Chapter 4

Odd or Unusual Technology

Abstract

This chapter of "Gadgets and Gizmos: Personal Electronics and the Library" discusses technologies that defy easy categorization, gadgets that are interesting but don't have obvious use cases in libraries, and provides a concluding summary of the entire report.

While the technologies discussed in this chapter may not have the most obvious applications, I'm going to suggest a few uses. Nonetheless, technology and abilities are intriguing in their own right, and I think that they might be a nice technological addition to the right library.

Chumby

First up is the Chumby (see figure 16), a sma[ll] screen–based computer that runs widgets th[at allow] you to access content delivered wirelessly from t[he Web.] There are two types of Chumbys, the Chumby Cla[ssic and] the newer Chumby One. If you aren't familiar w[ith the] Chumby, the original was released in February 20[08 and] sort of resembles a soft football with an embedded [screen.] The Chumby One was released in 2009 and is remi[niscent] of a 1970s science fiction design, white plastic w[ith a] large control knob on the side. The Chumby Cla[ssic is] currently available for $149, while the Chumby O[ne will] set you back $119.[1]

So what's so interesting about the Chumby? S[everal] things, not the least of which is that it's one of th[e few] devices that is open source, not only in terms [of] the software it runs (it uses a variety of the Linux operating system) but also with its hard-ware. The makers of the Chumby provide schematics for the device and encourage people to hack theirs in both form and function. If you wished, you could download the schematics, the CAD files, and all the rest of it, and build your own entirely from scratch.

One of the huge advantages, if these are to be used in public spaces, is that you can manage behavior, content, channels, and more directly from the Web. Changes that you make on the Chumby website are then pushed to the individual units, making managing these on an enterprise level very simple.

Figure 16
The Chumby

Gadgets and Gizmos: Personal Electronics and the Library **Jason Griffey**

For the most part, though, that's not why it's interesting to users. The reason that I think it may have some application to libraries is that it is, more or less, an information delivery terminal. The Chumby allows you to generate "channels" of content from widgets, including things like RSS readers, Flickr pictures, and more. The device is operated via touch screen, and since the widget architecture is completely open, you can build your own widgets for the device. I'm thinking of these as small, embedded signage that just so happens to be wirelessly connected to the Web. Scatter them around your library with them all running your hours, or your computer availability page, and see how people react to them.

Sony Dash

Sony just announced the Dash, a sort of smart clock radio that runs the Chumby operating system. It's got a screen double the size of the Chumby at 7 inches diagonally with a cost that is proportional ($199).[2] But it enters the market with the entire Chumby widget catalog for its use and is a bit more stylish than the Chumby, with a touch of the Sony style. A few reviewers called it the most expensive clock radio ever, but it could be used interestingly in public spaces as a portal to the information that you set up. At $199, it's actually getting into the realm of a cheap netbook as far as pricing goes, but as a managed solution for the distribution of specific information to patrons, it's still a decent option.

Nabaztag

Possibly the oddest gadget in this issue of *Library Technology Reports*, the Nabaztag is here because the company that makes it, Violet, is doing very interesting things with RFID—something that libraries should be familiar with—even to the point of publishing books with RFID built in that interacts with the Nabaztag. So what is a Nabaztag? It's an electronic, wireless, RFID-enabled, voice-controlled, and socially networked rabbit (see figure 17).

The Nabaztag is an experiment in interactivity and personality, giving a friendly, cute form to a device that at its essence is a sort of RSS-to-speech device. The rabbit will speak messages sent to it online, read RSS feeds to

Figure 17
The Nabaztag. Yes, I said it was a rabbit.

you, play Internet radio stations, and interact with RFID in the form of Ztamp:s that you purchase from Violet. The tags can trigger events that you set up via the Web for your rabbit. This would be used for something like tossing your keys (marked with an RFID) into a basket near your Nabaztag and having it greet you and then read you the news.

For libraries, one of the most interesting things that Violet is doing with the Nabaztag is producing books with RFID built in that the Nabaztag recognizes. Show your rabbit *Cinderella* and it will start reading the book to you. Get interrupted somehow, and the rabbit remembers where you were and starts from where you left off.

Violet also makes a line of RFID-enabled objects that would be interesting to play with in a library setting. Their Mir:ror is an RFID reader with a USB interface that will allow tagged items to launch programs and such on a desktop computer, and they sell the aforementioned Ztamp:s as simple tags that you can attach to objects of your choice. These, combined with an oversized display in a public area of a library could be a really interesting way to have people interact with your collection. A table full of objects (books, realia, anatomical models, whatever) that are marked with an RFID and launch their particular

digital objects on the display could lead to some really interesting patron-collection interactions.

Just to keep things fun, they also have mini-Nabaztags called Nano:ztags that are themselves just RFID tags. These could also be the backbone of a very unusual control interface for a computer system or part of an art project or any number of other things that bridge the physical and digital realms.

Maker Culture and the Arduino

With libraries increasingly paying attention to Open Source software over the last few years and many libraries using a range of Open Source software to do everything from manage their collections to reach out to their patrons, I am unaware of any libraries embracing open source hardware. Over the last 5 years or so, there has been an explosion online of hardware hackers experimenting and building their own gadgets, and an entire subculture exists to support them.

The publication of record for hardware hackers seems to be Make Magazine, which is dedicated to bringing a do-it-yourself mindset into technology. The rallying cry of a Maker is "If you can't open it, you don't own it" and the writers for Make have detailed instructions for making everything from a kite photography rig to how to build a hydrogen rocket from 2 liter soda bottles. If I were in charge of a Young Adult section of a Public library, Make and its projects would be very near the top of my collection list.

Make
http://makezine.com

In addition to their own magazine, Makers increasingly have their own spaces. Most large cities have some form of Maker or Hacker space, defined on hackerspaces as "community-operated physical places, where people can meet and work on their projects." Libraries have traditionally been "come in a learn stuff" places, but there's no necessary reason that they couldn't also be, as another Maker slogan says, "get excited and make stuff" places.

HackerspaceWiki
http://hackerspaces.org/wiki

There is one other hardware bit that I wanted to highlight, and it's probably the most successful piece of open source hardware to date: the Arduino board. The arduino is an fully open hardware board with inputs for

sensors, outputs for controlling just about anything you can think of, and a programming language to make it all happen. People have used Arduino boards to build everything from musical instruments to sensors that Twitter you when your plants need water. It's not a large step to see how one could use this type of device in a library setting. For instance, you could create a simple people-counter, triggered via infrared beam or laser, that would be far less expensive than a commercial unit. The possibilities for what you can build with the Arduino are just about endless.

Arduino
www.arduino.cc

The end-game of this new and open creation of hardware is to be found in the transformation of information into the physical. No less a technology thought-leader than Chris Anderson, the editor-in-chief of Wired Magazine and the author of The Long Tail, is certain that the future is going to bring a revolution in the physical over the virtual. His latest writing on the matter is an article in Wired entitled "In the Next Industrial Revolution, Atoms are the new Bits."

In "Atoms", Anderson breaks down how technology is reducing the cost of the physical, and how things like affordable three dimensional printers and computer-driven milling machines are driving a local, affordable Making revolution. In his article, Anderson sums it up as follows:

> Transformative change happens when industries democratize, when they're ripped from the sole domain of companies, governments, and other institutions and handed over to regular folks. The Internet democratized publishing, broadcasting, and communications, and the consequence was a massive increase in the range of both participation and participants in everything digital—the long tail of bits.
>
> Now the same is happening to manufacturing—the long tail of things.[3]

While I don't have the room to fully flesh out Anderson's argument here, the article is definitely worth reading, as it explores what could be the next technological revolution of our times. How do libraries fit into this? In my view, libraries have always been at the forefront of the democratization of information. We have moved from guardians of physical objects (scrolls, tomes, books) to enablers of access, and now further to guides among the increasingly complicated information ecology. It appears that we are now on the cusp of the ability to transform information and ideas into objects at a whim, creating new things almost literally from thin air. Wouldn't it be ironic if, after years of increasingly abstract dealings with

the physical, libraries became an integral part in enabling the public to become Makers?

Conclusion

When I first conceived this issue of *Library Technology Reports,* my goal was to highlight certain types of personal electronics that I felt were either generally useful for libraries or interesting for libraries to think about. This morphed a bit when it became clear that 2010 was going to be the year that e-readers exploded, and my trip to CES 2010 in Las Vegas confirmed that. I must have tested thirty or forty different new e-readers while I was there. As this issue progressed, it became apparent that most of what I had to say was focused around the e-reader and trying to accurately report to libraries on what was out there and what to expect.

But I didn't want this to be about just e-readers. I wanted to highlight some of the best-of-breed personal electronics available. The gadget world is wide and varied, and the choices that individuals make are often driven by a huge number of variables and unknowns. By choosing carefully what to highlight, I hope to have reduced the decision fatigue for buying personal electronics for you and for your library.

In addition, I'm hoping that maybe you saw things you hadn't seen before, and my wildest desire is that at some point while reading this, you said, "I had no idea you could do that." If even one of you found something extraordinary in one of the gadgets on these pages, I will count this as a success.

There has been a mantra among the connected librarians of the world over the last few years: "Don't be afraid to fail." Thomas Edison is often quoted for his sayings about failure, and one of my personal favorites is "I am not discouraged, because every wrong attempt discarded is another step forward."[4] This is never more true than when it comes to libraries and technology. Not everything you try will succeed, and some experiments with hard-ware will just not click at all with your patrons, staff, or processes. And that's just fine; as a matter of fact, if you aren't failing, then you aren't trying enough things.

Gadgets give you the opportunity to show off new and exciting technologies to those who may never own one for themselves, in much the same way that libraries have found that providing computers and Internet access was an important function of the late twentieth-century library. They allow you to extend your services and do more with less. If you haven't tried out an e-reader or an iPod Touch, or if you just think the idea of a talking electronic rabbit is odd enough to be interesting, try some gadgets out in your library. You might be surprised how much you, and your patrons, like them.

We're moving into the period of time when, as I said in my introduction, content and container are distinct. Librarians are very good at dealing with content . . . it's what we are trained for. I hope that this gave you an introduction to the containers of our content in the new digital world.

Now get out there and play with stuff!

Notes

1. Chumby website, www.chumby.com (accessed Jan. 28, 2010).
2. "Dash Personal Internet Viewer," Sony Style USA website, www.sonystyle.com/webapp/wcs/stores/servlet/CategoryDisplay?catalogId=10551&storeId=10151&langId=-1&categoryId=8198552921644695998 (accessed Jan. 28, 2010).
3. Chris Anderson, "In the Next Industrial Revolution, Atoms Are the New Bits," Wired.com, http://www.wired.com/magazine/2010/01/ff_newrevolution/ (accessed Mar. 10, 2010).
4. "Thomas Edison," Wikiquote, http://en.wikiquote.org/wiki/Thomas_Edison (accessed Jan. 28, 2010).