



Bridging the Other Digital Divide

There is a digital divide. Not the one between the technology haves and have-nots, though that is very real, but rather one between the physical world and the online world. These two worlds often have little meaningful connection. Until recently, the only initiative librarians have taken to bring these worlds together is to advertise their library's website somewhere in the physical space or to encourage users of virtual services that the physical space is open, welcoming, and full of great stuff to explore with comfy chairs from which to do it. Oh, and of course, good coffee.

There is great value, however, in bringing the physical and the online closer together. This convergence is a trend rapidly gaining momentum in the world at large. For example, do users sitting in your library reading a journal know that they can access the most recent issue, newer most likely than the one they're holding in their hand, via the library's ejournals holdings? Further, is it easy for them to make the leap from print to online? Would they need to know to ask? It's really all about leveraging, in the physical space, the insights we've gained from our experiences in our online world, as well as with our electronic products and services, in order to provide users a high-quality, low-friction experience.

This trend toward a convergence between the physical and the virtual encompasses a number of different tools and technologies. To an extent, it includes what's called the Internet of Things, physical objects tied in some way to the online world. However, it's both bigger and smaller than that. Bigger in that we're not talking about just connecting things to the internet, but rather leveraging all the work we librarians have put into our electronic universes in our physical spaces. And smaller in that many of the tools and techniques to foster this convergence are more evolutionary than revolutionary. We have knowledge, resources, information, tools, and experiences from online that we can and should exploit offline. We've invested a great deal of time, effort, and money in and for these, so how can we maximize our ROI with them?

A number of practical tools and approaches exist that libraries can implement now, quickly and easily, to make this convergence real. Merging the physical and online worlds isn't as futuristic as it first appears.

RFID

An early and familiar example of adding intelligence to physical items is the use of RFID (radio frequency identification) by libraries for their physical collections. RFID has been around for years; it works by encoding information onto a tag that's then placed on or into a physical object, in this case a book. The tag broadcasts information about itself that can be read by an RFID reader. For library books, that's usually title, author, call number, and collection location. Many libraries use RFID, but as in the commercial world, it functions best as a tool for security and inventory control.



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While efficiencies in these areas are welcome—and certainly being able to more quickly and easily locate a misshelved item is good service—users only passively benefit from the technology. Additionally, there's the cost factor. Individual RFID tags are by no means expensive in and of themselves, but they're not free either. And touching every item in your physical collection? That takes a lot of time and effort.

Though RFID doesn't quite get us to convergence between the online and physical worlds, there are some interesting things being done with the technology. A company called Violet (www.violet.net), most famous for its very cute Nabaztag RFID reader, offers a product called Book:z, special RFID-tagged books such as *Cinderella* or *Goldilocks and the Three Bears* that, when shown to the Nabaztag reader, begin reading themselves out loud. Pretty cool.

QR CODES

A technology that comes closer to the frictionless convergence of online and the real world, however, is QR, or Quick Response, codes. QR codes are big and are getting bigger, in one case quite literally. For this year's celebration of Internet Week, New York outfitted Times Square with giant QR codes to advertise information from and about several city agencies. Chances are you've seen a QR code.

QR codes owe part of their popularity to the fact that they don't require specialized hardware like an RFID reader but instead use the camera on a smartphone. Along with a camera and a data connection, all the user needs is a reader app or software, which in most cases are free downloads. A QR code can then link to a URL and open webpages, read text, contact information, or SMS.

The efficiency here is that the user need not enter text, remember a URL, or write down instructions; these things can be embedded in the code and trigger automatically when the code is scanned. Remembering URLs, or other strings of information, is difficult; typing on smartphone keyboards is bearable at best; and writing information down? That's so last century. The beauty of QR codes is that

they can perform all of these tasks for you, easily, on a device you almost always have with you.

Some libraries are already using QR codes by embedding them in catalog records. The codes in this case contain text, the citation for the referenced item. A user can snap the image of the code to save the book citation information, no typing required.

How else might libraries use them? Here are a few ideas:

- Embed QR codes on event posters. The code can link to a URL with more information, audio or video, a sign-up form, a telephone number, or other information.
- Put QR codes on your print magazines and journals that link to their online counterparts.
- Create a personal QR code with as much or as little information as you want and include it in your email signature file, on a personal website or blog, or on a conference or ID badge.
- Place QR codes in books that link to your catalog's online renewal process.
- Have a library app? Use a QR code for a "snap to download" feature.

CREATING QR CODES

You can find a number of free online QR code generators. You simply specify the type of information you wish to embed, input the information itself, and *voilà*, the code is generated. Usually, you can also specify the physical size of the code that will be generated. You might want a smaller code to include at the bottom of an event poster but a larger one to post on the side of your journal stacks. The generators create the image. From there, you need to download it and then either print or embed it.

- Kaywa: <http://qrcode.kaywa.com>
- iCandy: <http://icandy.ricohinnovations.com/rocket2>
- Nokia (automatically creates a QR code in vCard format for contact information): <http://mobilecodes.nokia.com/create.jsp>
- Delivr: <http://delivr.com/qr-code-generator>



An example of a QR code for ONLINE's website, www.infotoday.com/online



The University of Bath, U.K., embeds a QR code in its catalog.

READING QR CODES

To find reader apps available for different smartphone platforms, just search your app store for “barcode” or “QR” and you should find what you need. A few of the more popular ones include these:

- iPhone
 - RedLaser
 - ShopSavvy
- Android
 - ShopSavvy
 - Barcode Scanner
- BlackBerry
 - iNigma (<http://i-nigma.com/supporteddevices.html>)

In my November/December 2009 column, “Location, Location, Location,” I talked about the advantages of creating and claiming your library’s “small business” listing on Google. This listing will appear in Google mobile search results based on location. Doing this will make you infinitely more findable. If you haven’t done it yet, here’s another incentive: Once you create and verify your listing, Google generates a QR code that you can download and use any way you like. Post it on the front door of your library and, with a single snap, users will be connected to your Google local listing, which can include almost any information you’d like, such as contact info, hours, URLs for the catalog, website, and anything else you might want to include. Google’s URL shortening service, goo.gl, also automatically generates a QR code for every shortened URL.

There’s speculation that Facebook will soon be autogenerating QR codes for every profile. If your library has a Facebook page, there’s a good chance you’ll be getting a QR code for it sometime soon. Facebook is also sending out window decals with text-to-Like SMS instructions to select local businesses. Anyone who responds becomes a fan. While these are only going out to select ad-buying businesses, it’s likely that they’ll be rolled out to more and more page holders in the future.

Then there are the “follow me on twitter @ [user name]” stickers (created by independent companies rather than Twitter itself) floating around. While each of these companies has very specific business-driven reasons for pushing this type of physical-to-online promotion, the end result is convergence. Promoting your Facebook page or Twitter stream in your online environment is a no-brainer, but libraries and other concerns can do more to create more seamlessness between the physical and the virtual.

LIBRARIES BRIDGING THE DIVIDE

While we wander through the library, snapping QR codes and using RFID-based self-checkout, friction occurs between what we say and do online versus what we say and do in our physical spaces. This is low-tech, true, but so are window stickers.

Libraries have invested a great deal of time and effort to make sure their online presence is friendly and highly



Google Maps includes a placer code.

usable. We’re banishing jargon from our sites, as “reference” becomes “ask” and “circulation” becomes “check-out.” However, in the spirit of convergence, ask yourselves if this type of user friendliness carries over to your physical spaces. Some library users we will never see in person; others we see in person but know they will never use our websites. Recognize, however, that many users are hybrid users, users of both our physical and online spaces. Would a user of your website who is accustomed to Ask-a-Librarian see the same when they enter your building? Or will they be greeted by a large and confusing “Reference Desk” sign? It’s obviously lower cost to make way-finding improvements in an online environment than it is in the physical. But, on the other hand, there’s little reason to expect that visitors to our physical spaces understand what we mean when we refer to “databases” as a user of our website would.

Our online environments continue to expand and get richer. We’re adding new content and services; we’re introducing new ways of communicating with patrons and allowing them to get information from us. Yet our physical spaces continue to be important destinations for our communities and our users. Until recently, we had few options for leveraging online objects with the insights we’ve gained from interacting online in our offline spaces.

Thanks to location-based services, RFID, QR codes, and other technologies, it’s now possible to augment a user’s real-world experience of the library with all of the richness of our online collections, services, and other information. This benefits the user experience and, at the same time, provides libraries with a greater ROI in the digital realm. That’s a win-win scenario.

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