

Where to Go Next

Abstract

Although mobile services to underserved populations are limited at present, truly innovative services based on existing projects are possible. These include augmented reality tools, curation of local media, content creation in libraries, and content creation and sharing platforms for mobile devices. After outlining the possibilities, this chapter provides concrete suggestions for building your own, and your organization's, technological capacity en route to innovation, and argues that mobile services should not be overlooked in the context of diverse populations.

The preceding chapters have given accounts of library services that exist as stated, along with ideas of how to use them to reach out in non-traditional directions. This one will be a proposal for what could be. While it's stitched together from pieces that exist in real libraries, I haven't encountered anything quite like this.

Why speculate? Because in talking to librarians across the country and in a variety of libraries, I've found many who want to implement such services, but few who have. The major barrier isn't specialized technical knowledge—while some is required, it's often no more than a reasonably ambitious and fearless person with access to the Internet can learn. The major barrier is getting others convinced of, and excited by, the possibilities so that the institutional support is there for learning, prototyping, and experimentation. So let's imagine more vivid possibilities. Let us dream more audaciously of technology.

My vision starts with the library values of collections, conversations, and context in community. (See Nate Hill's wonderful thoughts about this, with respect to the Digital Public Library of America, on the Public Library Association blog.¹ One of the compelling strengths of libraries, in our age of information ubiquity, is their hyperlocal knowledge: their ability to collect, preserve, and showcase the unique experience of a community. In other words, they can collect knowledge of local relevance, create conversations around it, and contextualize it in ways that make the experience of information especially rich for their communities.

I believe there's something especially powerful about taking that ability into diverse populations. One of the truisms of minority experiences is that they are not reflected in mainstream media. Our Google Images smartphone users are white businessmen and hipsters, even though that doesn't reflect the statistics. My local paper has a lot of interviews with old-guard Irish and Italian Americans—a traditional political force in greater Boston—but I'm much less likely to see the Brazilian and Central American immigrants who comprise so much of my town's more recent population. Not long before this writing, the hashtag #YesGayYA swept across Twitter as authors, publishers, and agents argued over why gay characters are so rarely protagonists in YA fiction. And just last week, I heard a story on NPR about how the "black best friend" character is so often used to dispense wisdom to white protagonists and highlight their racial tolerance, but so rarely allowed to have his or her own story.²



Figure 10
The home screen of Scan Jose.

I believe libraries are unusually well positioned to surface, and showcase, the unheard stories in their communities. I believe librarians' experience with outreach and technology training are valuable tools toward this end. And I believe, by taking advantage of four tools and ideas that already exist, we could have a uniquely powerful way to create community experiences, develop local collections, and honor patrons' voices.

Showcasing Community Stories

Mobile-Optimized Walking Tour

The first component is a guided walking tour designed for a mobile device: for instance, Scan Jose. With funding from a LSTA grant, the San Jose Public Library engineered an app providing self-guided, smartphone-optimized walking tours of the San Jose downtown area. The app takes advantage of geolocation data to provide walking directions to various landmarks and then to display historical photographs and information about that location from San Jose's collection. Some tours include PDF versions as fallbacks for patrons who lack iOS devices or are having network connectivity problems; the library has also done group tours using its own devices to allow more people to experience Scan Jose. If you'd like to see how it works, you can experience



Figure 11
The beginning of one of the tours.

a limited version of the app at the Scan Jose web site, even if you're not in San Jose (see figures 10–12.).

Another example of this model is NCSU's WolfWalk, a photographic guide to the history of North Carolina State University optimized for mobile devices. Again, this takes advantage of geolocation data to showcase information from the NCSU library's historical collections. A Google Maps mashup shows points of interest; users can go into depth at each site. For instance, at Winston Hall, they can see photos from the 1890s through the present day, including the university president the hall was named after, student protests that took place there during the Iran hostage crisis, and images of the building throughout its lifespan. The photos in turn allow viewers to browse related photos (by date, topic, or location), creating an experience with *Wikipedia*-like addictiveness. Again, you can experience many of the features even if you don't have a mobile device and aren't in North Carolina; try it for yourself (see figures 13–15).

Scan Jose
www.scanjose.org

Information about WolfWalk
www.lib.ncsu.edu/dli/projects/wolfwalk

WolfWalk
<http://m.lib.ncsu.edu/wolfwalk>



Figure 12
Stops on a tour include historic photos, Read More links, and (not shown) directions to the next stop.

These services have two important things in common. First: they draw on the libraries' unique strengths—that is, local collections found nowhere else. Second: they weave the knowledge offered by the library into the world outside. This is the beginning of a community outreach experience, but it needs additional elements to specifically target diverse populations.

Chicago Underground Library

The second component is the Chicago Underground Library. In the words of its mission statement, it is “an all-inclusive collection of Chicago-specific media, produced by and for the community.” It operates on the principles of “open acquisitions,” “obsessive cataloging,” and “ongoing ambitions.”³ That is, it will accept any print media from the Chicago area, without pre-conceptions as to its importance. Thorough descriptive and subject metadata allow for people to find a variety of connections in the works. It hopes to expand to archiving nonprint material as well.

Chicago Underground Library
<http://underground-library.org>

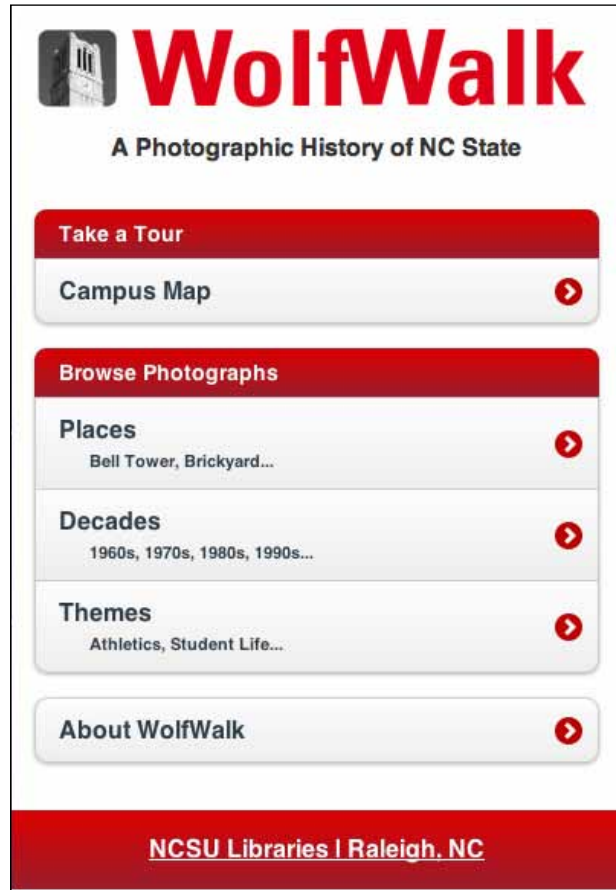


Figure 13
The home screen of WolfWalk.

Content Creation

The third component is content creation in (or through) libraries. This is an avidly discussed trend in libraries today and got mainstream media coverage when *USA Today* reported on the YOUmedia teen space at the Harold Washington Library Center in Chicago.⁴ This digital media center is grounded in anthropological research that says that teens approach technology through the stages of “hanging out,” “messing around,” and “geeking out.” To this end, it has casual areas for teens to play with familiar technology like texting, music, and Facebook, but also has the technology for photo, video, and music editing. Teens near the entrance, with hanging-out technology, will notice teens more intensely engaged in messing-around and geeking-out activities and can easily watch or join in. This means they can be drawn through physical areas along a conceptual spectrum from consumer to creator.

While YOUmedia is an amazing example of what can be done with solid funding (in its case, MacArthur and Pearson Foundation grants, plus a library/city partnership), don't think that you need to have a purpose-built space and expensive equipment to do content



Figure 14
Integration with Google Maps shows points of interest on campus, with links to additional content.

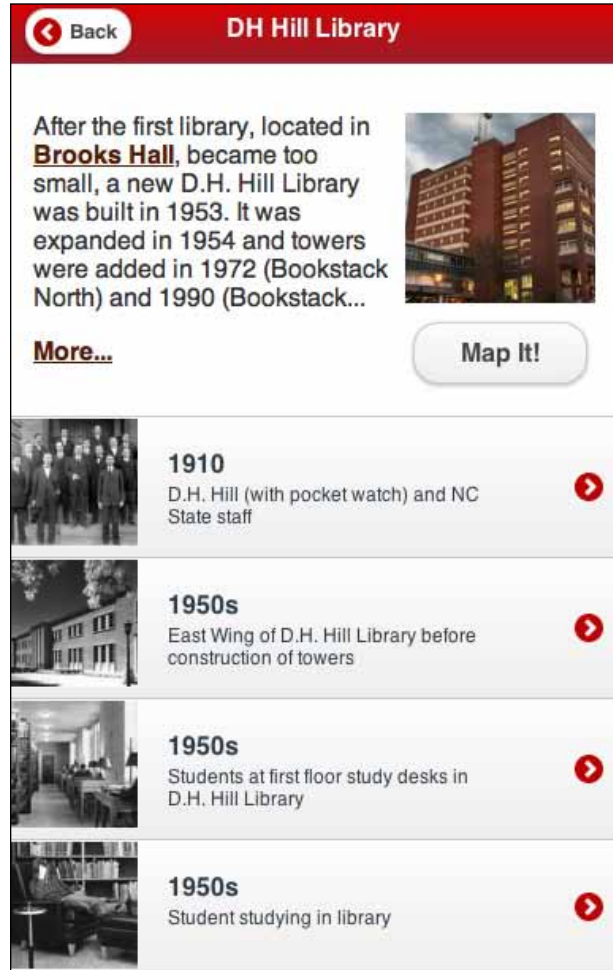


Figure 15
The library page in WolfWalk has narrative, links to historic photos, and map integration.

creation. The LibriVox example in chapter 3 showed what you can do with a \$30 microphone, an old desktop computer that your library probably already has, and the willingness to experiment. For another example, look at teen librarian Justin Hoenke's Make Music at the Library project, chronicled on his blog.⁵ He used his own passion for music and a partnership with a local hip-hop artist to help teens craft and record songs. He also supports his patrons in creating video, performance projects, and writing, all of which can be done with widely available equipment.

Made by Teens: Music
<https://sites.google.com/site/portlandplteens/made-by-teens>

Mobile Devices

The fourth component is, of course, mobile devices themselves. Devices are the portal for experiencing

the library's collections, as in Scan Jose. But they're also the tool for *creating* the collections. Imagine this: patrons take photos of their neighborhoods, telling the stories of the places that matter to them. (According to the Pew *Mobile Access 2010* report, over half of adults have taken photos with their mobile phone.⁶) They then upload them to a digital repository at the library—or to a standard photo-sharing service like Flickr. Ask the patrons to use a particular tag for your project; you can automatically harvest everything with that tag using RSS. (Go to www.flickr.com/photos/tags/yourtaghere and look for the RSS icon near the bottom of the screen.) You can then remix that content anywhere that accepts RSS feeds. (For example, default wordpress.com functionality includes an RSS widget you can drag and drop into your sidebar to automatically display a feed's latest content.) You may also be able to harvest location data from photos. Many newer phones and cameras include EXIF data in photo files, which can include geolocation information, depending

on the device. This lets you map photos to locations in your area (or search for photos taken near you). Now you have the nucleus of a photo essay about your community.

But you can take it further. Pull the photos into a wiki or put them in a content management system that allows free tagging and commenting: now you have a story attached to your photos. Let people record video or audio to attach to the places: now people can listen to the story as well as read it, in as many languages as your community speaks.

And you can take it further still. Put your collection into a location-aware app like WolfWalk or Scan Jose: now people can explore their neighborhoods through the eyes of their neighbors. Augment it, if you like, with historical photographs, and let people see and hear and comment on how things have changed. Create walking tours—neighborhoods as collections—or let people wander serendipitously. Facilitate that serendipity by taking a page from the Google Places book and putting QR codes around your town with some eye-catching library branding to tell people which places are enriched with library content. Or integrate your app with an augmented reality tool like Layar. If your patrons don't resonate with the term "augmented reality," call it "virtual graffiti" or "secret stories."

And yes: take it further still. The collection described so far is built by your patrons who have more tech savvy and more advanced devices, but they're not the only ones who can experience it. Take patrons on walking tours with devices so they can experience (and create) for themselves. Or lend the devices so they can have that experience independently. Or host library workshops on digital content creation to empower patrons to do more with the devices they own or you lend. Or bring people into the library to write and narrate stories about the photos in your collection.

You now have a collection that's rich with local context, that surfaces local voices and spreads digital literacy. Use it to spark conversations—maybe among people who wouldn't otherwise talk to one another. Identify more tech-savvy patrons that you can partner with less tech-savvy ones so they can teach their neighbors. Pair a teen and a senior and see what kind of conversations they have about technology and local history. Leverage the local knowledge of long-time residents to help newcomers understand your area. Bring together people from different backgrounds to see, and talk about, the different ways they experience the same space and how that experience has changed over time.

What I've just described is, in one sense, a mobile, location-aware augmented reality application, hosted and facilitated by the library. But in another sense, it's the library helping to tell the story of a community in its own voices. We all have stories.

Building Your Own Technological Capacity

How do you get started on a project like this? What if you don't have a ton of technical knowledge, or you don't have a lot of confidence in the knowledge you do have?

Just start. Start by dreaming. As Jason Griffey says in *Mobile Technology and Libraries*: "So, think of all of the things your library does, from acquisitions to instruction. How can these things be embedded in people's lives? What could you accomplish if your patrons could be in contact with you not at any point in their day, but at every point in their day?"⁷⁷

You'll be able to come up with more creative dreams, and more ideas of how to implement them, if you monitor tech news sources. Ideally this includes a mix of library and nonlibrary experts. Since you're reading an issue of *Library Technology Reports*, you may well already be doing this. However, if you're looking for more ideas, there's a list of options in the resources section at the end of this chapter.

Once you have an idea, set out to prototype it. When it doesn't work—it probably won't, the first time—figure out why. Don't frame this as incompetence. Frame this as an *information need*: this is your prototype telling you about the holes in your knowledge. You're a librarian. You're great at identifying information needs and finding resources to meet them.

You may think you don't have the background knowledge to implement a prototype, but here's a dirty little secret of technology: you don't have to know very much, or implement things very elegantly, to come up with a real thing that works for people. (The programmers in the audience may be nodding their heads in understanding right now.) There's a huge volume of knowledge involved in doing things *well*, but comparatively very little in getting started.

If you get stuck along the way, though, here are four resources to try:

- Google. Especially if you're writing code, chances are good someone has already solved the problem. Find out how they did it. (If you're stuck on an error message, copy and paste that into Google.)
- Books. Librarians love books, right? If there's an O'Reilly Media book covering what you're trying to do, get it.
- Classes. Sometimes it's nice to have someone hold your hand or give you an excuse to learn things.
- Other people. This is the best resource if you can get it, not only because people can tailor their explanations to your individual needs, but because spending time with other technologists will expose you to best practices and new possibilities and feed your creative spark. Following them on social media is a start, but even better is

to look for tech-related meetups in your area, to go to conferences (even if they're virtual!) with an eye toward meeting people, to go to places in your area where technologists congregate, and to collaborate with other technologists (whether or not they are librarians or part of your institution).

What if you feel you don't have the technical skills to prototype the service you'd like to see? Again, I urge collaboration, but I also encourage you to learn. The single biggest difference I have seen between people who have substantial technical skills and those who do not isn't intelligence or education—indeed, many prominent technologists have little formal education in the subject. The main differentiator is *fearlessness*. If you have the confidence to try to build something, and fail, and try again—to read through code or documentation you don't understand without being afraid because you're willing to fight through until it makes sense—you have the fundamental skill you need to build things with software. And I'd like to push you farther on that path. So here are ten easy things you can do right now to increase your knowledge of and competence with the technologies discussed in this report:

- Use a smartphone, e-reader, or tablet (or whatever other gadget has just come out). If you don't have one, borrow one. Explore all the features and settings you can find. Then try to use the library through that device. What can you do? What can't you? What's easy? What's needlessly difficult—and what makes it difficult? How does the mobile Web look different from the desktop version? If you can get your hands on multiple devices, how do they differ? What inspiring things could this gadget do that your library doesn't (presently) support?
- Set up a blog on WordPress.com. Write a post. Customize the theme. Search for, and install, a plugin through the dashboard interface.
- View source on a webpage. Every web browser lets you see the code it's using to generate the page you're looking at. The command varies in different browsers, but it's probably under the View menu, with the word *Source* in it. If you compare the code to what you see, you can figure out what some of it does. If you get stuck, there are tutorials at W3Schools.com (look for the HTML tutorials). Many of these will let you type in your own code and see what the result looks like. Then tweak what you've typed and see what changes.
- Look at the stylesheets, too. (When you're viewing source, there will be a line that looks something like `<link href="someurl.css" type="text/css" rel="stylesheet">`. The part after href is what you want.) Again, compare the code to what you see. Can you find things that control the color, size, shape, or location of objects on the page? Again, there are tutorials at W3Schools.com—look for the CSS tutorials.
- Start reading a tech blog, news site, or mailing list: for instance, one of the ones listed above. It's okay if you don't understand everything they're talking about—in fact, it's better (you're learning). Google the unfamiliar terms if they're interesting. But mostly, listen to the sense of possibility that underpins the conversations. Look for where the cutting edge is. How do people who are passionate about tech think and talk about it? What are they excited about building? For extra credit, subscribe to, and read, your source with an RSS reader (or other appropriate app) on a mobile device.
- Pick a service from this report that you're unfamiliar with. Go to its website and explore everything it offers. Think about how that might, or might not, translate to your library.
- Then pick another service and compare. What do the differences tell you about what sorts of things might be possible, and where limitations might come in?
- Pick something. Try it. Sketch out a plan, build a prototype.
- Write a program. Python is a beginner-friendly language, and Google's Python Class is a great tutorial covering the basics. If you have never programmed anything before, some of the terminology here will be unfamiliar. Again, be fearless. You can look up the meanings of words. You can run the sample code even if you don't understand all the words. You can try making small changes to the code and see how it affects the output. And if you're really stuck, find someone to ask for help. (You can ask me.)
- Assume it's possible. It probably is. Don't think, "I don't know how to do this, so I can't." Instead: "There's a way to do anything I can imagine; I just have to figure out how." If a patron asked you how to accomplish something, you'd come up with some answers, right? You wouldn't give up until that patron had some great ideas to work with. Do the reference interview with yourself, and find answers.

WordPress.com
http://wordpress.com

W3Schools.com
www.w3schools.com

Google's Python Class
http://code.google.com/edu/languages/google-python-class

Building Your Organization's Technological Capacity

One thing that came up repeatedly as I talked to librarians across the country in preparing this report is that the greatest barrier to implementing these services is knowledge. Librarians who have pressed, unsuccessfully, for mobile services to be implemented speak of their colleagues' lack of vision for the possibilities offered by the technology. Librarians who have implemented services sometimes talk of being the only one on staff with the ability to do so. While one person can—with a remarkably small knowledge of programming!—implement impressive and useful things, one person alone often cannot maintain the service as technology changes or expand it beyond a pilot stage. Furthermore, libraries that rely on a single person to implement mobile services are highly vulnerable if that person leaves. If you're the designated single person who knows about technology, how can you encourage others to learn more?

Use new devices. Get together a collection of different device types, whether from your own collection or your staff's personal technology, and have a technology petting zoo—a low-stress, playful way to encourage exploration and competence. Or put together a tech focus group, involving staff (and patrons!) who use different kinds of technology. Talk about how you use them, and how you'd like to. Explore how library services look different on different devices.

Provide training. While some people are happy to dive in and explore unfamiliar technology, others need more explicit training. This will not only enable them to use technology, but reduce fear (which may be driving them to reflexively oppose change) and help them help patrons. Jason Griffey's *Mobile Technology and Libraries* has good suggestions about doing this in the context of an academic library; Jessamyn West's *Without a Net* has practical advice on teaching technology to people with extremely low levels of familiarity and high levels of technostress.⁸ Keep in mind that people may need training, not just on technology, but also on the norms of using it. Also keep in mind that, if you're the lone tech-savvy person, you probably need to break down your teaching into much smaller steps than you are used to.

Think interdisciplinary. Mobile services can be inherently interdisciplinary. In fact, most of the services discussed in this book have both a back-office IT component and a patron-facing, human-interaction component; technology inherently crosses the reference/technical services boundary. You may need to start in one or two departments that are most comfortable with technology and roll it out from there, but think about how technology can be used to break silos, too.

Establish communities of interest or practice. Training can be formal, but it can also be informal and staff-led. Three possibilities:

1. Bring people together for lunchtime tech talks (food is a great incentive), and have them take turns sharing a technology of interest. It's okay if it's not a hugely advanced one; the most important thing is to build a culture where discussing technology, and even leading discussions of it, is the norm.
2. Run a 23 Things program, and if at all possible find a way to give prizes or professional development credits to people who successfully complete it. For examples, see Helene Blowers' original Charlotte-Mecklenburg 23 Things program or Vermont's statewide initiative.
3. Think about how you can use online training materials to create a culture of self-teaching and to spawn self-sustaining communities of learners. Emily Clasper discussed how she's doing this for her library consortium at Internet Librarian 2011; her slides are available online.

Charlotte-Mecklenburg 23 Things

<http://plcmcl2-things.blogspot.com>

Vermont's 23 Things

<http://vermontlibrarieslearn.wordpress.com>

From Training to Learning, Emily Clasper

www.slideshare.net/eclasper1/from-training-to-learning-9779321

Share! If you're built something, don't hide it. Tell your colleagues, local media, and library technologists nationwide what you did and how you did it. Provide step-by-step instructions and lessons learned. Document your work in central, authoritative sources like the Library Success wiki, not just your website. If there's code, give it an open-source license and put it up on your website or—better yet—a standard, shared repository like GitHub or SourceForge. Don't make others reinvent the wheel.

Library Success wiki

www.libsuccess.org

It's easy to be overwhelmed by the process of putting together a new tool or service and to feel like we're done as soon as it works. But we're not; documentation, assessment, and knowledge diffusion need to be part of the plan from the beginning. Unless we not only

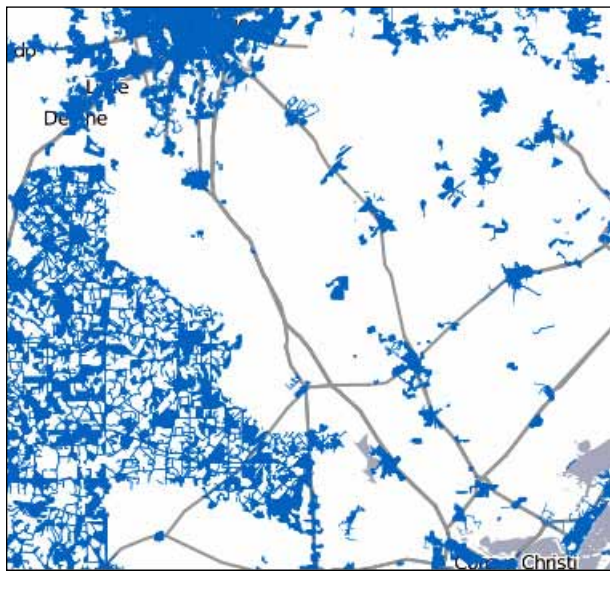


Figure 16
Broadband coverage, all types of broadband. The heavily connected circle in the top left is San Antonio; Corpus Christi is in the lower right. Coastal Bend’s service area is along, and south of, Interstate 37 (the grey line roughly through the center of this image). Source: National Broadband Map, www.broadbandmap.gov/technology.



Figure 17
Mobile wireless coverage of the same area. Source: National Broadband Map, www.broadbandmap.gov/technology.

consider what we learned, but how others can learn, we’re not getting maximum benefit from technology.

Parting Thoughts: Why Mobile?

My hope, in writing this *LTR*, was that I’d find a few innovative examples of libraries using mobile technology in unexpected ways, write case studies, and be done. Instead, what I found was enormous talent and optimism from librarians nationwide, coupled with frustration that they weren’t able to apply it in these directions.

Maybe this is simply the wrong direction to be looking. Maybe there are not enough prospective patrons, outside of white affluent academia, who can be reached by mobile technologies. Maybe the librarians with the skills to implement such services aren’t in those places.

I don’t believe this, though. I spoke to tech-savvy librarians at a wide range of institutions in very different regions of the country. I know from personal experience that you can go a long way with remarkably little knowledge of hardware and code as long as you’re willing to try. And the device penetration and usage statistics from Pew are simply staggering. Yes, cutting-edge devices are likely to always be in the hands of the wealthy and highly educated, and yes, availability varies geographically in ways that are poorly reflected

by many of our (often national level) statistics. Yet the patterns of device usage and ownership we see don’t conform to naive stereotypes.

Here is an example. One of the people I corresponded with in preparing this report was Lisa Craig-Young, a reference and instruction librarian at Coastal Bend College in Texas. In her words, “Our college covers 9 counties; we have one main campus and 3 satellite campuses, and we are a Hispanic-serving institution. The median income of most of the population is <\$40,000 per household and persons living in poverty range from 20–30% depending on location.” And she says iPhones are “very popular” among her students.

At first, this blew my mind. A low-income, largely rural Hispanic population working on their associates’ degrees (Coastal Bend is a community college) is not exactly the stereotype of iPhone users. But as I read more widely about smartphone adoption, and as Ms. Craig-Young told me more about her patrons, it started to make sense.

An iPhone is mind-boggling in this context if you think about it as substituting for a *phone*. It’s not. The iPhone is substituting for a desktop or laptop computer—a more expensive device that many of her patrons do not own. And its data plan is substituting for home broadband access, which many of her patrons can’t get (whereas wireless coverage is much more widespread); see figures 16 and 17.

The phenomenon of leapfrogging—where cell service has become widespread among populations that never owned a landline phone—is well known

in developing countries. Craig-Young's patrons are showing a different kind of leapfrogging: skipping straight past the "normal" desktop experience of the Internet to a mobile one. In a world where Android smartphones are free and wireless data plans more widely available than home broadband, this is a wholly rational, comparatively frugal way for people to own their own computing power and Internet access. But in a world where online interfaces, and library services, are designed desktop-first, mobile-later-maybe-never, these patrons are shut out of increasingly important ways to participate in political, civic, and cultural life.

I've come to believe in writing this report that we can, and should, be doing more than we are to take advantage of technology. Many things are easier, and cheaper, to implement than they seem. The opportunities we can create by being able to write only a few dozen lines of code—or even adapt someone else's!—are enormous. The services that make sense vary by population, and only your local knowledge can address that, particularly as many statistics are collected only on a national level. But those national statistics tell a more nuanced tale than stereotypes and media images paint. They show that there is potential for widespread, intriguing, and audacious use of mobile technology in library services, if only we don't assume that there's not.

Resources

While these resources are divided into library and non-library sources, I strongly believe that a good library tech education requires paying attention to both. The library sources are more likely to discuss how technologies dovetail with library possibilities or have been implemented in libraries; the nonlibrary sources show a broader range of perspectives (which includes what your patrons may be thinking!) and often run closer to the bleeding edge.

Library Blogs and Columns That Focus on or Frequently Discuss Technology

- ALA TechSource Blog
www.alatechsource.org/blog
- Digital Libraries
<http://blog.libraryjournal.com/tennantdigitallibraries>
- The Harvard Library Innovation Laboratory
<http://librarylab.law.harvard.edu/blog>
- Librarian in Black
<http://librarianinblack.net>
- Perpetual Beta
<http://americanlibrariesmagazine.org/perpetualbeta>

- The Public Library Association blog
<http://plablog.org>
- Self-Plagiarism Is Style
www.daveyp.com/blog

General Tech News and Analysis

- Ars Technica
<http://arstechnica.com>
- Mashable
<http://mashable.com>
- ReadWriteWeb
www.readwriteweb.com
- TechDirt
www.techdirt.com
- Wired
www.wired.com

Miscellany

- David Weinberger
www.hyperorg.com/blogger
- The Berkman Center's blog
<http://cyber.law.harvard.edu/news>
- The Berkman Center's podcasts
<http://cyber.law.harvard.edu/interactive>
- Hacker News
<http://news.ycombinator.org>
This is the water cooler, or fire hose, for tech start-ups; don't try to read it all, but it's great for seeing what hackers care about these days, and why.
- A List Apart
www.alistapart.com
Website design and development.
- Programmable Web
www.programmableweb.com
Want an API? They have you covered. Also a good source of inspiration: every API is a window into things you can build with code.
- Smashing Apps
www.smashingapps.com
Free resources for designers.

Many of these organizations or authors also have Twitter, Facebook, and/or G+ presences as well as RSS feeds.

Notes

1. Nate Hill, "A Suggested Approach for the Digital Public Library of America," *The PLA Blog*, Public Library Association, May 18, 2011, <http://plablog.org/2011/05/a-suggested-approach-for-the-digital-public-library-of-america.html>.
2. Eric Deggans, "How TV Shows Use BBFs to Appear Racially Diverse," *Morning Edition*, NPR, Oct. 11, 2011, www.npr.org/2011/10/11/141227508/on-tv-the-black-best-friend-concept-is-growing.

3. "About," Read/Write Library Chicago, <http://readwritelibrary.org/about>.
4. Greg Toppo, "Digital Library Aims to Expand Kids' Media Literacy," *USA Today*, Oct. 10, 2011, www.usatoday.com/news/education/story/2011-10-09/chicago-teens-build-media-literacy-in-digital-library/50714312/1.
5. Justin Hoenke, *Justin the Librarian* (blog), posts tagged "Make Music at the Library," <http://justinthe librarian.wordpress.com/category/libraries/make-music-at-the-library-libraries>.
6. Aaron Smith, *Mobile Access 2010* (Washington, DC: Pew Internet & American Life Project, 2010), www.pewinternet.org/Reports/2010/Mobile-Access-2010.aspx, 2.
7. Jason Griffey, *Mobile Technology and Libraries*, The Tech Set #2, ed. Ellyssa Kroski (New York: Neal-Schuman, 2010).
8. Griffey, *Mobile Technology and Libraries*; Jessamyn C. West, *Without a Net: Librarians Bridging the Digital Divide* (Santa Barbara: Libraries Unlimited, 2011).