as mobile sites and text messaging, but many libraries are finding unique and compelling ways to use AR. AR applications link the physical with the digital, are interactive in real time, and are registered in 3-D.

Hahn (2012) defines AR as follows: “In order to be considered a truly augmented reality application, an app must interactively attach graphics or data to objects in real time, to achieve the real and virtual combination of graphics into the physical environment.”³⁵ He notes that such applications are excellent additions to libraries’ mobile services because they connect physical and digital worlds, much like libraries.³⁶ One example of augmented reality is North Carolina State University’s WolfWalk, which is advertised as “...a historical walking tour of the NC State campus using the location-aware campus map” (NCSU Libraries).³⁷ To create the tour, the NCSU Libraries Special Collections Research Center provided over one thousand photographs of the campus from the 19th century to the present (NCSU Libraries).³⁸

RESEARCH DESIGN

To make sure the information gathered was current and valid, this study employed two approaches, website visits and survey investigation, to determine the state of mobile services at the top 100 universities’ libraries. The website visits explored what mobile services are being offered and how they are being offered at these university libraries. The survey sent via email inquired how they are providing mobile services in their libraries and what their results have been regarding challenges, successes, and best practices. The survey data was analyzed and compared to the data obtained via website exploration to form a more comprehensive picture of mobile services at these universities.

PARTICIPANTS

University libraries’ patrons are frequent users of mobile technology. According to Osika and Kaufman (2012), studies have found that 45% of 18 to 29-year-olds who have internet-capable cell phones do most of their browsing on their devices.³⁹ Kostruski and Skornia (2011) note that people of this age group are “...leaders in mobile communication...the traditional college-age student.”⁴⁰ As the nation’s leaders in undergraduate and graduate programs and academic research, an examination of the status of the top 100 university libraries’ mobile services can provide useful service patterns and a benchmark for the service improvements that would benefit academic programs. Based on the U.S. News & World Report’s national university rankings, this study selected the top 100 universities in the 2014 rankings.⁴¹

PROCEDURE

Website visits as the first step were conducted from March 2, 2014 to March 16, 2014. Each library’s home page was carefully examined for the most common mobile services named in the literature with these categorized items: 1) a mobile website or app, 2) mobile access to the library’s catalog and databases, 3) text messaging services, 4) QR codes, 5) augmented reality, and 6) e-books. To assess each site, we first visited the site via a Nexus 7 to see if it had a mobile version. Next, we viewed each library’s full site on a laptop computer. We browsed through each page of the site looking for mention or use of each said categorization. We also searched for these

items via the library's site map or site search functions whenever available. The results were tabulated with a codebook in the established categorization through Microsoft Excel.

Although the website visits place great value on gathering quantitative data about what mobile services are offered at these libraries, this method has its limitations. Firstly, it locates only those mobile services that appear on a library's website, but services the library provides which are not mentioned on the website can be overlooked. Also, the use of mobile devices or services in library instruction, a very commonly mentioned mobile service in the literature, cannot generally be determined via a website visit. In addition, the website visit provides only a snapshot of the current state of mobile services; university libraries may be planning to implement or even be in the process of implementing mobile services. Lastly, website visits evaluate what is publicly available, but it is not possible to access password-protected information meant only for a university's students and faculty to assess mobile content. To address these shortcomings, we created a survey using SurveyMonkey to complement the data supplied from the website visits. We sent out the survey via email to each of the top 100 universities' libraries. The survey was conducted from April 10, 2014, to April 24, 2014.

RESULTS AND ANALYSIS

Study results presented compelling evidence that mobile services are already ubiquitous among the country's top universities. The most recognized ones are mobile sites, mobile apps, mobile OPACs, mobile access to databases, text messaging services, QR codes, augmented reality, and e-books. These service forms confirm those commonly named in the literature as library mobile services.

What basic types of mobile services do the libraries provide?

The results showed all of the libraries offered one or more of the specific mobile services in Chart 1 with multiple entries allowed, presenting modernized new service patterns the university libraries provide to meet the needs and demands of university communities in this digital era.

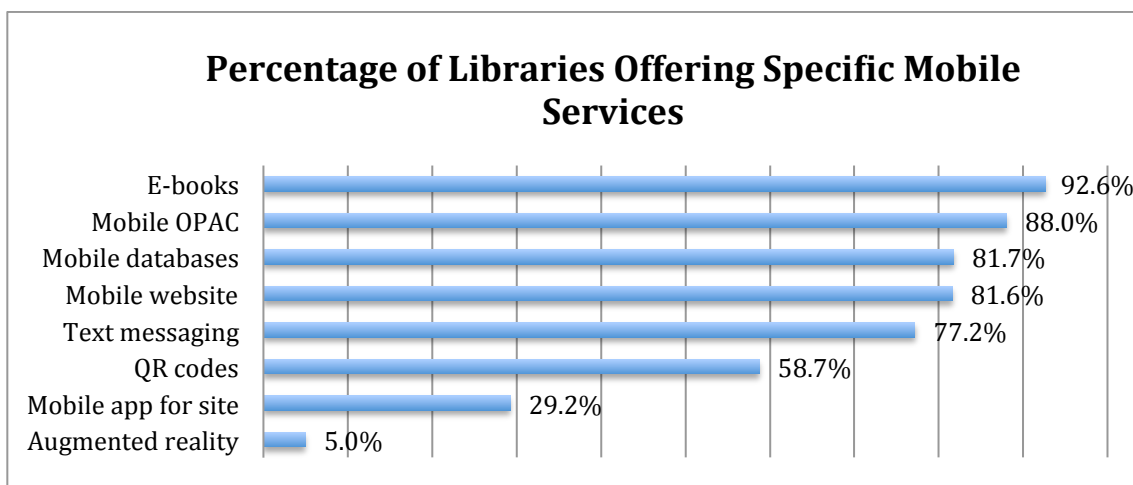


Chart 1. Percentage of Libraries Offering Specific Mobile Services (Multiple Entries Allowed).

It is clear from both the survey results and the website visits that almost all libraries at the top 100 universities are offering multiple mobile services, with mobile websites, mobile access to the library’s catalog, mobile access to the library’s databases, e-books, and text messaging services being the most common. QR codes and especially augmented reality are not as common.

Of the eight main mobile services we looked for via the website visits and survey (mobile site, mobile app for the site, mobile OPAC, mobile access to databases, text messaging, QR codes, augmented reality, and e-books), all libraries surveyed offer between one and seven of these services. No universities have none of these services, and no universities have all of these services. Only one university has one service, none have two, seven have three, thirteen have four, twenty-four have five, forty-six have six, and eight have seven. To make this information easy to read, we summarized it in Table 1 below.

Number of mobile services offered	Number of libraries	Percentage of libraries
No mobile services	0	0%
1 mobile service	1	1%
2 mobile services	0	0%
3 mobile services	7	7%
4 mobile services	13	13%
5 mobile services	24	24%
6 mobile services	46	46%
7 mobile services	8	8%
8 mobile services	0	0%

Table 1. Number of mobile services offered.

Such a data pattern demonstrates not only that mobile services are very widespread at these universities' libraries, but also that the vast majority of these libraries offer multiple mobile services. In other words, libraries do not appear to be offering mobile services in isolation; they have taken several of their most popular services (such as websites, reference, and search functions) and mobilized all of them. In fact, the average number of mobile services offered among the eight services we examined is 5.31.

Although results collected from the two research methods (website visits and survey) are almost identical for mobile websites and mobile OPACs and are very comparable for text messaging, QR codes, and augmented reality there is a bit of a gap between results from the website visits and the survey regarding mobile databases (92.9% vs. 70.59%), but perhaps libraries that responded to the survey just happened to offer mobile access to databases less often than all the libraries in general.

It is interesting that we located e-books on 100% of the websites we visited, but only 85.29% of respondents mention offering them. Perhaps this discrepancy can be explained by a clarification in terms. We looked for the presence of books in electronic format that could be accessed online. Perhaps survey respondents only considered e-books specifically formatted for smart phones or tablets as a mobile service. Also, later in the survey several respondents mention communication issues as an ongoing challenge in offering mobile services, specifically, not always knowing what other library departments are offering in terms of mobile services. It is possible that some survey respondents are not responsible for the e-book collection and thus did not mention it as a mobile service.

Another discrepancy exists between the results for mobile apps for the library's site (20.2% for the website visits versus 38.24% for the survey). These results indicate that mobile apps for libraries' sites are more common than we had previously thought. Perhaps these apps are being advertised in places other than on the library's website, and therefore a website visit is not the best way to discover them.

The website visits did not look for mobile library instruction, mobile book renewal, or mobile interlibrary loan, but through our website visits we saw these services mentioned several times and thus included them in the survey. They turned out to be somewhat common among libraries surveyed; 41.18% of respondents offer mobile book renewal, 20.59% offer mobile interlibrary loan, and 32.35% offer mobile-friendly library instruction.

Table 2 below compares the data collected from both the website visits and the survey among these 100 universities, ranking from high to low percentages. In most cases, they are very similar.

Mobile Services	Percentage of libraries offering service (Website Visits)	Percentage of libraries offering service (Survey)
E-books	100%	85.29%
Mobile databases	92.90%	70.59%
Mobile OPAC	87.80%	88.24%
Mobile website	80.80%	82.35%
Text messaging	80.80%	73.53%
QR codes	61.60%	55.88%
Mobile app for site	20.20%	38.24%
Augmented reality	7.00%	2.94%

Table 2. Data Comparison of Specific Mobile Services between Website Visits & Survey.

What content do the mobile sites offer?

In addition to assessing whether libraries had a mobile site, the survey asked libraries that already have a mobile site what is included on the site. 100% of libraries with mobile sites include library hours on their site, making this the most common feature. The next two most common features are library contact information and a search function for the catalog, which both received 96.67%. Searching within mobile-friendly databases, such as EBSCOhost Mobile, JSTOR and PubMed, is the next most popular feature, although it trailed a little behind library hours, contact information, and catalog searching at 70%. Book renewal received 56.67%, and access to patron accounts received 53.33%. Interlibrary loan is the least common feature by far, offered by only 26.67% of respondents. This information is summarized in Chart 2 below:

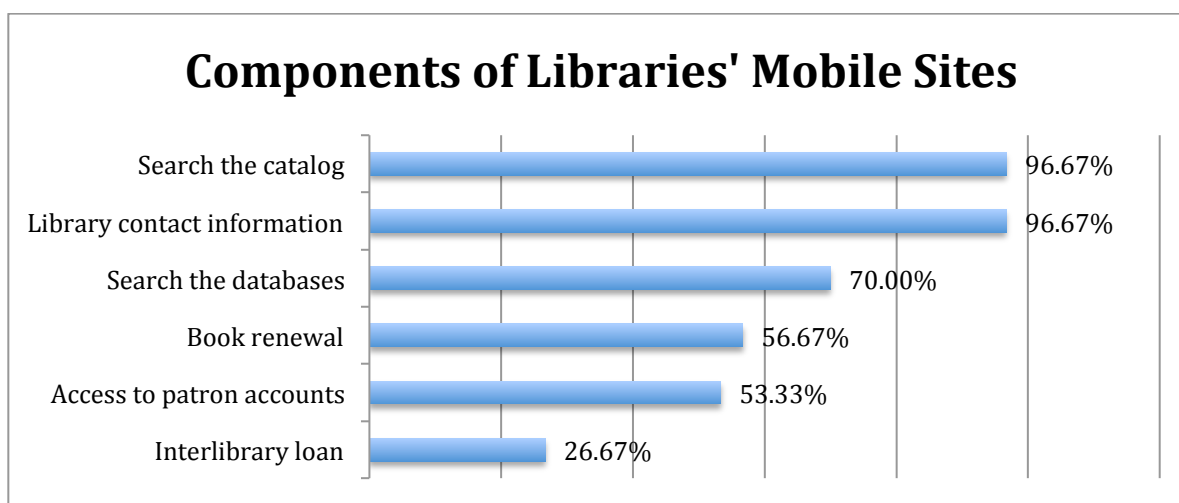


Chart 2. Components of Libraries' Mobile Sites.

These results are interesting as, overall, they reflect higher percentages for specific mobile services than question 1 on the survey, which asked which mobile services libraries offer. For example, in question 1, 88.24% of respondents offer mobile access to the library’s catalog, whereas for libraries with mobile sites, 96.67% offer access to the catalog on the mobile site. The ability to search mobile-friendly versions of databases the library subscribes to was almost the same for both groups, with 70.59% of respondents to question 1 offering this and 70% of respondents having this as a component of their mobile sites. Mobile book renewal is much more common among libraries with mobile sites; 56.67% of respondents with mobile sites compared to 41.18% of total respondents. A slightly higher percentage of respondents with mobile sites offer mobile interlibrary loan (26.67%) compared to all respondents (20.59%). This data suggests that, on the whole, libraries with mobile sites are more likely to offer other mobile services as well, specifically mobile access to the catalog, mobile book renewal, and mobile interlibrary loan.

What mobile reference services do libraries provide?

The survey also looked for information on virtual and/or mobile reference services. 81.25% of survey respondents offer text/SMS messaging, 100% offer chat/IM, and 21.88% offer reference services via a social media account. These results showing popular reference services in these top universities are summarized in Chart 3 below:

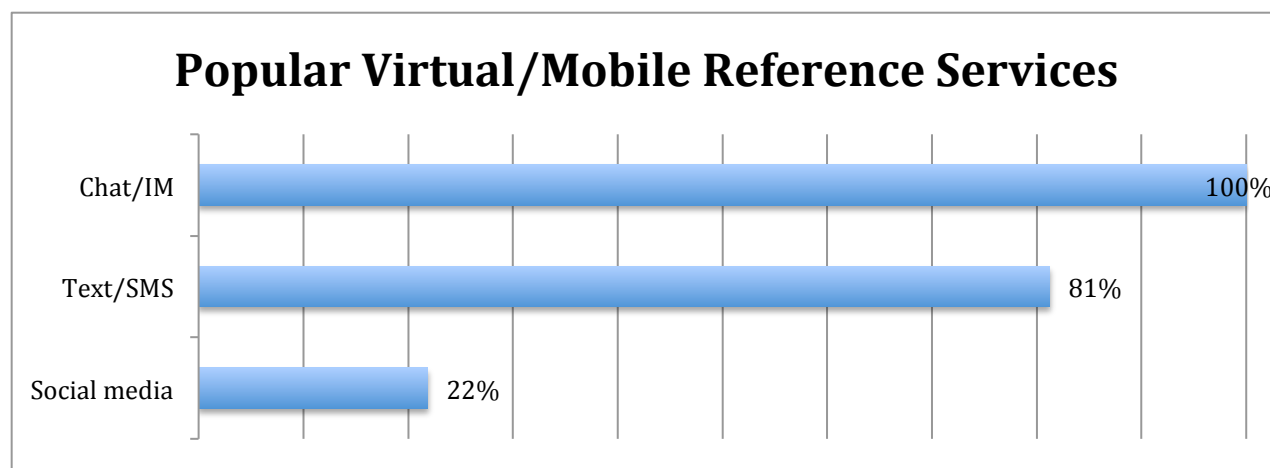


Chart 3. Popular Mobile Reference Services.

Chat/IM is obviously the most popular method of providing virtual/mobile reference services; all survey respondents offer this service. Text/SMS is also very popular, indicating that the majority of libraries see value in providing both despite their similar functions. The fact that social media does not compare favorably to either texting or chat/IM services is curious because most social media platforms have a mobile version available that libraries can take advantage of for free. However, this may not be the best medium for reference. One respondent commented on this question, “Our ‘Ask a Librarian’ service is available from desktop Facebook, but not on mobile Facebook.”

What apps do libraries use or provide for patrons?

Although the website visits and survey results indicated that apps for a library's site are not very common, both tools revealed that use of apps for various purposes is widespread. The most commonly mentioned app is BrowZine, which is used for accessing e-journals. Several respondents mentioned apps developed in-house for using library services, such as an app for reserving a study room, accessing university archives, and sending catalog records to a mobile device. Another respondent stated that the university's app has a library function. Several respondents mentioned vendor-provided or third-party apps, such as apps for accessing PubMed, ScienceDirect, Naxos Music Library, AccessMyLibrary (for Gale resources), a mobile medical dictionary, and the American Chemical Society. One respondent noted that the library loans iPads preloaded with popular apps to support student research such as EndNote, Notability, GoodReader, Pages, Numbers, and Keynote, among others. Finally, these apps were named at least once as an app libraries either use or provide access to: iResearch (for storing articles locally), Boopsie (for building a library mobile app), ebrary (for accessing e-books), and Safari (for accessing books and videos online). These results indicate that the use of apps is fairly robust and diverse among these libraries. Additionally, from these results, it seems more common for libraries to use and/or provide apps created by third parties than to develop an in-house app, perhaps due to the expertise and expense involved in creating and maintaining an app.

What mobile services will be added in the future?

The final question of the survey asks libraries if there are any plans to offer a mobile service not currently provided. Responses are summarized in Chart 4 below.

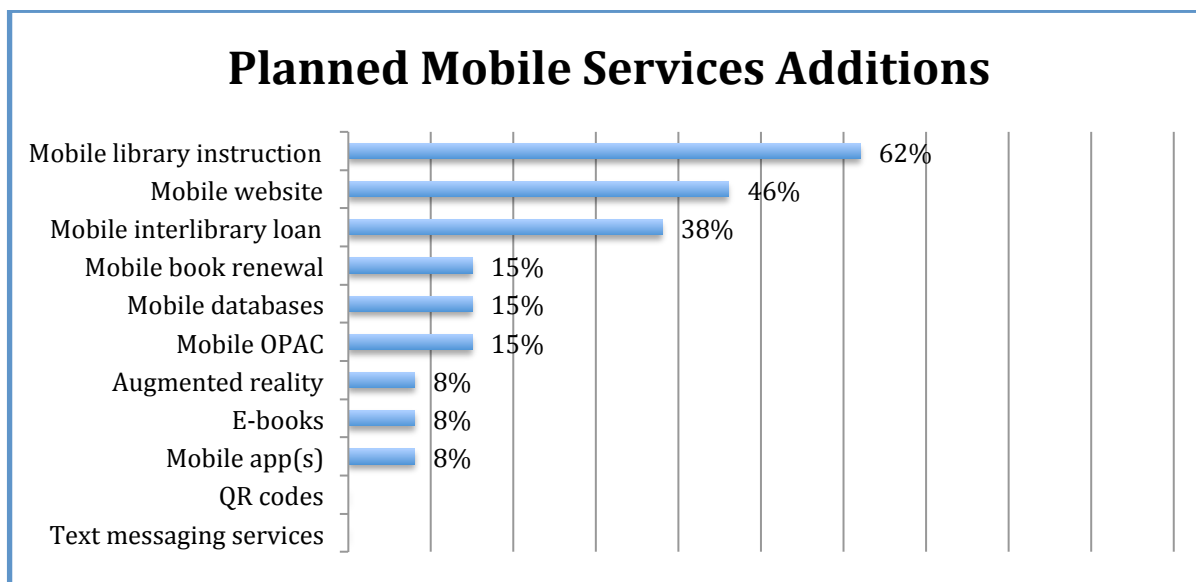


Chart 4. Percentage of the Libraries Seeking to Add Specific Mobile Services

The most common selection is mobile friendly library instruction, with 61.54%. The next most common is a mobile website (46.15%). Mobile interlibrary loan was chosen by 38.46% of

respondents. Less common services planned include adding mobile access to the library's OPAC, mobile access to the library's databases, and mobile book renewal, each of which were chosen by 15.38% of respondents. 7.69% of respondents are planning to add mobile apps, e-books, and augmented reality, respectively. No one indicated plans to add text messaging services or QR codes. These results indicate that libraries expect demand for traditional library services in a mobile-friendly format to continue to expand; mobile friendly library instruction was only offered by 32.35% of respondents, yet 61.54% have plans to offer this service in the future. Mobile interlibrary loan is currently offered by 20.59% of respondents, so the fact that 38.46% would like to add it represents a significant change.

Not surprisingly, mobile websites are likely to remain a very popular mobile service. The fact that 82.35% of respondents already have a mobile website and 46.15% who do not have one wish to add one in the near future means that mobile-friendly sites are well on their way to becoming ubiquitous, at least among libraries at the top 100 universities, and may reasonably be expected to take their place among websites in general as a necessity to maintain institutional viability. Additionally, several respondents mentioned moving towards responsive design, in which their websites are fully functional regardless of whether they are accessed on mobile devices or desktops.

What are challenges and strategies for offering mobile services?

In addition to looking for the presence or absence of mobile services being offered at top 100 university libraries, the survey also examined libraries' experiences in implementing mobile services, including challenges, successes, and best practices. Several themes emerged in response to these questions. The most common challenge among respondents was having the time, expertise, staffing and money to support mobile services, especially apps and mobile sites. To solve this problem, respondents mention relying on vendors and third-party providers supplying apps to access their resources, but this does not give libraries the flexibility and specificity of an in-house app.

Another common challenge mentioned by several respondents involved technical issues, such as difficulties with off campus access to resources via a proxy server and compatibility issues among different browsers and especially different devices. A lack of communication and/or support is another issue for libraries. One respondent reported a lack of support from the campus computing center for mobile services. One respondent discussed the difficulty of having a coordinated mobile effort when the library has a large number of departments, and each department may or may not be aware of what the others are doing in regards to mobile services. Survey results revealed that few libraries have policies in place to support mobile services.

Coming up with a specific plan for implementing such services can help libraries work towards promoting effective communication and garnering support. One respondent wrote, "The biggest challenges have been: (1) developing a strategy (2) developing a service model (3) having a systematic model for managing content for both mobile- and non-mobile applications. We've had

success with the first two and are making great progress on the third.” Interestingly, several respondents noted that underuse is an issue for some services. One respondent mentioned that QR codes are not used often, and another mentioned that the library’s text-a-librarian service is much underutilized. Several respondents cited the need to market mobile services as an antidote to this problem. Seeking regular feedback from the user community regarding mobile services wants and needs is another recommended solution.

Other issues include the fact that not all library services are mobilized. However, libraries are actively looking for solutions for this. There is a trend among respondents towards developing a site that is responsive to all devices, including desktops, laptops, tablets, and phones. This will take the place of a separate mobile site. As one respondent states, “At the moment, our library mobile website only has a fraction of the services available via our desktop website. We are in the process of moving everything to responsive design, with the expectation that all services will be equally available in mobile and desktop.” In reading through these responses, one message is clear: mobile services are a must. Several respondents noted that demand for mobile services is growing, with one writing, “Get started as soon as possible. Our analytics show that mobile use is continuing to increase.”

CONCLUSION

This study confirms that as of spring 2014 mobile services are already ubiquitous among the country’s top 100 universities’ libraries and are likely to continue to grow. Where the most common services offered are e-books, chat/IM, mobile access to databases, mobile access to the library catalog, mobile sites, and text messaging services, there is a trend towards responsive design for websites so that patrons can access the library’s full site on any mobile device.

The experiences of these libraries demonstrate the value of creating a plan for providing mobile services, allotting the appropriate amount of staffing, time, and funding, communicating among departments and stakeholders to coordinate mobile efforts, marketing services, and regularly seeking patron feedback. However, there is no one approach to offering mobile services, and each library must do what works best for its patrons.

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