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Keeping Moving: Smart Phone and Mobile Technologies in the Academic Library

Any librarian would be hard-pressed to claim that he or she has not noticed the proliferation of smart phones and mobile devices over the past couple of years. Who, for example, has not seen an ad by Apple telling us “There’s an App for that”? Within the academic environment, EDUCAUSE reported that 62.7% of North American undergraduates now have an internet capable smart phone or mobile device including a Blackberry, iPhone, iPad, Android, and more than half of them said that they accessed the Internet through their devices on a daily basis to read and send e-mail, check the news and weather, use GPS, get maps and directions, and access social networking sites like Facebook and Twitter. A smaller, but growing group, also used their phones to do online banking, shop, or download and stream music and videos.[[1]](#endnote-1) What does it mean for libraries that an increasing number of younger users execute so many social and professional tasks on one small piece of equipment? What kind of landscape are we contemplating when information providers now offer dedicated mobile web sites or applications for consumers? What does it mean when, to paraphrase *American Libraries*’ columnist Meredith Farkas, we can have a library in our pocket?[[2]](#endnote-2)

Smart phones and mobile technologies are changing the ways we consume, distribute, and create information. The online *PC Magazine Encyclopedia* defines a smart phone as “a cellular telephone with built-in applications and Internet access. Smart phones provide digital voice service as well as text messaging, e-mail, Web browsing, still and video cameras, MP3 player and video viewing…smart phones can run myriad applications, turning the once single-minded cell phone into a mobile computer.”[[3]](#endnote-3) Smart phones are also known more broadly as “mobile devices,” as are the iPad and Kindle, which cannot make phone calls. Until fairly recently, a user had to be sitting in front of a desktop computer or with a laptop to connect to the Internet, send an e-mail, edit documents, or download an electronic file. In contrast, a smart phone like an Apple iPhone or Google Android offers its owner many personal computer-like functions in miniature and on the go anywhere, anytime, provided the user can get a wireless Internet connection (also known as Wi-Fi). Early versions of smart phones appeared in the mid-1990s, but it wasn’t until the early part of this century that they appeared on the market in the form we now know them. The Blackberry took off in 2002, the Palm Treo offered web browsing that same year, and various less sophisticated phones could take photos, record voice and video, and offered relatively clunky videogames.[[4]](#endnote-4) Apple’s iPhone, first launched in 2007, changed the conversation and offered users many features of a personal computer and a universe of the now ubiquitous “apps” or applications. The App Store within iTunes was launched in July 2008 and two years later, there were approximately 300,000 third-party (i.e., non-Apple) apps available, many of them for free. By January 2011, the Store celebrated its eleven billionth app download. In 2008 Apple founder Steve Jobs told the *Wall Street Journal* that mobile phone research and development “used to be about radios and antennas and things like that…We think, going forward, the phone of the future will be differentiated by software."[[5]](#endnote-5) Three years later, Jobs’ phone of the future is not only differentiated by software, but it has been transformed by use and widespread adoption. IDC, the market research firm, recently reported that smart phones outsold personal computers for the first time in 2011[[6]](#endnote-6) and, based on sales of mobile devices and adoption by users, Morgan Stanley now predicts that mobile computing will be bigger than the desktop equivalent within five years.[[7]](#endnote-7) This represents a tremendous shift to contemplate, especially for libraries with banks of fixed computers workstations in information or computing commons or dedicated computer labs.

Despite the speed at which smart phones and mobile technologies have been adopted across North America, Europe, and parts of Asia and the developing world, the academic community has been relatively slow in embracing them.[[8]](#endnote-8) *The Chronicle of Higher Education*’s Josh Keller contends that many colleges and universities have not been taking their mobile sites or applications seriously. As a result they risk “losing prospective applicants and donors through admissions and alumni portals that don’t work, and it risks frustrating current students who want to manage their coursework and the rest of their lives with their mobile phones.”[[9]](#endnote-9) Instead, businesses have taken the lead in creating mobile content, and information providers like Elsevier Health,[[10]](#endnote-10) Wiley,[[11]](#endnote-11) Cambridge Journals Online,[[12]](#endnote-12) LexisNexis,[[13]](#endnote-13) WorldCat,[[14]](#endnote-14) IEEE[[15]](#endnote-15), and Gale[[16]](#endnote-16) now offer customers mobile services like web sites and applications for specific databases or journals. Two of the most important providers of scholarly content and digital images, JSTOR and ARTStor, have also launched mobile sites within the past six months.[[17]](#endnote-17) What will it mean now that users have access to over 1,000,000 high-quality images from libraries, museums, and galleries from around the world? What new patterns of use and application will we see in the comings months? What new opportunities will this create for students, teachers, scholars, and librarians?

Academic libraries are also now in the business of providing mobile access to their resources and services. While a 2010 study by University of South Dakota professor Alan Aldrich, found that only 24 of 111 ARL libraries had mobile web sites (i.e., web sites viewable on a smart phone’s web browser),[[18]](#endnote-18) this number is growing and a quick online search reveals that the libraries at Duke, Boston College, Brigham Young, Cornell, Rochester, McGill, British Columbia, MIT, Alberta, Virginia, and several of the University of California libraries, amongst others, are advertising various mobile services and collections.[[19]](#endnote-19) Strategic libraries are meeting demand and expectations where they exist. Cornell University Library, for example, decided to develop a mobile web site based on qualitative and quantitative evidence: data mining revealed a 75% increase in the number of mobile devices accessing library servers in a semester while library staff also noted an increase in the number of students using smart phones on campus.[[20]](#endnote-20) Ryerson University Library in Toronto began to offer mobile services in spring 2009 and gave users a mobile version of their web site and the ability to send a catalog record to their mobile phones or e-mail. They also asked student users what they wanted in a mobile library site. Based on those responses, (which included the ability to book a room; display hours; check an individual student timetable; check a borrower record; search the catalog; and search for articles) they reconfigured their site and between September 2009 and April 2010, it recorded 3,276 unique users. Parts of the site, specifically the student timetable section, received over 10,000 visits.[[21]](#endnote-21)

Libraries are also seeing how smart phones and mobile devices are influencing the larger shift within reference services. In addition to offering in-person support at the reference desk and phone and instant message (IM) assistance, some libraries have also started to advertise reference through text message. Also known as SMS (short message service), text reference questions are “more sensitive, contextual, and ‘directional’ in ways not often seen in other reference channels.”[[22]](#endnote-22) Text reference transactions are also, by definition, much shorter, and messages are usually no more than 160 characters. Google already offers a similar service to anyone with a cell phone.[[23]](#endnote-23) Early adopters like the University of California, Merced, and Bryant University purchased dedicated cell phones for text message reference service,[[24]](#endnote-24) and Dartmouth, Cal Tech, Florida Atlantic, Kent State, Middlebury, Penn, and University of Nevada, Los Vegas, now offer text message reference through a third party service like Mosio’s “Text a Librarian,”[[25]](#endnote-25) which can be integrated with existing IM reference services and workflows. The number of questions received via text message, in comparison to other channels, is still relatively low,[[26]](#endnote-26) but demand may grow as teens, who send and receive an *average* of 3,339 text messages a month, start to populate college and university campuses over the coming years.[[27]](#endnote-27)

QR (quick response) codes present another example of a technology made possible and accessible through smart phones. QR codes are two-dimensional barcodes that are readable by most mobile phones with cameras. The codes can fulfill a variety of uses: they can send users to a web site, pull up an image, map, event details, or dial a phone number. North Americans may only be slightly familiar with QR codes, but members of ACRL will remember that a QR code appeared on the cover of the November 2010 issue of *College & Research Libraries News*.[[28]](#endnote-28) Florida State’s law library is using QR codes in the stacks to help users locate the electronic version of a printed resource and as a way to make their librarians’ contact information available to patrons at the swipe of a mobile phone.[[29]](#endnote-29) The University of Gloucestershire Library in the United Kingdom has added QR codes configured with the automated circulation telephone number in all of their books, making the renewal process infinitely easier.[[30]](#endnote-30) Other examples include using QR codes on library instruction session handouts to send students to web sites, tutorials, or research guides, or to bring up a subject specialist’s contact information. Vendors and information content providers are also increasingly using QR codes: Alexander Street Press announced in July 2010 that they are making all of their online music databases accessible via QR code. In a press release, Alexander Street CEO Stephen Rhind-Tutt was quoted as saying that “QR codes are also terrific promotion tools for libraries—as QR codes grow in popularity, they provide an easy, fun way to steer patrons directly into content they might not know about otherwise.”[[31]](#endnote-31) Users of Alexander Street tools can now also send recordings and playlists to their smart phones or mobile devices using e-mail or text message.

Librarians may be asking themselves where to start. Joe Murphy, a librarian at the Yale science libraries, discussed the notion of “mobile literacy” in his recent presentation at the Handheld Librarian Online Conference.[[32]](#endnote-32) In this instance, however, librarians, perhaps more than users, need the skills to understand and utilize smart phones and new mobile technologies, recognize and analyze trends, and come up with strategic responses. Time and expertise are not infinite and a decision to build and manage mobile services needs to be situated within the context of users, needs, resources, and other pressures. Quick Response codes may not be the best use of your own time or that of your digital services or information technology librarian depending on your user community, but building and promoting a mobile site or integrating mobile tools and collections in instruction sessions may pay more dividends. Many of us also work at institutions where our users do not have personal access to sophisticated mobile devices. Can libraries, like those at Boston College, Virginia Tech, North Carolina State, Miami, and Wake Forest, act as a resource to help these users learn about mobile technologies and improve their own information technology skills by loaning out iPads?[[33]](#endnote-33)

There are a number of resources available to librarians interested in creating and supporting mobile applications, resources, and services. The Handheld Librarian Online Conference (<http://www.handheldlibrarian.org/>) is now in its fourth year and the peer reviewed *Reference Librarian* devoted a recent double issue to the subject of mobile technologies and their uses and applications. In attempting to understand and measure mobile use on your own campus, services like Google Analytics[[34]](#endnote-34) or PercentMobile[[35]](#endnote-35) can help you collect numbers and view trends, as can user surveys. Qualitative evidence is also important: have staff helped smart phone users at the reference or circulation desks or have professors noticed an increase of iPhones, iPads, or Androids in their classrooms? How do our colleagues use iPhones or Androids at work or at home? How do those of us with iPads use them day-to-day?

Smart phones and new mobile devices and technologies have broad applications for reference, instruction, access, collection development, systems, and technical services librarians, all of whom need to develop knowledge of the ways that users and creators and providers of information are engaging with and responding to them. Some of may be thinking that this is yet another bandwagon on which we are expected to jump. Use, demand, and increasing technological developments indicate otherwise and all signs point to smart phones and mobile devices becoming cheaper and even more pervasive at the same time as they become easier to personalize. “Search is me and my interest,” according to outgoing Google CEO Eric E. Schmidt in a keynote presentation to the World Mobile Conference in February 2011.[[36]](#endnote-36) R. Bruce Jensen, a librarian at the University of Pennsylvania, Kutztown, cuts to the chase: “Librarians might not feel an obligation to offer mobile services, any more than a device called a “telephone” is obliged to do anything besides plug into a wall jack, sit on a desk, and ring occasionally. But those doing more will realize greater demand for what they do.”[[37]](#endnote-37)

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