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## Mobile Reference: What Are the Questions?

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### **Abstract**

While many libraries are already offering some types of reference services geared to users of mobile devices, they generally focus on the reference transaction and not on some of the broader aspects of service, including availability of content for mobile devices and relationship of the library's services to mobile initiatives on campus. Asking the right questions during the planning process can assist librarians in clarifying their goals for the service, identifying units to work with on campus, and determining whether the service is successful. This is a rapidly developing area and flexibility is key.

**KEYWORDS** mobile devices, mobile phones, cell phones, smart phones, mobile reference service

### **Introduction**

Everywhere we turn, there are articles about mobile devices, whether in the mainstream media, higher education publications, or the library press. Often they describe the debut into the market of new devices or the growing reliance by individuals on their cell phones, Ipods, or netbooks. Since libraries have been providing digital content for decades and have been offering some services via the Internet for many years, what are the implications of the widespread use of mobile devices for reference service? Are many changes required to address the needs of users employing smartphones rather than laptops? What are the options for libraries to provide content and services tailored for users of mobile devices? Many libraries have experimented with some services that are geared to mobile device users; one could argue that telephone reference service is the most basic and ubiquitous of these types of services. Some libraries have a wide array of mechanisms in place so that users of various devices can contact them to ask questions. But, have reference librarians answered all of the questions surrounding the use of mobile devices and potential services?

Generally, when reference service and mobile devices are discussed, the primary focus is on the reference transaction – how best to answer users' questions using mobile devices. Many options are available and many devices can be utilized. For example, individuals using laptops or netbooks can access reference services in many institution's libraries via e-mail, instant messaging, or text, audio, or video chat. The librarians may be using desktop computers or laptops to reply to these queries. Reference librarians may receive SMS text messages through computers, using specially configured software, or they may receive and answer text messages that have been sent via a user's phone by utilizing mobile phones or smartphones themselves. Some institutions have been offering services geared towards users of a wide variety of devices for a number of years, and there is a growing literature, including articles and

conference presentations, detailing the selection of technologies, implementation, use of, and satisfaction with systems and service programs. The literature does not always clearly address the overall goals of the program, the target audience, or the relationship to the curriculum or other academic programs. Typically measures of success are not clearly articulated, although counts of transactions during the pilot period are often noted. These studies focus on reference transactions, which are a key element of service delivery in a mobile environment; however, there are broader considerations of mobile service provision that include identification of overall goals, mobile-compatible content availability, and institutional environment issues. In many institutions, reference librarians have multiple roles and frequently participate in an information literacy program and may serve as liaisons to academic departments. They can leverage their broad view of services in the planning for mobile devices; and therefore, this article will address a wide range of issues that are related to the various facets of reference librarians' roles. As libraries approach the development of a reference program involving mobile devices, there are some fundamental questions that can assist them in framing the planning process.

### **What is the current state of mobile device deployment at your institution or for your population?**

In developing or reviewing services to support users of mobile devices, it is important to understand the current use of mobile devices by your user community. On campuses, the Computer Center or IT organization may keep statistics or participate in a national annual survey such as the one run by the EDUCAUSE Center for Applied Research (ECAR). It would be valuable for libraries to understand the degree to which their user community, or a subset of that community, are using mobile phones to access the Internet, for example. The ECAR survey noted that in 2008, while two-thirds of students owned Internet-capable mobile devices, only a third of those individuals actually used the internet from their devices primarily due to cost considerations (Salaway and Caruso, 2008). If an institution has a large number of students in professional programs such as health sciences, business, or law, it would be interesting to see if those sub-populations were more likely to access the Internet from their mobile devices; the same information would be useful about older adults on campuses that have a high number of students who are older than the traditional 18-22-year old age group. These sub-populations may be more likely to value services that they can access from off campus, whether from the individual's home, office, or clinical placement.

Departmental liaison librarians should be aware of whether particular academic programs require ownership of specific mobile devices, and ideally they should be involved in conversations as such decisions are being considered. Even if there are no departmental programs where mobile devices are employed across the curriculum, it would be valuable to identify faculty actively using mobile technologies with specific courses and consider piloting some services with them. Reference librarians in a main arts and sciences library might want to keep up with developments in their institution's professional school libraries since specialties like health sciences and journalism have been leaders in employment of mobile devices in the curriculum.

### **What are your goals for providing service and what are your strategies?**

There may be a presumption that libraries need to launch services compatible with mobile devices purely because a large segment of their user population owns those devices and uses them regularly. Some may believe that it is important that the library show awareness of technology trends and offers some services as a statement that they are up to speed with the latest technology developments. Others may note that their peer institutions are offering services for users of mobile devices and therefore need to emulate them or be left behind. However, none of those motivations adequately address the formation of goals for providing this type of new service or any other. While it is important to understand the local user population – ownership of types of devices, current uses, behavior of subsets of the population, for example – these data points are only a piece of the equation of developing goals for reference services for mobile devices.

Some possible goals for providing services suited for mobile devices include:

- Enhancing the convenience of access to reference services
- Enhancing the convenience of access to basic library and patron information
- Encouraging individuals who generally don't use the library's services to access the library
- Supporting a campus-wide or departmental initiative employing mobile devices
- Enhancing the library's instruction program, both in the classroom and beyond
- Providing e-books and readers to users as an alternative to some print publications
- Delivering easy-to-access key information resources to users in the field
- Providing campus-related, geographically linked content to enrich the campus experience of users
- Becoming a campus resource for educating users about the features and operation of mobile devices
- Raising the profile of the library, its staff, and its services

It is likely that underlying the development of most reference transaction services, such as the availability of connection to a reference librarian via e-mail, chat, or SMS text messaging, are the combined goals of making reference services more convenient and potentially reaching some individuals who normally don't ask questions of reference staff. If these are the overarching goals of the service, librarians will also want to understand what days and hours users might take most advantage of those services and how they will find out about their availability. If many students say they would like reference service during late night hours, would some trained staff, whether librarians, library assistants, or graduate student workers consider answering questions via mobile phones that they would take home on evenings or weekends? In a survey sponsored by the University of Minnesota Office of Information Technology, students indicated that they were not too interested in technology training but wanted technical support available online 24X7 (Walker & Jorn, 2007).

Some institutions may have specific objectives for use of mobile devices in reference service based on earlier assessments. For example, the Temple University Library launched a pilot service in which staff with an iPod Touch device circulated in the stacks areas during a limited number of hours in response to data from a LibQUAL Survey that indicated that students needed more assistance while in the stacks (and not just at a main service desk) (Rowland and Shambaugh, 2009). While the pilot service was not heavily used, it is the type of experiment that gave benefit to both the institution and to others. In order to better serve the user community, there needs to be room for trial and error, especially when new technologies are employed.

Providing answers to questions via mobile devices may lead librarians to consider adding additional goals to their services, such as offering reference content that is compatible with mobile phones so that they might be able to link users directly to information resources during a mobile reference transaction. Keeping up with websites that offer mobile device compatible versions of database services, assisting users in identifying mobile-compatible electronic journals and newspapers, providing access to mobile-compatible bibliographic citation tools, or accessing WorldCat mobile to answer questions or to guide users in answering questions are all potential outgrowths of mobile reference service. In addition to connecting with a reference librarian via a mobile device, users may want to access their patron record, a listing of library hours, or a service that provides updated information on computer availability in the library, or a service that permits them to book a group study room; examples of each of these services currently exist in some academic libraries.

Libraries may want to provide versions of licensed information resources to their users, whether they are in the form of e-books for laptops or specialized e-book readers or mobile-compatible reference resources for users who work in the field or in clinical areas. A small number of libraries are partnering with information technology units and academic programs to deliver program-related academic content to students using mobile devices for specific programs. At Quinnipiac University, the library and IT units worked together to offer three reference resources to graduate students in a physician assistant program (Raths, 2009).

Some libraries have developed information literacy podcasts so that students can find quick instructions for accessing databases or judging the quality of a web resource. These can be useful supplements to information literacy class sessions and could be given as homework assignments by teaching faculty. Providing anytime and anywhere tutorials such as these not only addresses the goal of convenience but can free up class time in information literacy sessions for higher level topics. Other uses of mobile devices related to instruction include devices in the classroom. At Brigham Young University, librarians employed Personal Response Systems (PRS) or clickers, in information literacy sessions in order to increase student engagement (Julian and Benson, 2008).

Some libraries, especially in the health sciences, have chosen to become the main campus resource for services for mobile devices, providing web pages comparing

devices, providing workshops, and providing direct support to users (University of Iowa Libraries, 2009). On other campuses, the computer center help desk might fulfill this function, or there may be a void in providing services. Providing a full range of services, including supporting users in configuring their devices, might not be a priority for all libraries, but reference staff should be aware of where to refer patrons needing assistance with their devices.

Recently, some new developments are emerging that demonstrate the deeper impact that mobile technologies might have in the academic environment. One new technology to watch involves QR codes, which “link the physical world with the virtual by providing on-the-spot access to descriptive language and online resources for objects and locations” (7 Things, 2009). The codes themselves are similar to bar code labels, but in a different type of pattern. If they are placed in physical locations, an individual with a mobile phone that has the capability to scan the code can call up a web page that provides information linked to that location. For example, some bus companies post a QR code in their bus shelters and individuals can call up real-time information about arrivals and departures of the transportation service. QR codes on individual books could link the content to a website of reviews, a social networking service for book discussion, a page with author information, etc.

Some libraries are offering institutionally related content for mobile devices. The Duke University library has added around 32,000 images from its special collections to the campus mobile portal (Treasures, 2009). The North Carolina State University Library is developing a mechanism that combines content from the library’s special collections with a location-aware map-based interface that will enable individuals to tour the campus and link to information about points of interest (Sierra and Wust, 2009). Reference librarians can be part of the promotional strategy for these new services, describing them in orientation and class sessions.

As with any library service, if very few individuals know about the program, inevitably there will be low rates of use. It will then be difficult to determine whether the intended target population is disinterested in the service or whether they might have used it had they been aware of it. When queried about a new text-a-librarian service at his university library, one student replied, “The library already has a feature where you can chat online to a librarian. The only problem is about 95 percent of people I talk to have no idea this even exists...It seems like nothing is promoted” (Bell, 2009).

Some ways that a library might promote its services to users of mobile devices include links via the course management system, articles or ads in university publications for faculty, staff, and students, promotion through Facebook, creation of a YouTube video, and placement of posters or ads on digital information boards in strategic spots on campus such as dormitories. Many libraries mention promoting the services they offer via posters in the library and via their library websites, and while that may be useful, it misses those individuals who do not come into the library or visit the library website. Librarians can also talk with students about mechanisms they believe will help spread the word about library services.

If the campus population is using Twitter, there are opportunities to use that service to publicize library services for mobile devices and even to answer some reference questions via Twitter. Twitter can be used to provide service, to solicit feedback on services, to promote services, and to link to content that might be of interest to your user population (Burkhardt, 2009).

Some universities are developing an overall mobile strategy, often featuring a portal to all mobile-friendly university services; ensuring access to the library's services from the main page of that portal could be an important mechanism for driving traffic to the library. In addition, publicizing mobile services during information literacy sessions or orientation sessions is a useful promotional mechanism. At University of Rochester, freshmen were encouraged to call the reference desk as part of a trivia contest during move-in day. The idea was that students would enter the library phone number into their address book so that it would be easily available for future use of reference service (Gibbons, 2007).

### **Who should you be working with in your institution or service area?**

An ECAR study that included a status report of the support and use of mobile devices on campuses found that of institutions that had a strategic plan, only 40% said that the plan "identified mobile communications as an area of importance" ( Sheehan, 2009, p. 83). Campus approaches to the support of mobile device users are still in formative stages in many institutions, and the library is in a position to play a central role as key decisions are being made. A table of activities in that same report listed new types of messaging and communication technologies and how they were being used or considered on campuses. A wide range of services, from registration to counseling or academic advising to teaching were listed, but the table completely omitted any reference to the library (Sheehan, 2009, pp. 146-7). Librarians will need to be assertive in seeking out the committees or administrative groups that will be defining the institution's mobile strategy and in demonstrating that they have an active role to play. Some universities are developing portals or coordinated suites of services that are accessible to users of mobile devices. Here again, libraries should play a key policy role to ensure that access to such items as the library's hours, catalogs, patron information, and reference services are included in the portal design.

The campus units most likely to be in a leadership position for developing programs and services for mobile devices include the institutional information technology unit or computer center, the instructional technology unit or center for teaching and learning, individual schools or departments, particularly in professional program areas, and bookstores. As Blackboard and other course management systems (CMS) reconfigure for access via mobile devices, libraries will need to ensure that the content and services they have embedded in a CMS will be available and usable in that mode as well.

In addition, as noted above, some departments, programs, or professional schools may take the lead in employing mobile devices for students or may even require students to purchase a particular type of mobile device. This can have implications for the

capability of the library to offer services to those students. For example, if students are required to purchase a device for an electronic textbook program, will they also be able to access electronic reserve materials from the library or library-licensed databases as they prepare projects or course assignments on the designated device? If librarians are not part of the planning process, such compatibility may not be taken into account.

### **How will you know if you are successful?**

Providing services for users of mobile devices generally means adding something new to the menu of service options for the library's users, and this takes resources. Determining whether the resources, whether actual expenditures or staff time or both, are worth the investment is important for the library. In the current technology environment, it is unrealistic to take the traditional view that any new service should be mounted only when every detail is in place and funds are available for ongoing support into the foreseeable future. The environment and user preferences are changing too quickly for this to be advisable or preferable to a flexible strategy. However, it does not mean that some type of assessment should be omitted from the project plan because things are changing rapidly. The library can learn about both the current use of services and the anticipated future needs through assessment. Importantly, the assessment should be in alignment with the goals of the service. For example, if one of the goals is to encourage individuals who have not used reference service in the past to ask questions via a mobile device, the assessment method must include a component to capture that data.

The typical assessment method of counting transactions can provide useful trend and comparative data. However, ideally, with this new service area, the assessment method(s) will capture a richer picture of user needs and preferences. For example, librarians at New York University conducted an in-depth analysis of their SMS text messaging reference service, analyzing the data from one year, involving 583 transactions (Pearce et. al., 2009). In addition, they compared use of that service with other types of data including in-person reference transactions. Their analysis helped dispel some of their preconceptions about SMS reference transactions; for example, they found that such interactions did not need to be limited to quick, ready-reference types of questions; their users were willing to have a dialogue with the librarian and have some back-and-forth discussion. They also discovered that some users were texting librarians from inside their library building (Pearce et. al., 2009). Some library users are concerned about getting up from a workstation in the library to walk over to the reference desk since someone else may take over the workstation, or they may fear leaving their belongings unattended while they are away.

Surveys can provide useful information, especially if they are administered periodically so that trends can be tracked. A survey of students and technology developed and administered at Ohio University is an excellent model for other institutions (Booth, 2009). This survey compiled data on a wide array of items including student ownership of technology devices, use of social networking sites, familiarity with emerging technologies, awareness of library services, and receptivity to potential new library

technology-based services. The publication in which the results are described includes the survey instrument, which other institutions may use with their own population.

One of the difficult aspects about assessing student use of or receptivity to service delivery via mobile devices or access to content via mobile devices is that behavior and the marketplace are changing rapidly. Deciding how much weight to give to student's lack of interest in some potential library services is difficult given that their interest might change with the introduction of a new device, a cheaper service plan, or the popularity of a particular social networking platform.

### **What is your strategy for the next two to three years?**

Whether a library is already offering services to users of mobile devices or is still in the planning phase, it is wise to consider the near-term strategy since technologies are changing so quickly. Introduction of new devices in the public marketplace or by specific departments or units within your institution has the potential to dovetail with or derail the library's current services or plans, depending on technologies selected, licensing schemes adopted, etc. The popularity of devices new to the market or new social networking mechanisms could impact adoption. Perhaps most important, if the cost of access to the mobile web drops significantly, it is likely that widespread use of the web via mobile devices will rise very quickly. Waiting for the technology to settle down, leading to paralysis in instituting new programs, is not the answer. Booth writes that active experimentation is needed in the current climate, and that it "requires the acceptance of risk, and organizational cultures that enable iterative approaches to service development" (Booth, p. 102).

Libraries can develop a plan for the introduction of services and content geared towards users of mobile devices and they can also participate in institution-wide efforts to develop such plans. They can hold in-house professional development programs to describe and discuss the wide range of possibilities for libraries in the mobile world and can participate in regional or national events, in-person and online, that help them keep abreast of developments. They can monitor a number of websites to keep up with trends as well as identify and learn from implementations of mobile services in libraries. The M-libraries website consolidates information on developments (M-Libraries). Whether or not a library is ready to implement mobile services at this time, at a minimum they should appoint one or more individuals to keep abreast of developments and stand ready to recommend first steps for their particular institution. When a library is ready to implement some services, developing the project in the context of clear goals and with an assessment plan can help the staff clarify the potential value and also set the framework for evaluating the effort.

### **Conclusion**

Providing reference service to users who may want to ask questions and have them answered via mobile devices is becoming more prevalent. It is fairly standard for libraries to provide capabilities for users to e-mail questions to the reference desk or chat live with a librarian. A relatively small number are experimenting with offering reference services employing SMS text messaging. However, that is only one piece of

a larger picture. Depending on the library's goals, reference librarians may want to partner with academic and technology units to provide digital content and services for students and faculty using mobile devices in conjunction with a specific academic program. They may want to raise the profile of the library by promoting services using Twitter or make institutionally related content, such as images, available in a format suitable for mobile devices. They may want to increase the reach of their information literacy program by providing podcasts or posting videos to sites like YouTube. Librarians should think creatively about the development of services for users of mobile devices, especially taking into account user needs and preferences and the relationship of services to the academic program of their institution.

## References

Bell, Jamie. 2009. Have a Quick Question? Just Text a Librarian! University of Nebraska, Gateway, August 11, 2009. <<http://media.www.unogateway.com>> (accessed August 13, 2009).

Booth, Char. (2009) *Informing Innovation: Tracking Student Interest in Emerging Library Technologies at Ohio University*. Chicago: Association of College & Research Libraries. <http://www.acrl.org/ala/mgrps/divs/acrl/publications/digital/index.cfm> (accessed August 13, 2009).

Burkhardt, Andy. 2009. Six Things Libraries Should Tweet. Information Tyrannosaur (blog). July 27, 2009. <<http://andyburkhardt.com/>> (Accessed August 13, 2009).

Gibbons, Susan. 2007. *The Academic Library and the Net Gen Student*. Chicago: American Library Association.

Julian, Suzanne and Kimball Benson. 2008. Clicking Your Way to Library Instruction Assessment: Using a Personal Response System at Brigham Young University. C&RL News 69 (5): 258-260.

M-Libraries (website)

<<http://www.libsuccess.org/index.php?title=M-Libraries>> (accessed August 13, 2009)

Pearce, Alexa, Whatley Kara, & Collard, Scott. 2009. Say what?: An SMS Transcript Analysis at New York University. Presentation at Second International m-Libraries Conference, Vancouver, Canada, June 24, 2009. <[m-libraries2009.ubc.ca/](http://m-libraries2009.ubc.ca/)> (accessed August 13, 2009).

Raths, David. 2009. Good Things Come in Small Packages. Campus Technology, vol 23, February, 2009: 30-35.

<<http://campustechnology.com/Articles/2009/02/01/Mobility.aspx?Page=7>> (accessed August 13, 2009)

Rowland, Fred and Shambaugh, Ada. Ask Us Upstairs: Bringing Roaming Reference to the Paley Stacks. Presentation at Second International m-Libraries Conference, Vancouver, Canada, June 23, 2009. < [m-libraries2009.ubc.ca/](http://m-libraries2009.ubc.ca/)> (accessed August 13, 2009).

Salaway, Gail and Judith Caruso. (2008) *The ECAR Study of Undergraduate Students and Information Technology, 2008*. Research Study, Vol. 8, 2008.. Boulder: EDUCAUSE Center for Applied Research. <http://www.educause.edu/ECAR/ECARHome/ResearchPublications/172> (accessed August 13, 2009).

Sheehan, Mark. (2009) *Spreading the Word: Messaging and Communications in Higher Education*. Research Study, Vol. 2, 2009. Boulder: EDUCAUSE Center for Applied Research. <http://www.educause.edu/ECAR/ECARHome/ResearchPublications/172> (accessed August 13, 2009).

Sierra, T. and Wust, M. (2009). "[Towards Mobile Enhanced Digital Collections](#)", Presentation at Second International m-Libraries Conference, Vancouver, Canada, June 24, 2009. < [m-libraries2009.ubc.ca/](http://m-libraries2009.ubc.ca/)> (accessed August 13, 2009).

7 Things You Should Know About... QR Codes. (2009) Boulder: EDUCAUSE Learning Initiative. <[net.educause.edu/ir/library/pdf/ELI7046.pdf](http://net.educause.edu/ir/library/pdf/ELI7046.pdf)> (accessed August 13, 2009)

Treasures Move from Library Shelves to the iPhone with New DukeMobile Applications. (2009) Duke Today, June 16, 2009. <[www.duke.edu/today/](http://www.duke.edu/today/)> (accessed August 13, 2009).

University of Iowa Libraries. 2009. PDA & Smartphone Resources. [www.lib.uiowa.edu/hardin/pda\\_index.html](http://www.lib.uiowa.edu/hardin/pda_index.html) (accessed August 13, 2009).

Walker, J.D. and Jorn, Linda. 2007. *Net Generation Students at the University of Minnesota: Student Technology Survey 2007*. <<http://dmc.umn.edu/surveys>> (accessed August 13, 2009)