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# HOW TO STAY ON TOP OF EMERGING TECHNOLOGY TRENDS FOR LIBRARIES

David Lee King

**Library Technology Reports**

Expert Guides to Library Systems and Services

FEB/MAR 2018  
Vol. 54 / No. 2  
ISSN 0024-2586

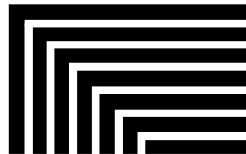
# Library Technology

R E P O R T S

Expert Guides to Library Systems and Services

## **How to Stay on Top of Emerging Technology Trends for Libraries**

*David Lee King*



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American Library Association

# Library Technology REPORTS

ALA TechSource purchases fund advocacy, awareness, and accreditation programs for library professionals worldwide.

**Volume 54, Number 2**

**How to Stay on Top of Emerging Technology Trends for Libraries**

ISBN: 978-0-8389-1611-7

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*Library Technology Reports* (ISSN 0024-2586) is published eight times a year (January, March, April, June, July, September, October, and December) by American Library Association, 50 E. Huron St., Chicago, IL 60611. It is managed by ALA TechSource, a unit of the publishing department of ALA. Periodical postage paid at Chicago, Illinois, and at additional mailing offices. POSTMASTER: Send address changes to *Library Technology Reports*, 50 E. Huron St., Chicago, IL 60611.

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## Abstract

Technology has changed the face of libraries and is continuing to change how we work and how we deliver services to our library customers. This issue of *Library Technology Reports* (vol. 54, no. 2), "How to Stay on Top of Emerging Technology Trends for Libraries," focuses on personal strategies you can follow to keep up with emerging technology trends and provides you with suggestions for how you can incorporate these trends into your library. This report explores four major areas: why you should stay on top of technology trends, the trend watchers you should follow and how to follow them, practical ways to incorporate new technology trends into your library, and how to prepare for and know when not to pursue current trends. The goal of this issue of *Library Technology Reports* is to help you become better prepared for technology changes now and in the future.

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# Introduction

**T**echnology has changed the face of libraries and is continuing to change how we work and how we deliver services to our library customers. The ability to identify and incorporate appropriate emerging technology trends into a library setting is paramount to continually providing excellent services.

This issue of *Library Technology Reports* focuses on personal strategies to stay on top of emerging technology trends and incorporate these trends into a library setting, with the goal of being better prepared for technology changes now and in the future.

This report explores four major areas:

- **Why Stay on Top of Technology Trends?** This chapter explains why library staff need to be familiar with emerging technology trends. I discuss examples of rapid technology change, different types of innovation cycles, how consumer behavior is driving and shaping innovation, and how technology changes affect current work and future job opportunities.
- **Trend Watching: Who and How to Follow.** What makes someone a trend watcher or trendsetter? In this chapter, I introduce you to some trendsetters and trend watchers in the library technology industry and some non-library trendsetters and trend watchers as well. Tools and techniques to

help follow trend watchers will also be discussed.

- **Practical Ways to Incorporate New Technology Trends.** Scanning the technology horizon is about more than simply reading tech blogs. This chapter introduces ways to discover what technology trends are impacting your local community and how. I also cover ideas on how to plan to incorporate new technology projects; how to start a project in a more manageable, less resource-intensive way through the use of pilot projects; what you can learn from the experiences of other libraries; how to do a technology process review; and the potential for overload and how to filter your information sources.
- **Current Technology Trends: How to Prepare and When Not to Pursue.** In the final chapter, I explore some practical ways to be better prepared for rapid technology change. I also talk about the differences between fads, trends, and tipping points and how to know if a trend is becoming mainstream or slowly disappearing. I also discuss when not to pursue an upgrade.

So, roll up your sleeves, grab your favorite drink, and get ready to focus on ways to keep up with quickly changing technology.

# Why Stay on Top of Technology Trends?

Ah, technology, how we love it. Or . . . *ahhh!* Technology! How we hate it! Some people love the current world of fast-paced emerging technology changes and will gladly and quickly embrace the newest technology tool. Other people? Not so much—rather than embracing it, they actively run from new technology, preferring the tried-and-true tools and services they already know. Why change when something still works fine?

Think of those two extremes as two ends of a “technology adoption spectrum” (see figure 1.1). I’d probably place myself somewhere between the middle and the “I love shiny new things” side of the spectrum. Most likely, you are also somewhere near the middle, maybe leaning to one side or the other.

Sometimes I do rush out and buy the newest technology. I did that with the first iPhone and the first iPad. I’ve purchased cutting-edge video cameras as well. When there’s a software update, I almost always download or buy the newest version. I also stay up-to-date with new social media tools and services.

I lean more toward the cautious side with other types of emerging technology. For example, I recently purchased a Ford Focus with the capability to sync my iPhone with the car’s Microsoft Sync software, giving me a hands-free, voice-activated phone experience while driving. I haven’t completely set up the system, and at the moment I find it frustrating to use.

Sometimes we gladly embrace a new tool, and sometimes we’d rather not; however, even if we don’t embrace a new trend, it’s still useful for us to be familiar with new technology. With that in mind, let’s look at some examples of rapid technology changes taking place in our world today, and then we’ll discuss how these changes impact libraries and library customers.

## Examples of Rapid Technology Change

Rapid technology change is evident in many aspects of our everyday lives, including consumer payments, downloadable media, computing and mobile devices, and the social web.

### Cashless Payment Systems

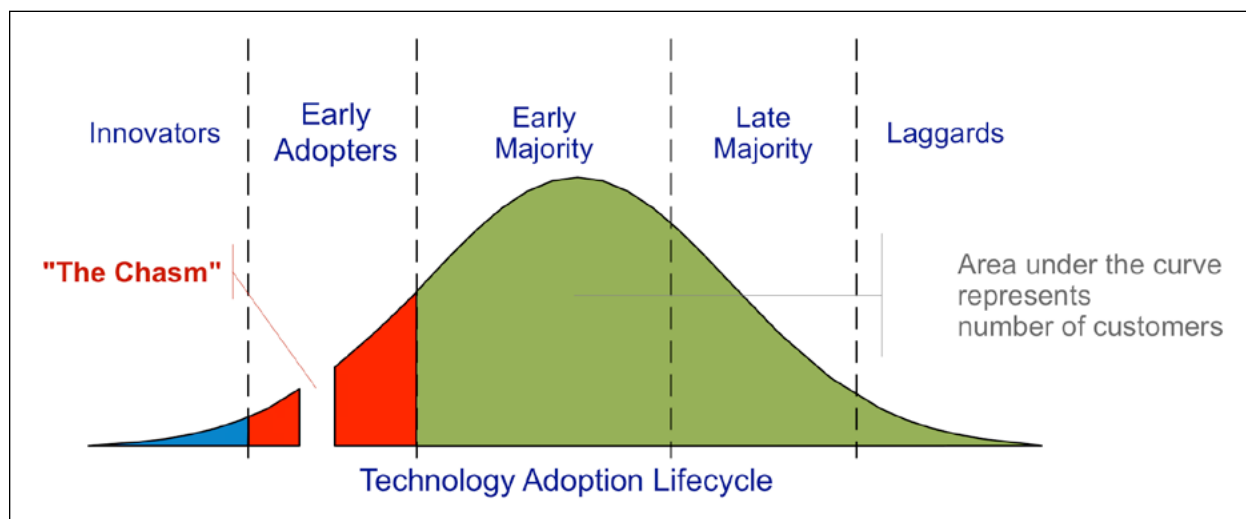
Most of us have used some form of a cashless payment system. Credit and debit cards are good examples of traditional cashless payment systems. As you probably have noticed, these payment systems are going through rapid changes.

Consider Google’s newest payment system, Android Pay. Android Pay allows a user to store credit and debit cards online (using a secure server space). Then, instead of using a credit card to pay, the customer can tap his or her smartphone to a near-field communication (NFC) point-of-sale terminal at the cash register.

There are some useful aspects of Android Pay, including

- easy, app-based storage and retrieval of all credit and debit cards—no more digging around for the correct store card
- password-protected information, so if you lose your phone you can remotely disable the account
- plans that include in-store and online store use

PayPal is another example. Founded in 1998, PayPal was bought by eBay in 2002.<sup>2</sup> What was once primarily a payment system for eBay’s online garage-sale business has rapidly grown and is expanding into



**Figure 1.1**  
Technology adoption life cycle from Wikimedia Commons<sup>1</sup>

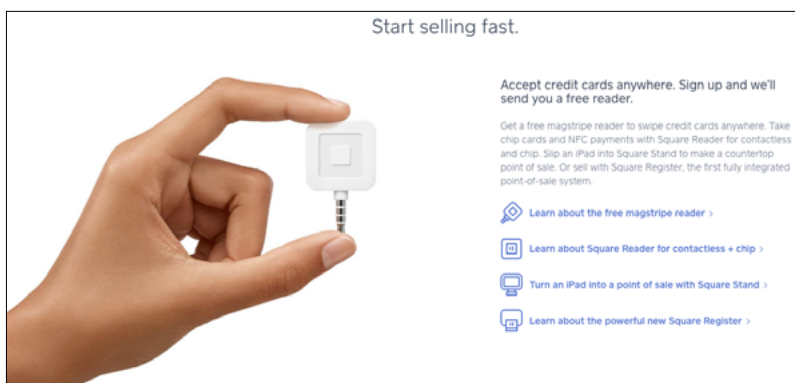
other in-store payment systems. In my hometown I can now pay via PayPal at my local Dollar General store. Instead of swiping a debit or credit card, I can swipe a PayPal card or enter my mobile phone number.

One more example of emerging payment systems is Apple's version, called Apple Pay. Apple Pay works with iOS devices, like an iPhone, and has some unique features. Part of Apple Pay's built-in security includes using the iPhone owner's fingerprint when paying. Apple Pay also works with the new Apple Watch. Imagine paying for something with a flick of your wristwatch!

Credit-card-based payment systems are getting easier for small business owners to use, too. For example, my wife and my son both use the same hair stylist—an independent contractor who originally didn't take credit card payments. When my family first started getting their hair cut at her salon, she didn't have a traditional point-of-sale cash register system or another way to take credit and debit card payments. However, she can now take credit cards through an app-based credit card service called Square (see figure 1.2).

Square, created in 2009 by Jack Dorsey (who also helped start Twitter), allows users to accept credit card payments through a mobile phone.<sup>3</sup> When you sign up for the service, Square mails you a small, free credit card barcode reader that plugs into the phone via a headphone jack. Once you sign up for a Square account, you can easily take credit card transactions.

There are some useful applications for libraries with these new cashless payment systems. For example, many libraries take money for a variety of



**Figure 1.2**  
Square.com

transactions, including paying late fees, making copies, or purchasing USB thumb drives. Some libraries have bookstores or cafés on site. Using some of these new cashless payment systems might be a great service for customers and more convenient and affordable than a traditional point-of-sale system.

## Downloadable Media

Downloadable and streaming media—movies, TV, music, books, magazines, and newspapers—are also going through a period of rapid change. Today many of us don't actually buy a physical media product (i.e., a CD or a DVD with a case, or an actual printed book). Instead, we purchase an electronic file.

For example, my family, like many others, no longer watches television in the traditional way. Instead, my family watches television shows on Netflix via an Apple TV. We often rent movies from iTunes. Other people watch movies and television shows through





**Figure 1.3**  
David Lee King's smartphone

services like Hulu Plus, Roku, YouTube, or even Facebook Watch. This is a completely different experience from what I experienced as a child. Back in the 1970s–1980s, television (in the Kansas City area, anyway) was dominated by three to four major television networks. If you wanted to watch a TV show, you scheduled your evening around the television station's schedule.

Music purchasing is going through a similar transformation. I haven't bought a music CD in a long time. Instead, I download what I want from iTunes, which automatically adds the music I purchase onto my laptop, my iPhone, and my iPad. Using this system, I always have my music with me. Other people simply stream their favorite tunes from an online music streaming service like Spotify or Pandora. In fact, in 2016, digital revenue, which includes streaming services and digital downloads, accounted for 50 percent of total recorded music revenues.<sup>4</sup>

Today, following new bands can be an interesting experience. An up-and-coming band usually has a website that it considers its home base. Then it uses social media tools like Facebook or Twitter to reach out to fans. When the band wants to share new music with its listeners, it might use any number of marketing or “social sound” services—including SoundCloud, Bandcamp, or ReverbNation—to share its music. It'll most likely create some sort of music video, too, even if it's a simple lyric-based video that appears as the song plays, which will likely be uploaded to the band's YouTube channel.

Libraries need to think about how these types of changes will affect their media service offerings. Today, DVDs and CDs are still easily available, as are print books, but there's a possibility that within five to ten years, consumer media will be primarily

digital—or at least there will be a greater mix of physical and digital options than there is now. If the digital trend continues, libraries will need to rethink much of what we do, including where collections are stored and accessed, how the physical building is used, and even how checkout works.

## Computing Changes

Consider for a moment changes in computers that you have experienced. Most likely thirty years ago you wouldn't have been able to afford the computer sitting on your desk or lap. In fact, it didn't exist. Computer technology refreshes often enough that in five years' time, whether or not your computer has actually worn

out enough to get a new one, you will be hard-pressed to keep current with updates to software if you are using the same computer.

Computer technology changes have yet to slow down. Graphical user interfaces (GUI) to computers, like Microsoft Windows or Apple's Mac OS X systems, are almost forty years old and have yet to standardize. That's one reason both companies release newer versions of their systems every couple of years (i.e., Microsoft Windows 3.0, 95, 98, ME, NT, XP, Vista, 7, 8, and 10).

Newer, more mobile-friendly devices—like smartphones (see figure 1.3) and tablets—are being increasingly used for general web-based computing needs. According to the Pew Research Center, most Americans own some type of mobile device:<sup>5</sup>

- Of American adults, 77 percent have a smartphone.
- That increases to 92 percent if you're 18 to 29 years old.
- Of American adults, 51 percent own a tablet computer.
- Of American households, 80 percent have a desktop or laptop computer.

Adults are using their mobile devices for activities like browsing websites, performing searches on search engines, and checking email. These activities used to be performed primarily on a desktop computer. This trend will continue to gain traction as more people purchase mobile devices.

Computing changes continue to have a major impact on libraries. Libraries will need to make sure websites and online catalogs work on all major types of devices, including desktop computers, smartphones, and tablets. Libraries should be planning now

for increased Wi-Fi use as more customers purchase mobile devices. Some libraries are also exploring ways to use tablet devices for library functions, like reference services in the building or outreach events.

## The Social Web

The emerging social web has also been the cause of some rapid technology changes. Because of simple-to-use social media tools like Facebook and Twitter, it's now easy to connect and communicate with other people. These social media tools are still relatively new. Founded in 2003, Myspace, one of the early modern social networks, was getting more page views by 2005 than Google.<sup>6</sup> Facebook appeared in 2004, YouTube was founded in 2005, and Twitter followed in 2006.<sup>7</sup>

Another online social tool is blogs, which have been around in one form or another since the late 1990s. Blogs help facilitate conversation (and rapid technology changes) because most blog posts include a comment box after each article.

Blog-based tools have found their way onto mainstream news media. Have you noticed some form of comment box under each article on newspaper websites (see figure 1.4)? That idea comes directly from blog-based technology.

Social media is having a huge impact on libraries. Libraries can now directly connect and have conversations with customers outside the building. This ability opens new forms of reference services, online readers' advisories, and remote consultation services, as customers can communicate with library staff through social tools, like Facebook and Twitter, or through a comment box on the library's website.

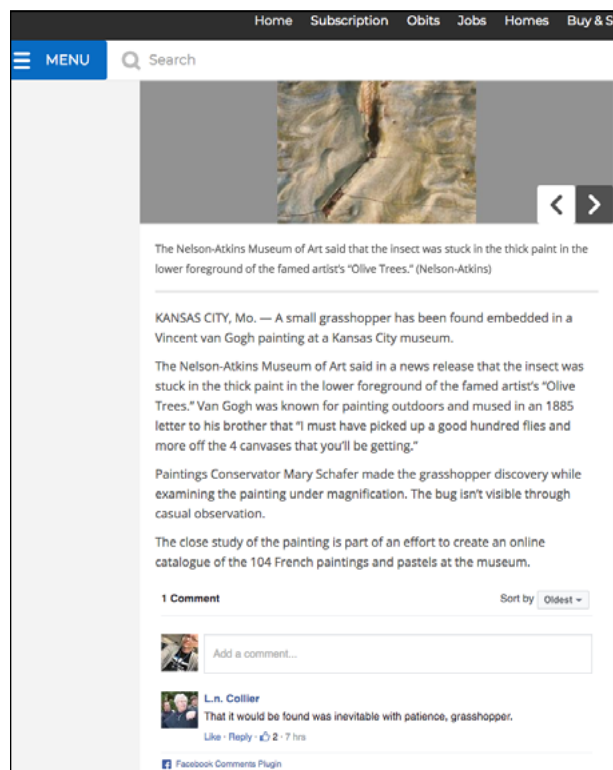
We are living in a period of rapidly expanding technology—hardware, software, and online technology—and it doesn't appear that these rapid changes will slow down any time soon.

## How Rapidly Changing Technology Impacts Libraries

Since technology continues to make rapid advances, library staff need to stay on top of technology trends by being aware of the changes taking place and keeping their technology-focused skills as up-to-date as possible. Following technology trends and emerging skill sets can help library staff in their current jobs and in future job opportunities. Library customers also benefit from staff knowledge and skills.

### Current Library Jobs

As an example, let's use a hypothetical youth services library staff member at Topeka and Shawnee County Public Library (TSCPL). If you worked at TSCPL in the



**Figure 1.4**  
Comment box at cjonline.com

youth services department, you would be responsible for traditional children's librarian tasks, like story time or staffing the youth services reference desk. However, you would also have some nontraditional technology-oriented responsibilities.

A TSCPL Youth Services librarian's job might include

- **Writing blog posts.** The library's tweens and teens sections of the website include blogs. Staff post updated information about the library, programs and events, new authors, and other teen- and tween-related information. There is also a parents' blog that is maintained by youth services staff.
- **Creating Facebook page status updates.** The library has a Facebook page, and staff create posts about youth services news and events.
- **Setting up games for teens.** One of the library's teen areas is equipped with console-based electronic gaming. Staff need to switch out games, and they should be familiar enough with game play to get people started, if needed.
- **Setting up iPads.** At times, we have offered iPads for tweens. When we did that, staff needed to research and download appropriate apps for iPads that were offered in the tween area of the library. They also helped determine appropriate access levels on those iPads so that apps couldn't

be deleted by customers (accidentally or otherwise).

- **Making a video.** Staff help groups of teens create library-related videos, perhaps telling a story about a teen-related event at the library. This project might involve using a video camera, editing a video, and uploading the finished video to YouTube.

Library blogging, social media posts, tablet technology, and video creation are some of the tasks being integrated into librarians' jobs, and not just to youth librarians but librarians at all types of libraries and in varying positions. The role of the librarian is expanding, and being able to incorporate these emerging skill sets into a librarian's job responsibilities is prudent in today's emerging technology environment.

### Advancement Opportunities

Learning some of these newer emerging skills can also make a difference when it comes time to interview for that next job. Here are examples from two job postings for teen services librarians:

- "Creates opportunities for teens and tweens to contribute to the library in venues such as Teen Advisory Boards, social media postings, blogs, book clubs, etc. May perform one or more of the following duties: investigates technologies that will improve services; creates, develops, maintains, or contributes to the community library webpage and social media; supervises hourly rate employees and volunteers; compiles bibliographies and/or develops library user guides." (Teen Librarian, Queens Library, New York, NY).<sup>8</sup>
- "The successful candidate is passionate about serving young people and about 21st century technology." (Teen Services Coordinator, Chattahoochee Valley Libraries, Columbus, GA).<sup>9</sup>

These skills are valuable in more than the teen librarian realm. Examine job descriptions in most library-related jobs. You'll see that libraries are realizing they need staff who are not only equipped with technical skills but who also embrace technology and emerging trends.

Are you unsure about your current skill set? Browse through library job ads to get an idea of what types of skills you need to work in today's library. Search for job ads that match your interests, and read



**Figure 1.5**  
David Lee King with his iPad

through them to figure out which skills are in high demand. Pay particular attention to specific technology needs that are mentioned. If the ad lists a skill you don't yet have—for example, creating videos—you have an opportunity to start learning that new skill or tool and, as a result, you will be a stronger candidate for future job opportunities.

### How Technology Skills Help Your Customers

Learning new technology-based skills also impacts your ability to successfully help library customers. Here are a few areas where you might need to develop new skill sets to help customers with basic technology needs:

- **New e-book apps.** E-book devices are rapidly evolving. A few years ago, libraries would experience an after-Christmas rush of customers with new e-book readers. Customers would unwrap their e-book readers, take them to their local library, and ask for help downloading the library's e-books and other media. In today's world, customers might receive an iTunes gift card with instructions to visit an app store and install the OverDrive or Hoopla app to their mobile device. After that, they might visit the library for help. At first glance, this task sounds pretty easy to accomplish. However, our customer could have any variety of mobile device that may be using Apple iOS or one of the many versions of the Android operating system. Staff would need to know which app stores to use on which devices and operating systems. We also need to know how to search for and download an e-book

in our e-book collection, which, depending on the library, might mean becoming familiar with multiple e-book databases. Being familiar with a variety of devices and databases is the best way we can help our library customers interact with the library's downloadable collections.

- **Knowing your way around a computer.** Today's library has a variety of computers, including PCs and Macs, desktops and laptops, tablets (see figure 1.5), and even e-book readers. Library staff need to know the basics of how to operate each of these systems. When a new operating system is added (Windows 10 might be coming to your library at some point, for example), we need to know how to use those systems—preferably before our customers ask.
- **Connecting to Wi-Fi.** Our patrons bring their own devices to the library, which might include Apple and Windows laptops and a variety of tablets and smartphones. Each of these devices can connect to the library's Wi-Fi network. Library staff don't need to be experts on each computer platform, but they do need to know enough to help customers connect to Wi-Fi on each of these devices.
- **Other devices.** Your library's patrons probably own a variety of consumer technology, like cameras, USB drives, or smartphones. Library staff need to know the basics of how to connect these devices to the library's public computers (assuming policies are in place that allow customers to plug things into the library's public computers). Some of these devices connect to Wi-Fi, as well. We need the ability to help our customers connect all these devices to Wi-Fi and to the library.

We don't have to be experts on each device a customer brings into the library. But we do need to capably help our customers get started. We also need to be comfortable enough with technology tools and services that we can help point our patrons in the right direction, even if we aren't intimately familiar with how the device works.

## Innovation Cycles

Let's switch gears and talk about innovation cycles, especially innovation cycles for consumer technology. Understanding the basics of these current innovation cycles can help you monitor technology trends and alert you to the technology changes that may be coming to your library.

There are different types of innovation cycles, including

- a global innovation cycle called the Digital Revolution

- annual consumer technology innovation cycles, conferences, and trade shows

## Digital Revolution

We are currently in the middle of a global innovation cycle called the Digital Revolution.

According to Wikipedia:

The Digital Revolution is the change from mechanical and analogue electronic technology to digital electronics which began anywhere from the late 1950s to the late 1970s with the adoption and proliferation of digital computers and digital record keeping that continues to the present day. Implicitly, the term also refers to the sweeping changes brought about by digital computing and communication technology during (and after) the latter half of the 20th century. Analogous to the Agricultural Revolution and Industrial Revolution, the Digital Revolution marked the beginning of the Information Age.<sup>10</sup>

The Digital Revolution has seen multiple changes, including personal computers, the internet, and mobile devices. Some current trend watchers are predicting the beginning of the post-PC era. They are seeing a decline in traditional desktop and laptop computer sales and a rise in more mobile devices like smartphones and tablets.

## Annual Consumer Technology Innovation Cycles

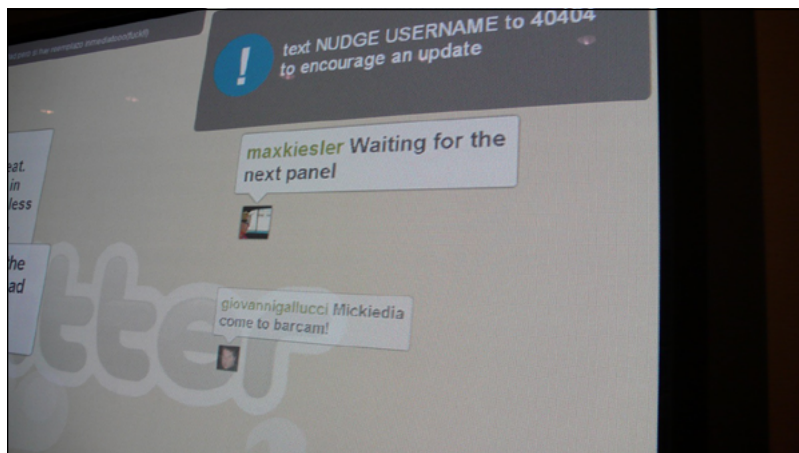
Some innovation cycles are closely related to the consumer technology industry. Generally speaking, there is an annual trend cycle. Around October, consumer technology companies (like Samsung or Sony) start discounting current products for the holiday season. After Christmas, these companies come out with their most up-to-date products, usually between January and April.

Many of these newer products are unveiled each January at the Consumer Electronics Show (CES). Products that have heralded technology change have been introduced at CES, including the VCR (1970), the camcorder (1981), CDs (1981), and netbooks (2010).<sup>11</sup>

Top technology trends from the 2017 CES show included

- voice assistants, like Amazon's Alexa and Google Home
- smart home technology
- self-driving cars
- augmented and virtual reality
- drones<sup>12</sup>





**Figure 1.6**  
Twitter at SXSW 2007, by Max Kiesler

Keeping track of what's happening at CES can help you stay on top of new consumer technology trends.

New web and social media tools are created throughout the year, but they often rise to prominence during South by SouthWest (SXSW), a series of festivals and conferences held each March in Austin, Texas.

The unveiling of Twitter at SXSW and its subsequent popularity illustrates the important link between conference trade shows and consumer usage. Twitter was created in March 2006. During the 2007 SXSW event, the company was able to promote itself by displaying tweets of conference sessions on large screens (see figure 1.6), which captured attendees' interest. Now, in 2017, Twitter has over 3,800 employees and over 319 million active users.<sup>13</sup>

Keeping track of what's hot at SXSW can help you learn about web-based tools that may be gaining in popularity in your community.

## Consumer Behavior and Innovation

Consumers and their dollars are driving and shaping the focus of technology companies. That means that consumers like you—and your library customers—are, in effect, shaping the future technology that your library will be using in five to ten years.

By paying attention to current trends, you may be able to help prepare your library for the next wave of technology changes headed your way.

## Libraries in Transition

Our world is going through some major technology upheavals. The way many of us do simple things—like watching TV, reading a book, or checking email—is changing. These messy transitions are also affecting

libraries. What once worked for libraries may not work anymore.

Most likely your library still has traditional library customers. These customers ask questions at the reference desk (see figure 1.7) and check out physical books. You also have a new breed of library customer. These patrons are bringing in any number of electronic devices, and they want those devices to work with your library's technology. They want to plug into your public computers. They want to connect to the library's Wi-Fi network. They want to upload and download content from their device to Facebook, Instagram, or YouTube. They want to

download e-books, digital audiobooks, and music. As they do all this, they also want to recharge their devices.

Libraries are in a time of rapid transition and need to figure out how to serve this new subset of their customer base, while also providing services for their more traditional customers. If we aren't successful in making this technology transition, patrons who have made that transition for themselves might simply bypass the library by finding answers (though not always the best answers) through Google, finding and purchasing books through Amazon, or downloading music from iTunes.

Technology changes affect our traditional users too. The books, magazines, and newspapers they love to read are moving to digital formats. For example, in November 2010, *U.S. News & World Report* switched to a primarily digital format.<sup>14</sup> More magazines and newspapers are sure to follow. Library staff need to be ready to help these customers find their news and entertainment sources in newer formats—online and digital.

## Consumer Technology Is Shaping Libraries of the Future

Trends in consumer technology will affect technology in libraries. These changes gained traction with the advent of the personal computer in the 1970s and are still happening today. In today's library, simple functions like internal staff communications might be email-driven, which requires access to a computer or mobile device. Basic ready-reference answers are found using online tools. Most, if not all, library staff need a computer to do their jobs.

Think about the growing popularity of e-books and e-book readers. Many of our libraries have e-books, supplied by vendors like OverDrive, Hoopla,



**Figure 1.7**  
Image of reference desk at Anythink Libraries

or Bibliotheca. Perhaps your library's e-book collection is currently a small part of the library's overall collection, but what might that collection look like in five, ten, or even twenty years? If e-books become a large part of the library's collection, think about the impact that could have on the library's budget, staffing needs, and even on the library building itself.

## Conclusion

It's important to start planning to future-proof your library, and here are some things you can do right away:

- Scan the horizon for emerging trends. We'll learn more about how to do that in the following chapters.
- Train customers and staff. Make sure to teach staff how to use a variety of consumer technology tools.
- If possible, set up a technology petting zoo. If your library's budget allows it, buy some of these tools and let staff learn hands-on. This allows library staff to learn how a new technology device works in advance, instead of encountering it for the first time with a customer.

Having no plan for staying on top of technology change practically guarantees failure and irrelevance for libraries. Instead of that bleak outlook, let's learn to ride these technology changes as they happen and be ready and waiting for our customers when they come to us with new tools and questions.

## Notes

1. Craig Chelius, "Technology-Adoption-Lifecycle.png," CC BY 3.0 (<http://creativecommons.org/licenses/by/3.0/>), via Wikimedia Commons, <https://commons.wikimedia.org/wiki/File%3ATechnology-Adoption-Lifecycle.png>.
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# Trend Watching

## *Who and How to Follow*

In the last chapter, we discussed some examples of rapid technology change, evolving technology and job duties in libraries, consumer technology innovation cycles, and the way changes in consumer technology affect libraries. In this chapter, we explore the concept of trend watching and different types of trend watchers. We look at trend watchers in the library and the non-library technology industries. We look at some tools and techniques for following trend watchers. Finally, I discuss how important it is to pay attention to trends in your local community and share some ideas for how to do that.

### What Is a Trend Watcher?

Before we start looking at specific trend watchers and what types of information they share, let's first define what is meant by a trend watcher. There are two types of trend watchers: *organizations* and *individuals*. Individual trend watchers can be grouped into two loose categories: what I call *reporters* and *explorers*.

**Organizational trend watchers** include research organizations, think tanks, and government and non-profit agencies that scan trends or industries. In fact, one trend-watching organization is named Trend-Watching. TrendWatching focuses on global consumer trend watching.

*TrendWatching*  
[www.trendwatching.com](http://www.trendwatching.com)

Similar organizations include the Pew Research Center and its wide-ranging research on Americans, including research on technology and libraries, and



**Figure 2.1**  
 People getting ready to learn about trends

Edison Research, which focuses on media trends and election polling among other things. Each of these organizations actively looks for, reports on, and researches a variety of trends.

**Individual trend watchers** are just that—individuals. They don't necessarily represent a business or organization. If they are associated with a business,



it's usually in a consulting or research capacity. Many of them are simply people who are interested in a topic and like to share. These individuals can often be further divided into what I call reporters and explorers.

**Reporters** regularly read and report on news and information about topics that interest them. They might also discuss new technology or tools, adding their own ideas to a debate. They might supply a tutorial on a new service or tool because they are interested in it. Reporters usually accomplish these tasks through a blog or a social media tool like Twitter or Facebook.

**Explorers** are on the front lines, creating trends. They build new tools and create technology to meet local needs. They might design a pilot project to test a theory and then report findings. Their work might be accomplished under the umbrella of their day jobs, or they might do these projects during off hours.

There's no hard-and-fast line between reporters and explorers. Often an individual does a little of both.

## Advantages of Following Trend Watchers

Following a trend watcher will provide you with information on emerging technology trends and ideas that might affect the library industry and the world at large. This information is usually not found in library trade publications and academic journals. Emerging technology trends often take one to two years to reach those publications. In the ever-changing technology landscape, a trend can't truly be defined as *new* after one to two years. Customers could already be expert users by the time a trend is formally published in a traditional, peer-reviewed academic journal.

Since trend watchers are already following and reporting on key trends affecting the library and information industry, you don't have to duplicate this effort. By following these key players, you can quickly update your knowledge of emerging trends.

Let's explore a variety of organizations and individuals who watch for, create, and explore technology trends in the library industry.

## Organizational Trend Watchers in Library Technology

For the most part, organizational trend watchers are connected to library trade magazine publishers and other library and information industry organizations. These trend watchers report key news, emerging trends, and other information related to library technology.

Here are some organizational trend watchers to follow:



**Figure 2.2**  
ALA logo

*ALA'S CENTER FOR THE FUTURE OF LIBRARIES*

The American Library Association's (figure 2.2) Center for the Future of Libraries describes its mission as follows:

- Identify emerging trends relevant to libraries and the communities they serve
- Promote innovation techniques to help librarians and library professionals shape their future
- Build connections with experts and innovative thinkers to help libraries address emerging issues<sup>1</sup>

It has a blog you can subscribe to through RSS or email and weekly articles highlighting emerging social and technology trends that are important to libraries.

*THE DIGITAL SHIFT*

The Digital Shift is part of *Library Journal*. Here's a description of Digital Shift:

The Digital Shift is the new home for all technology-related stories and features published by *Library Journal* and *School Library Journal*. We'll cover everything to keep librarians informed as they help ease patrons' and students' immersion in an increasingly digital world. From the rapidly changing e-book marketplace, to self-service interfaces and download stations, to the latest in online tools and resources that will help patrons and students work and learn most efficiently—when it comes to navigating the Digital Shift, we've got you covered.<sup>2</sup>

Topics have included ILS news, e-book integration with BiblioCommons, and broadband needs for libraries.

*DISTRICT DISPATCH*

The District Dispatch is an online publication of the American Library Association's Washington office. It focuses on library policy news. Currently, that type of news includes information about digital inclusion, broadband internet access, and privacy issues—all topics that relate to technology.



## INFODOCKET

INFOdocket (figure 2.3) is also sponsored by *Library Journal* and is written by Gary Price, a library consultant. INFOdocket shares information industry news and resources, and it is frequently updated. Topics have included publisher and e-book news, digitization projects, and information about net neutrality legislation.



**Figure 2.3**  
INFOdocket logo

*ALA's Center for the Future of Libraries*  
[www.ala.org/tools/future](http://www.ala.org/tools/future)

*The Digital Shift*  
[www.thedigitalshift.com](http://www.thedigitalshift.com)

*District Dispatch*  
[www.districtdispatch.org](http://www.districtdispatch.org)

*INFOdocket*  
[www.infodocket.com](http://www.infodocket.com)

## Individual Trend Watchers in Library Technology

Many individuals within the library technology community publish blogs focused on emerging technology trends. These trend watchers discuss many things, including technology-related news, thoughts they have about how to use new technology, ideas and services they have discovered at a conference, and even pilot projects that they have led. If you follow one or more of these people, you will definitely learn more about different types of emerging technology!

One thing to note with individual blogs: These blogs are written and maintained by real people with real jobs, families, and outside interests. Sometimes they publish a lot of content, and sometimes they take short breaks. If you notice a blog with good articles that hasn't been updated in a while, most likely that blogger is taking a break. Wait a few months and check back again.

Here's a list of individual trend watchers to start with:

STEPHEN ABRAM

Stephen Abram is a librarian and principal with Lighthouse Consulting and executive director of the Federation of Ontario Public Libraries. His blog, *Stephen's Lighthouse*, includes posts on library strategies for marketing, technology, and user alignment. Topics on

his blog cover a wide range of emerging technology and cultural changes taking place.

JASON GRIFFEY

Jason Griffey is the founder and principal at Evenly Distributed, a technology consulting and creation firm for libraries, museums, education, and other non-profits. Griffey is a fellow at the Berkman Center for Internet and Society at Harvard University and was formerly an associate professor and head of library information technology at the University of Tennessee at Chattanooga. Topics covered include information on his LibraryBox project, personal information security, libraries and immigration, and technology innovation.

SARAH HOUGHTON

Sarah Houghton is director of the San Rafael Public Library in California. In her blog, *Librarian in Black*, she tends to write about library technology-related topics. Recent posts include discuss a library advocacy project she worked on and library privacy practices.

DAVID LEE KING

Yes, that's me! I write about social media, emerging trends (hence this publication), and libraries. My blog, *Davidleeking.com* (figure 2.4), includes articles about social media in libraries, technology improvements, and tips on improving digital content.

R. DAVID LANKES

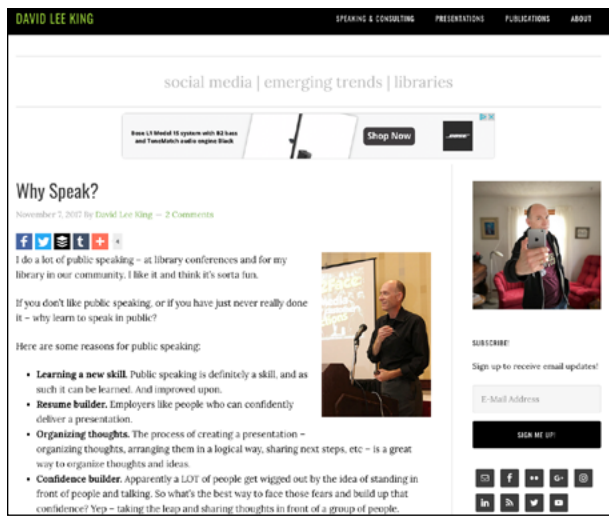
R. David Lankes is the director of the University of South Carolina's School of Library and Information Science in Columbia, South Carolina. Recent blog posts discuss social responsibility and libraries, fake news, and information about recent presentations he has given.

THE 'M' WORD—MARKETING LIBRARIES

*The 'M' Word—Marketing Libraries* is written by Kathy Dempsey and Nancy Dowd. Just like the title says, this blog focuses on marketing in libraries. Blog post examples include winners of a library marketing award, National Library Legislative Day, and library funding issues.

BOBBI NEWMAN

Bobbi Newman maintains the *Librarian by Day* blog. She is a community outreach and engagement specialist at the National Network of Libraries of Medicine Great Midwest Region. She is also a writer and



**Figure 2.4**  
Davidleeking.com

frequent speaker at information industry events. Newman writes a lot about digital literacy and training initiatives at the *Librarian by Day* blog and has recently started writing about health literacy. Recent posts discuss health librarianship, gender equity, and privacy in the digital age.

#### NO SHELF REQUIRED

*No Shelf Required* is a blog focused on e-books and the publishing industry. It was started by Sue Polanka and is currently managed by Mirela Roncevic. This blog features a variety of contributors, and it's a great resource for keeping up with the e-book industry.

#### PAUL SIGNORELLI

Paul Signorelli is a San Francisco-based writer, trainer, instructional designer, presenter, social media strategist, and consultant. He maintains the blog *Building Creative Bridges*. Current topics include global learning spaces, the New Media Consortium conference, and creating transformative learning opportunities.

#### MICHAEL STEPHENS

Michael Stephens maintains *Tame the Web*, which focuses on libraries, technology, and people. Stephens contributes to the blog and has frequent contributors who also write for it. Recent posts discuss fake news and libraries, library science students, and the 2017 *Horizon Report* for libraries.

#### T IS FOR TRAINING

Maurice Coleman is a technical trainer at Harford County Public Library (MD) and a consultant and



**Figure 2.5**  
Joyce Valenza's blog

speaker. He produces the blog and call-in show *T Is for Training*. *T Is for Training* is unique; it's a podcast, so you can subscribe and listen to the finished product. Better yet, it always starts off as a call-in show. It's a fun way to share ideas, thoughts, and brainstorming. The content mostly focuses on some aspect of teaching and training.

#### STEVE THOMAS

Steve Thomas runs *Circulating Ideas*, a collection of podcasts focused on librarian interviews. Recent interviews include Renee Grassi, youth services manager at Dakota County Library System in Dakota County, Minnesota; Jeremy Shermak, a doctoral student in the School of Journalism and Moody College of Communication Doctoral Fellow at the University of Texas at Austin; and Susan Hildreth, the inaugural Gates-funded Professor of Practice at the Information School at the University of Washington and former director of the Institute of Museum and Library Services.

As an aside: Thomas's podcasts are a great way to learn if you don't have a lot of time to read. If you have a morning or evening commute of twenty minutes or more, podcasts are a great way to stay up-to-date on emerging technology trends.

#### JOYCE VALENZA

Joyce Valenza maintains the blog *Neverending Search* (figure 2.5) at the *School Library Journal's* website. She writes about a variety of issues and topics that concern libraries, teaching, and learning. Recent topics include Google's recent launch of Applies Digital

Skills (a resource for teachers), Flipgrid (a video discussion platform), and Google's AutoDraw.

JESSAMYN WEST

Jessamyn West is a library technologist with a variety of speaking, writing, and consulting jobs. She has been blogging since 1999 about a variety of topics. Recent posts include getting paid for giving presentations, options for doing remote librarianship, and thoughts on helping library patrons with their computer issues.

*Stephen Abram*

<http://stephenslighthouse.com>

*Jason Griffey*

<http://jasongriffey.net/wp>

*Sarah Houghton*

<http://librarianinblack.net/librarianinblack>

*David Lee King*

[www.davidleeking.com](http://www.davidleeking.com)

*R. David Lankes*

<https://davidlankes.org>

*The 'M' Word—Marketing Libraries*

<http://themwordblog.blogspot.com>

*Bobbi Newman*

<https://librarianbyday.net>

*No Shelf Required*

<http://noshelfrequired.com>

*Paul Signorelli*

<https://buildingcreativebridges.wordpress.com>

*Michael Stephens*

<http://tametheweb.com>

*T Is for Training*

<https://tisfortraining.wordpress.com>

*Steve Thomas*

<https://circulatingideas.com>

*Joyce Valenza*

<http://blogs.slj.com/neverendingsearch>

*Jessamyn West*

[www.librarian.net](http://www.librarian.net)

## Some International Library-Related Blogs

THE DISTANT LIBRARIAN

Paul Pival is the public services systems librarian at the University of Calgary in Alberta, Canada. He maintains the blog *The Distant Librarian*. His blog was originally focused on distance learning tools and tips (hence the name), but it has since expanded to other areas, like training, screencasting, and a variety of useful web tools. Recent topics include searching Google Maps via shortcuts, fake news, and finding good information on Twitter.

MUSINGS ABOUT LIBRARIANSHIP

The blog *Musings about Librarianship* is maintained by Aaron Tay, a senior librarian at the National University of Singapore. Recent posts focus on data manipulation tools, new citation indexes, and assessing library electronic resource usage.

NED POTTER

Ned Potter is a librarian at the University of York in the United Kingdom. He tends to focus on library technology and marketing. Recent posts discuss ways to improve the student library experience, preparing short presentations, and library UX (user experience) tips.

*The Distant Librarian*

<http://distlib.blogs.com>

*Musings about Librarianship*

<http://musingsaboutlibrarianship.blogspot.com>

*Ned Potter*

<https://www.ned-potter.com>

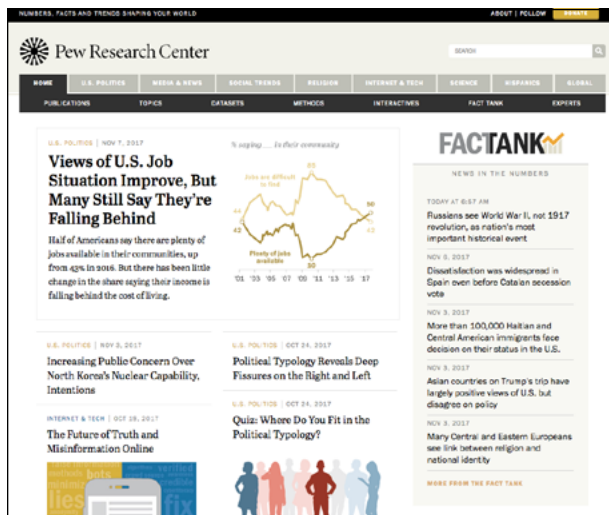
## Trend Watchers Outside the Library Industry

Here are some organizations and individuals that have consistently good information related to trends in the general technology field (not just for libraries).

### Organizations

MASHABLE

Mashable covers recent news and developments in a wide variety of technology-related areas, including



**Figure 2.6**  
Pew Research Center

social media, mobile technology, online video, web-site development, and technology gadgets. Recent topics covered include making selfies better and digital currency.

#### PEW RESEARCH CENTER

Here's what Pew Research (figure 2.6) says about itself: "Pew Research Center is a nonpartisan fact tank that informs the public about the issues, attitudes and trends shaping America and the world. We conduct public opinion polling, demographic research, content analysis and other data-driven social science research. We do not take policy positions."<sup>3</sup>

Pew researches a number of topics, including public libraries; US politics and policy; journalism and media; internet, science and technology; religion and public life; Hispanic trends; global attitudes and trends; and US social and demographic trends.

Pew is a great place to visit to discover the newest research on internet use. Current articles include privacy and information sharing and searching for work in the digital era.

#### READWRITE

ReadWrite, formerly called ReadWriteWeb, focuses on emerging web-based technology. Recent articles discuss wearables, self-driving cars, and mobile networks.

#### TECHCRUNCH

TechCrunch focuses on technology start-ups, new internet products, and breaking technology news. If you want to know what's new on the web or in the world of technology, this is a great place to start.

#### TECHMEME

Techmeme is a technology news curation service. Here's how it describes what it does:

Techmeme was founded in 2005 by Gabe Rivera as an automated news curation service, like Google News, but focused on the leading edge of technology. Starting in 2008, we introduced human editors to complete the editorial process. . . . Our experience leads us to believe that a thoughtful combination of both algorithmic and human editing offers the best means for curating in a space as broad as technology. Today, Techmeme remains independent, bootstrapped, and privately held, a point of differentiation in an increasingly complicated tech media landscape.<sup>4</sup>

Techmeme curates some of the sites mentioned in this report, plus a lot of other related websites. If you want to follow just one of these technology news sites, this is a really useful one.

#### TRENDWATCHING

TrendWatching, a trend-watching company, focuses on trends of all types, including technology trends. It sends out quarterly trend briefings.

#### WIRED

Wired covers a broad range of developing technology and digital culture news. Topics covered include Google developments, mobile apps, and Russian hackers.

#### Mashable

<http://mashable.com>

#### Pew Research Center

[www.pewresearch.org](http://www.pewresearch.org)

#### ReadWrite

<https://readwrite.com>

#### TechCrunch

<https://techcrunch.com>

#### Techmeme

<https://www.techmeme.com>

#### TrendWatching

<http://trendwatching.com>

#### Wired

<https://www.wired.com>

## People to Watch

DAVID ARMANO

David Armano writes the blog *Logic + Emotion*, which focuses on social media, digital experience, and marketing design. Recent articles discuss age diversity, branding, and digital transformation.

JAY BAER

Jay Baer writes the blog *Convince and Convert*. He has turned this blog into a business focusing on social media and content marketing. Recent articles explore a variety of topics concerning social media.

JOHN HAYDON

John Haydon (figure 2.7) writes about social media for nonprofits, which translates well to a library setting. Recent articles include making impressions with donors, creating a better donation page, and crowdfunding versus peer-to-peer types of fundraising.

BRIAN SOLIS

Brian Solis works in the Altimeter Group at Prophet, a research firm focused on disruptive technology. Recent articles include disruptive technology, customer experience, and digital transformation.

*David Armano*

<http://darmano.typepad.com>

*Jay Baer*

[www.convinceandconvert.com](http://www.convinceandconvert.com)

*John Haydon*

<https://www.johnhaydon.com>

*Brian Solis*

[www.briansolis.com](http://www.briansolis.com)

## Tools and Techniques for Following

Once you have identified the trend-watching organizations and individuals you want to follow, you need to decide on the best way to follow them. The easiest way, of course, is to simply visit the websites on a regular basis. This works well as long as you are following only one to five websites. If you want to keep track of more than that, you need a better, more automated way to do so.



**Figure 2.7**

[johnhaydon.com](http://johnhaydon.com)

## Subscribing to Trend-Watching Sites

The best way to follow trend watchers is to subscribe to their content, and most blogs and regularly updated news websites have multiple ways to do this: subscribing via the website's RSS feed, subscribing via email, or subscribing to one of its social media channels (usually Twitter or Facebook).

Once you have subscribed, whenever that website posts new content, you will receive a copy of that content. As you can imagine, subscribing to trend-watching websites can be a huge time-saver because the new content comes to you.

Here are some ways to subscribe to trend watchers and trend watching websites.

### USING RSS FEEDS

To subscribe to a website content by using its RSS feed, you will need to use an RSS feed reader. Here are two RSS feed readers to check out:

- **Feedly.** Feedly is a great tool to use to subscribe to news, blogs, podcasts, and YouTube channels. Feedly works on the web using a web browser and on mobile devices using a mobile app.
- **Digg.** The Digg Reader was built as an alternative to Google Reader, which was discontinued in 2013. Digg Reader can be used on the web or via a mobile app.

Other RSS readers to look into are listed in the gray box on the following page.

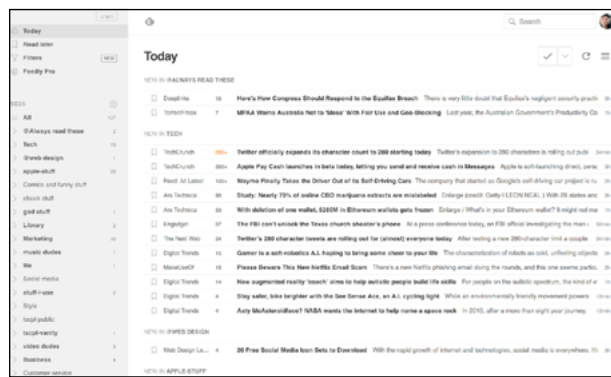
*Feedly*

<https://feedly.com>

*Digg*

<http://digg.com/reader>





**Figure 2.8**  
Feedly.com

*NewsBlur*  
<http://newsblur.com>

*Inoreader*  
<https://www.inoreader.com>

*Panda*  
<http://usepanda.com>

*Feedbin*  
<https://feedbin.com>

*Feed Wrangler*  
<https://feedwrangler.net>

*The Old Reader*  
<https://theoldreader.com>

One thing to remember about these RSS readers is that most are not free, although some are free up to a certain point. For example, NewsBlur is free for one to sixty-four subscriptions, but there's a twenty-four-dollar annual fee if you subscribe to more RSS feeds.

#### SUBSCRIBING VIA EMAIL

Most trend-watching websites include a way to subscribe to their content using email. Once subscribed, you will receive an email version of their new content.

Subscribing via email is a good choice if you plan to follow a small number of trend watchers or if there are certain trend watchers you want to see every time you access your email account. If you have too many subscriptions, your email inbox might become quickly cluttered. I follow around 500 blogs and trend-watching websites, and I would not want that amount of email going to my inbox!

#### SOCIAL MEDIA CHANNELS

Most of these blogs and websites also have social media channels, like Twitter, Facebook, or LinkedIn. Whenever they post new content to their website, they also post a link to that content on their social media channels. That allows people who follow them on social media the ability to access the new website content.

They also might tweet links to news and tools they find helpful or useful.

One caveat about following people on social media: you'll probably get a mix of trend watching and personal information—like what they had for dinner—especially if it's an individual trend watcher. If you don't mind a mix of personal and professional content, using social media channels for trend watching works well.

#### GOOGLE ALERTS

Have you ever performed a Google search that you'd like to regularly revisit? Google Alerts was created for just that purpose. To set up an alert, type in your search, narrow it down by result type (i.e., blogs, news sites, everything), and specify how often to run the alert and how many results are returned. You will also need to choose how you'll receive the alert (via email or an RSS feed). Once this is done, whenever that search finds new results, you will receive a link to the content.

#### Other Ways to Learn about Technology Trends

##### READING THE TECH NEWS

In addition to following organizational and individual trend watchers, there are many other ways to stay up-to-date with technology. You can regularly visit a couple of general news sites that report on technology-related news.

The CNN website has a Technology News section. CNN produces some original articles, but also features an interesting stream of articles from sources like *Wired*, Mashable, CNET, and Ars Technica (another technology-based news organization). CNN follows these technology-related news sites and posts what it considers the most newsworthy articles.

*CNN Technology News*  
<http://money.cnn.com/technology>

Most major news sites, including *USA Today*, Reuters, the BBC, and the *New York Times* (figure 2.9) include Tech sections in their publications and are



**Figure 2.9**  
New York Times technology section

worth checking out.

#### KEEPING UP BY ATTENDING A CONFERENCE

Library technology conferences can be a worthwhile way to connect and learn from many technology-oriented people in a short amount of time. My favorite conferences include the following:

- **The east coast Computers in Libraries Conference**, held each spring, and the **west coast Internet Librarian Conference**, held each fall. Sponsored by Information Today, these conferences are three full days of library-focused technology updates, projects, and ideas.
- **The American Library Association annual conference**. This annual conference is rather large—with usually about 20,000 people attending. It is focused on libraries in general. However, if you are selective, you can find some great technology-focused sessions. It's also a great event to meet other like-minded librarians.
- **Local conferences**. Most likely there are some technology seminars or conferences within driving distance that you should think about attending. There are small conferences and gatherings focused on WordPress, building websites, podcasting, and social media. For example, for about four years, I helped organize the Podcamp Topeka conference. This “unconference” focused on social media and emerging trends—not just for libraries, but in general.
- **Webinars**. Infopeople, the American Library Association (ALA), the Public Library Association (PLA), Urban Libraries Council (ULC), and OCLC all provide webinars and online courses.

#### ASKING YOUR COMMUNITY

You can gain valuable insights from your local community when you find out more about its technology interests and needs. There are several ways to do this. One way is to listen in on locally focused conversations through Google Alerts or through Twitter searches.

To set up a Twitter alert, follow these easy steps:

1. Go to Twitter Search.
2. Click Advanced Search.
3. Enter your desired search terms.
4. Under Places, enter the name of your city or locality, “Near this place.”
5. Click Search button.
6. Choose the type of search you want to do (i.e., Top, Live, Accounts, etc.).
7. Choose More Options, and then click Save This Search.

Once the search is saved, you can access the results in your Twitter software of choice.

What should you listen to using these types of alerts? Listen for tech-related things, like frustrations with a mobile device or computer, new apps people are interested in, or new games they are playing. This will inform you about what your community needs and uses and will help you know what you should be focused on to better help your customers.

#### OBSERVING FORMALLY AND INFORMALLY

Finally, you can find out what your community thinks about technology by direct observation. Observation techniques can be split into two types: formal and informal.

**Formal observation** can be done through focus groups and surveys. An online survey can be created through a tool like SurveyMonkey and placed on your library's website. Questions can focus on community technology trends. For example, if you want to learn about e-book use in your community, you might ask survey questions such as

- Do you own an e-book reader or app? What type?
- What kinds of e-books do you read?
- How often do you download e-books from the library?

If you choose to use a focus group, you would gather a group of people together and ask those same questions. Then you would record what the group shared.

What's the difference between surveys and focus groups? A survey is more rigid and provides answers



**Figure 2.10**

Social media signage at Topeka and Shawnee County Public Library

to specific questions that can be measured (e.g., 75 percent of respondents said yes to this). A focus group is less quantifiable but allows for discussion. Both are useful.

**Informal observation.** You can also gather useful information about technology trends through informal observation. For example, the next time you walk through a public area of your library, simply observe

what people are doing on your library's public computers. Don't be intrusive—you still want to respect patron privacy rights—but pay attention to what websites customers are using or what activities are taking place on the computers. You will quickly notice familiar websites like Facebook, YouTube, or web-based email tools. You might notice some people playing a variety of online games.

You can also pay attention to how people are using the Wi-Fi in your library. What kinds of mobile devices are they using? My guess is that your customers have brought in laptops, tablets, and their smartphones. They expect a great Wi-Fi connection.

This simple observation technique is useful because it can help inform your thinking during a website redesign. By knowing what types of websites your customers use and the devices they are using, you can build website functionality based on what you know your customers are already familiar with.

Another way to observe informally is to notice technology trends where you live. Businesses sometimes place social media “follow me” stickers on their front doors (figure 2.10). They may have a “Follow me on Twitter and Facebook” sticker, for example. If you see something mentioned that you're not familiar with, it might be a good idea to explore further and see if that tool or service can be used in your library.

## Notes

1. “Center for the Future of Libraries,” American Library Association, accessed October 4, 2017, [www.ala.org/tools/future](http://www.ala.org/tools/future).
2. About page, The Digital Shift, accessed October 4, 2017, [www.thedigitalshift.com/about](http://www.thedigitalshift.com/about).
3. “About Pew Research Center,” Pew Research Center, accessed October 4, 2017, [www.pewresearch.org/about](http://www.pewresearch.org/about).
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# Practical Ways to Incorporate New Technology Trends

So far, we have discussed reasons to stay on top of technology trends and how that affects libraries. We have also identified some technology trend watchers, explored how to follow them, and learned why it's useful to watch for emerging trends.

In this chapter, we take a look at how to incorporate new technology trends into your library. There are at least four aspects to consider when incorporating new technology trends into your library:

1. developing a plan
2. learning from library early adopters
3. conducting a technology process review
4. dealing with technology overload

Let's examine each of these areas in more detail.

## Developing a Plan

As you start to trend watch, you will find new technology that you would like to purchase and incorporate into your library's technology offerings or infrastructure. You might discover technology that you can roll into an already existing service, or you may find something to help jump-start a new program, a service, or even a new library department.

Your library's strategic plan might provide guidance for exploring and incorporating new technology into the library. For example, one of my library's strategic plan goals (from a previous strategic plan) was to "support and nourish the community spirit, imagination, and culture."<sup>1</sup> This strategic initiative can be connected to multiple technology strategies, including purchasing more creative technology tools or using more participatory tools like online polls or surveys.

Let's take a look at how to incorporate an emerging technology trend in a library setting, using a current library trend—digital media labs—as an example.

Here are the steps we will explore:

- Learn about the trend and its potential benefits.
- Share the vision with management (and get permission).
- Research community interest.
- Create the plan.
- Start small.

## Learn about the Trend

In the first two chapters, I highlighted effective ways to learn about trends. You now know how to use trend-watching tools to discover emerging library technology trends. If you have had these tools set up in the last couple of years, you probably have heard about digital media labs in libraries (see figure 3.1).

A digital media lab is a technology-focused space in a library where customers can create and manipulate digital content—like music, podcasts, photographs, videos, digital art, and graphic design. A digital media lab usually has a mix of hardware, software, and space dedicated to digital content creation. Tools and software usually include Macs and PCs with software like Adobe's Creative Suite and Apple's GarageBand. There are often microphones, digital audio interfaces, MIDI keyboards, guitars, and digital drawing tablets that are included as peripheral hardware that can be used in the space. Some libraries have gone further and have created complete recording studios, video creation spaces, and multimedia art learning labs.

How would you learn more about building a digital media lab in your library? Trend watching is a great



**Figure 3.1**  
Digital media lab at Skokie Public Library (IL)

place to start. You would also need to do some more in-depth research to determine how to set up a digital media lab in a library and to identify benefits of incorporating a digital media lab into your institution.

A great way to learn more about digital media labs is to visit a library's website to read about their space. For example, you might visit my library's Make-It-Lab page (see figure 3.2) and read about the services and equipment we offer our customers. Some other webpages to visit include the following:

- Skokie Public Library's Digital Media Labs
- Johnson County Library's MakerSpace
- Kansas City Public Library's Digital Media Lab
- North Carolina State University Libraries' Makerspace
- University of Massachusetts Amherst Libraries' Digital Media Lab
- University of California San Diego Library's Digital Media Lab

#### *Topeka and Shawnee County Public Library's Make-It Lab*

<http://tscpl.org/services/make-it-lab>

#### *Skokie Public Library's Digital Media Labs*

<https://skokieliibrary.info/services/computers-technology/digital-media-labs>

#### *Johnson County Library's MakerSpace*

<https://www.jocolibrary.org/makerspace>

#### *Kansas City Public Library's Digital Media Lab*

[www.kclibrary.org/kcdml](http://www.kclibrary.org/kcdml)



**Figure 3.2**  
Topeka and Shawnee County Public Library's Make-It Lab website

#### *North Carolina State University Libraries' Makerspace*

<https://www.lib.ncsu.edu/services/makerspace>

#### *University of Massachusetts Amherst Libraries' Digital Media Lab*

<https://www.library.umass.edu/locations/dml>

#### *University of California San Diego Library's Digital Media Lab*

<https://library.ucsd.edu/computing-and-technology/digital-media-lab>

Each of these websites provides more information about the equipment and services each library makes available to its patrons. So read about what other libraries are doing, make a list of possible equipment and programs your library might be interested in, and adapt those ideas to work for your institution. You don't have to recreate the wheel!

### **Share the Vision with Management (and Get Permission)**

Once your research is completed, your next step is to create a short summary or executive brief about the digital media lab you would like to create in your library, including the steps needed to turn that idea into reality. This doesn't need to be a detailed, step-by-step description of every possibility. Instead, your goal here is to provide an overview of what the idea would look like in your library.

Once you have that executive brief ready, your

next step is to meet with your supervisor, your manager, or your library director and share your vision, supported by your research. Your goal here is simple: Convince the library team that creating a digital media lab is a good idea, and get permission to move forward with the project.

### Research Community Interest

Once your managers are on board with the idea, you should gather some information from your community about what it might want in a digital media lab. “Listening” in this instance means doing some community observation. To gauge interest in a digital media lab, you might look for these types of community activities:

- **Open mic nights.** Does your community have one or more open mic nights at a local bar or coffee shop? If so, that’s a sign of an active music community. That group might be interested in a digital media lab.
- **Active music scene.** Similarly, if your community has an active, thriving music community, you might have interest. Look for entertainment newspapers, music festivals, music stores, and venues with local artists playing music.
- **Local arts scene.** If there are art galleries showing local artists’ work, that means there may be artists interested in using the library’s digital media lab. Figure 3.3 shows community members at Topeka and Shawnee County Public Library’s opening reception in the library’s art gallery.
- **Start-up businesses.** New businesses may be interested in using a digital media lab for supporting their business ventures and marketing.
- **Local events.** My library has hosted an annual Podcamp (a type of social media conference) that attracted people in our community who might be interested in a digital media lab. There are also local photography groups, website-building groups, and more. The existence of these local events and groups signals that there is potential interest in a digital media lab.
- **Local schools.** High schools in my hometown have small digital media labs and classes on electronic music, photography, and graphic design. There might be some partnership possibilities for the library.

While this type of observation doesn’t ensure automatic customers for your new digital media lab, it does indicate potential interest. If you can gather



**Figure 3.3**

First Friday event at Topeka and Shawnee County Public Library

examples of potential interest, you can move to the next step: asking your community about its interest in this potential new library service.

To gauge interest in the new service, you can create a short survey that can be placed on your website (see figure 3.4) and made available in paper form at the circulation or reference desk. You can also ask by using social media tools. If possible, visit some of the groups mentioned above in person and ask them about the potential new service.

To find out more about your community’s interest in a digital media lab, you might ask survey questions like this:

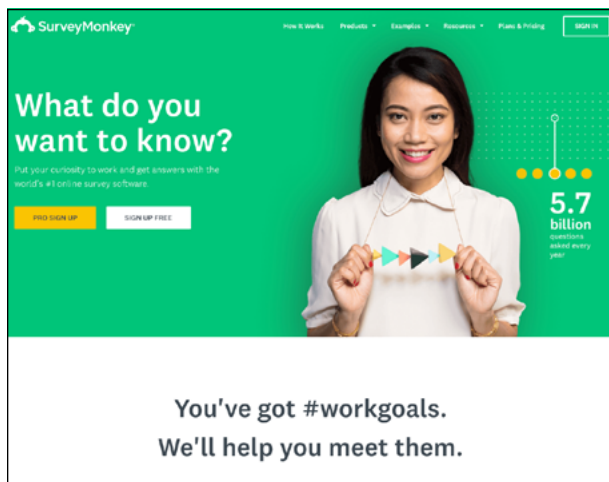
- Are you interested in the library offering tools to help create videos and photographs?
- If the library had a computer for video editing, would you be interested in using it?
- Do you like to create music? Would you like to do that at the library?

Once you have gathered this information, add your findings to the summary you’ve already written. Now you have a report describing the new service and potential customer interest.

### Create the Plan

Use the information you have gathered to make an informed decision about appropriate next steps for your library. Based on your research, you should know two important things: what other libraries have accomplished and your community’s interests.

Use what other libraries have done as a basic template for your library’s project. Then tweak that general template to meet the unique needs of your



**Figure 3.4**  
SurveyMonkey

community, based upon the community surveys and observations you have made. Based on your project idea and your research, you may need to plan for things like funding, staffing, equipment and software upgrades, and guidelines for usage.

A good starting point for creating your final plan is your library's strategic plan. Take the system-wide goals from your library's strategic plan, and build technology goals and objectives based on library strategy. Most of your research findings will likely fit into the library's strategic plan.

If some of your research findings don't easily fit into an already existing strategic plan, that's a great starting point for holding discussions with management. Present the plan to your supervisor or another interested manager. Depending on your management level in your organization, you might not have much say in planning new projects, but the manager will. They can be the project champion—going to administration and discussing the merits of the project.

You might look for things like the following in your library's strategic plan:

- **Working with entrepreneurs.** Entrepreneurs need tools to help create videos, music, ads, posters, websites, and so on. These people might have an idea but not the equipment or knowledge to start. The library can provide equipment, training, and resources to help entrepreneurs start.
- **Attracting teens to the library.** Teens love being creative, trying new things, and creating something new. You can help them do that, possibly even connecting what they are doing to their high school curriculum. You can also look into more formal school partnerships.
- **Building the community's cultural spirit.** Does your community have art festivals, art galleries and showings, or First Friday art walks? Does your

community have local musicians wanting to share their music? If so, your library can help these community members create and share their art, thus helping to build the community's cultural spirit.

- **Helping people preserve their cultural heritage.** A digital media lab can also serve people who want to scan old photographs or digitize family documents and memorabilia. In this case, your digital media lab might include a digital scanner and software and classes to help clean up older images. Offering this type of digitization service helps your community preserve its cultural heritage.

A digital media lab can fit nicely in a library's strategic plan, and so can many other types of emerging technology initiatives, with a little thought.

### Start Small

If your library doesn't want to embrace a full-scale technology project, you might think about starting small by creating a pilot project that will test potential success of the more fully formed project. Pilot projects are a great way to spend a little money, a little time, and a little space to see whether or not an idea will take off. Then you can expand (or not) as needed.

In the case of the digital media lab example, for your pilot project you might purchase one computer with some of the software and hardware installed that you would like to use in the larger project. Advertise the new, small service, and see if the equipment gets used. To find out what your customers would like to see in a larger version of the pilot project, you might put a "What's missing?" sign by the computer, and ask for customer suggestions.

Evanston (IL) Public Library is a great example of starting small. It developed a multiphase digital media lab project. Phase I of the project started with a single computer in the teen area.

Here's what the library says about its project:

We propose adding to the Teen Loft a single computer equipped with advanced software, as well as several media creation tools (cameras, microphones, green screen equipment, etc.). The Loft is a natural choice for this first step in upgrading the Library's technology offerings: staff there already have a knowledge of the software, the equipment can fit there and be monitored easily, many of its users are familiar with the technology or are eager to learn how to use it, and media creation has always been a highly nurtured activity in the Loft. Teens would have the opportunity to use the technology—for school projects or recreationally—to engage in projects that promote critical thinking, creativity, and skill-building. Teaching these technologies would also be a component of this action

step. Library staff with knowledge of this software could offer small workshops, as well as volunteers and teens themselves.<sup>2</sup>

After the Teen Loft was completed and deemed successful, Phase II was a dedicated digital media lab, open to adult users as well as to teens.

## Learning from Library Early Adopters

Hearing about the successes and failures of other libraries doing technology projects can be a great way to learn. There are a couple of ways to watch and learn from other institutions—indirectly and directly.

**Indirect learning.** If a library is doing innovative things with technology, it will often share what it's doing in blog posts, in articles, and in presentations at industry conferences. The library-focused trend-watching organizations and individuals mentioned in the previous chapter are sources of information about how new technologies are being implemented in all types of libraries.

**Direct learning.** You can also meet staff from these libraries and ask them what they're doing. You can meet at a conference or via social media. If you find someone who's doing what you want to do, make sure to "friend" that person. You can also email or call and ask someone to share. Most of us love describing what we do and will gladly share knowledge with others.

Another way to directly connect is to pile in the library van, take a road trip, and tour a library to experience their project or service firsthand. By visiting the library, you can see the facility, service, or technology in action, and you can talk directly to the staff involved in maintaining the service or resources—rather than talking primarily with a manager or library director, who might not have firsthand knowledge of the ins and outs of the service or offering.

## Conducting a Technology Process Review

So far, we've looked at ways to incorporate new technology into a library and ways to see what other libraries are doing. Now let's look at a great way to improve current technology and technology processes at your library: a process review.

A process review is just what it sounds like—it's a way to examine the technology you have in place, figure out if that technology still works for your library or your customers, and discover if there's something different your library should do.

There are four steps in a process review:

1. Gather information.
2. Obtain feedback.
3. Categorize responses.
4. Plan for next steps.

### Step 1: Gather Information

The first step in a process review is to figure out what's working and what's not. One way to do this is to use a Plus/Delta.

Often used as a tool to evaluate meetings, a Plus/Delta is a simple evaluation tool that you can use to determine what works and what needs to be changed or improved.

The steps in a Plus/Delta review include these:

- Gather a group of staff.
- Find something to write on, preferably large enough for the group to see. My library often uses flip charts.
- Make two columns, and mark one as the "plus" side. Write positive things on the plus side, like things that went well, positive customer comments, or improved service.
- The other side is the "delta" side. List things that did not go well, that need to be changed or updated, or what you would like to see changed.

Once you have your Plus/Delta list, start looking through the delta side. Figure out why something didn't work well, and start brainstorming how to fix it. Then you can move to the next step: obtaining feedback.

### Step 2: Obtain Feedback

During this step, you will need to create some focused questions to ask staff and customers about the product or service. For example, if you want to ask staff or customers about your library's website, don't just ask, "So, what do you think about the library's website?"

Instead, ask more focused questions like "What do you want to do on the website but can't?" or "What's missing?" or "What's there, but seems to be clunky or confusing?" or "What frustrates you?"

These questions can be asked in a variety of ways, including face-to-face in a focus group or online, through surveys. Write down everything staff and patrons say, and then move to the next step: categorize responses.

### Step 3: Categorize Responses

At this point you have done your brainstorming session and your Plus/Delta work. You have probably talked to some staff and maybe even to some customers about ways to improve the service.



Look through the information you have gathered for similarities. Most likely you will find one to five major areas that can be improved. Rank those areas in the order of importance. What has the biggest bang for the buck? What process improvement will positively affect the most staff or customers? What might be cheap but useful?

Then, make a list of priorities and begin planning the next steps.

#### Step 4: Plan for Next Steps

Now comes the hardest part: deciding what processes to focus on and starting the improvement work. This step will depend largely on the library's budget, staffing levels and expertise, and goals.

Thankfully, sometimes a small tweak to an existing process might make a great improvement. For example, my library's IT department has participated in a departmental process improvement review. One area we needed to improve was our help desk process. We discovered that non-IT staff sometimes felt the answers they were receiving from the help desk were not fully addressing their problems.

The IT department's process improvement for that issue was to create a simple follow-through procedure for help desk issues. Now, when someone calls or emails our technology help desk, whoever takes the call or email owns the problem, and that person will follow it through to completion. If the problem is passed to someone else to work on, the IT staff member who originally took the call or email will follow up with the staff member who sent the original message to make sure everything was fixed to their satisfaction. This allows the IT department to make sure our customers (staff) get the answers they need so they never feel like their request goes into a black hole.

This simple change has made a huge difference in our library!

### Dealing with Technology Overload

Finally, let's discuss technology overload. It's easy to feel overloaded when you are trying to stay on top of ever-changing technology trends. Thankfully, there are some simple tips you can use that will help achieve balance.

Here are some ideas to help:

- **It's OK if you miss something.** So far, I have encouraged you to monitor RSS and email feeds and to find information from social media sites like Twitter. Even though you have been a good reader and have set up all these listening tools (you did, right?), it really is OK if you miss some important technology news. If something is truly

a game-changer for your library, I guarantee that you will eventually hear about it. So, if you miss something the first time around, don't worry. You will have more than one opportunity to encounter the idea and to make that change in your library.

- **Skim the headlines.** I would advise you to treat news feeds and other online learning the same as browsing headlines in a newspaper. You don't have to read everything word for word. Instead, skim headlines, and then read what seems important or interesting. You'll be surprised at how much you can pick up that way.
- **Schedule your skimming.** Why not schedule times to keep up? For example, set your calendar to remind you to skim news feeds or social media at regular intervals (e.g., every day or once a week). This can save time and help you more fully focus on other, more important projects.
- **Unsubscribe selectively.** As I mentioned, I follow around 500 news feeds. I know some people who keep track of over 1,000 feeds. That's a lot of information flying by a news reader! Sometimes it's good to go through news feeds and email lists and delete the ones that are no longer beneficial to you. If you miss something important that was shared on a resource that you removed from your news feed, you will most likely be introduced to the idea in another way.
- **Use time-saving tools.** Using tools like news readers, search engine alerts, or email lists can save time since the updated news from each site comes to you. You can then read on your own schedule.

Here are a couple of sources for more tips on how to avoid trend watching overload:

- Simplyzesty.com. "10 Tips & Tools to Deal with Information Overload." TeachThought website. Accessed November 28, 2017. <https://www.teachthought.com/technology/10-tips-and-tools-to-deal-with-information-overload>.
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### Notes

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2. "2012–2014 Strategic Plan Progress Update," Evanston Public Library, Board of Trustees Meeting Minutes, draft, June 20, 2012, pp. 17–18, [www.epl.org/wp-content/uploads/2016/10/20120620BoardPacket.pdf](http://www.epl.org/wp-content/uploads/2016/10/20120620BoardPacket.pdf).

# Current Technology Trends

## *How to Prepare and When Not to Pursue*

In the previous chapter, we discussed how to incorporate emerging technology trends into your library and explored ways to improve currently existing technology. In this final chapter, we focus on preparing yourself and your library for those emerging technology trends.

We will explore

- ways to prepare for rapid technology change
- fads, trends, and tipping points
- knowing when to pursue (and not to pursue) an upgrade

### Ways to Prepare for Rapid Technology Change

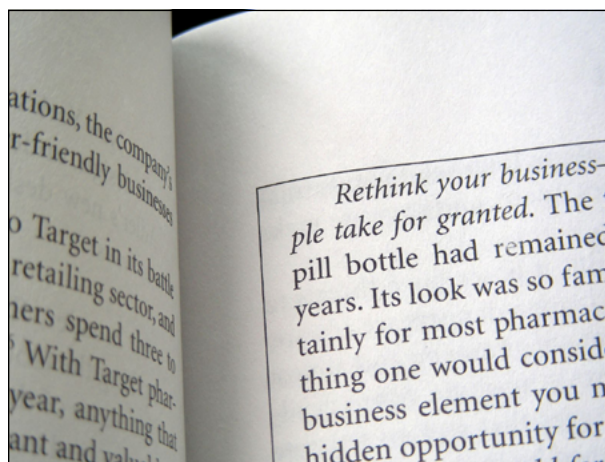
While we can't gaze into a crystal ball and know for certain what new technology will appear at your library in the future, there are ways to be prepared to capitalize on future developments—both individually and organizationally.

#### Individual Preparation

You can't always change an organization, but you can change yourself. Or at the least, you can prepare yourself for change. Here are some ways to prepare yourself to capitalize on future technologies.

##### *PURSUE LIFELONG LEARNING*

Lifelong learning is vital to the technological success of the library and to your professional development. For example, in reference services there are always new reference tools, new types of services to develop



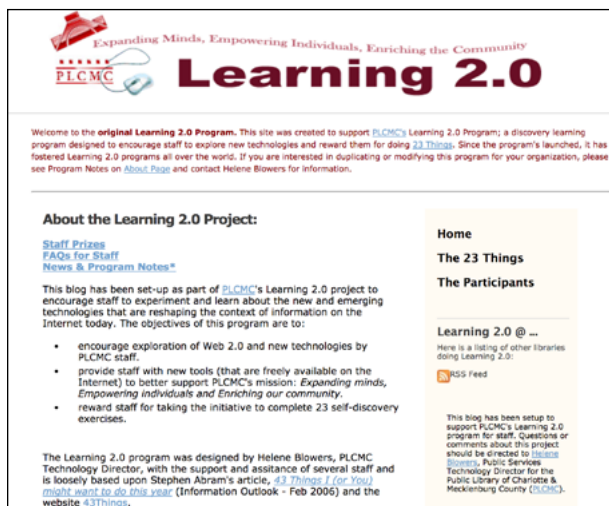
**Figure 4.1**  
Reading

for the library, and ever-changing questions from our evolving community. In fact, the very nature of our jobs—helping people find information—is based on continual learning.

Make sure to start learning, and to keep learning throughout your career. If your library provides technology classes, either for staff or for the public, sign up for them. You can also ask your technology staff to show you new products, services, and tools.

##### *ACTIVELY SEEK LEARNING OPPORTUNITIES*

You can find a lot of learning opportunities online. In 2006, the Public Library of Charlotte and Mecklenburg County created a fun, self-directed staff learning program—23 Things (figure 4.2)—that can still be mimicked in today's fast-paced technology environment.



**Figure 4.2**  
The original 23 Things website

23 Things inspired numerous other library efforts to promote staff exploration and learning. For those of you not familiar with the 23 Things program, it's an informal technology course that helps the student learn something new each week for twenty-three weeks. A more recent self-directed learning program is 23 Mobile Things developed by the Guldborgsund Libraries in Denmark and the State Library of New South Wales in Australia.<sup>1</sup>

Another way to promote personal learning opportunities is to use lists of library-related technology competencies as a personal training checklist. For example, Denver Public Libraries has published a list of technology core competencies.<sup>2</sup> Although parts of the list are specific to its libraries, some of the competencies are more general and work for multiple libraries.

Also, check out the Nebraska Learns program. The Nebraska Library Commission created its first 23 Things program in 2008. When the original program finished, it had so many requests to do more that it has developed a 2.0 version. From its About page:

Nebraska Learns 2.0 continues to be a self-discovery program which encourages participants to take control of their own learning and to utilize their lifelong learning skills through exploration and PLAY. There will be no formal classes or workshops offered to support this program. Instead, participants are encouraged to work together and share with each other their discoveries, techniques, and "how to's," both in person and through their blogs.<sup>3</sup>

#### TREAT WORK LIKE A HOBBY

If you have a hobby, you are probably a lifelong learner of that pursuit. Here's my advice: apply that mentality

to your job. This might mean setting up some of the listening tools mentioned earlier in this publication, reading about some technology trends, or doing a hands-on test of some new technology devices.

Don't give up your other hobbies. I'm not asking you to give up your membership at the YMCA to join the Linux Hackers Club. However, I am encouraging you to develop a healthy curiosity about technology and to expand your skill set to continually learn new technology and stay on top of emerging trends.

#### TRY NEW THINGS

If you read about a new social media service, think about testing it. For example, when Vine—a social media video service and video creation app—first came out, I experimented with it to see how the app might work for my library. With the Vine app you were able to create short, six-second videos, tag them, and share them with Vine and Twitter friends.

*Vine Archive*  
<https://vine.co>

Did these experiments lead to my library using Vine? Yes, they did—but only for a short period of time because Vine is no longer in operation. Vine folded in October 2016, but the archive is still accessible to watch videos.

Using Vine in our library illustrates some aspects of exploring emerging trends:

- Our library was relevant and forward-thinking—experimenting with a new technology tool and then implementing it and introducing it to our patrons.
- Sometimes fast-moving technology is just that—fast. Vine lasted for four years.
- We learned important things. In the case of Vine, we learned how to make quick videos on our smartphones. We learned about editing and how to quickly get to the point. (You have to be focused in a six-second video.) And we learned that video is not scary. My library now has a video team—in part because we experimented with Vine.

#### Organizational Preparation

Like individuals, organizations can also be lifelong learners. Your library can develop a culture of continuous learning that helps the library and library staff prepare for emerging technology trends.





**Figure 4.3**  
Training at Topeka and Shawnee County Public Library

#### LISTENING

As already stated, listening to customers (via setting up some online listening tools) can be a great strategy for learning about technology needs and interests. Set up formal focus groups with customers to ask about their current use of technology. Also, continually observe customers as you interact with them, and watch for emerging technology trends. Then work on matching the trends you observe with library services.

#### TRAINING

This one should be obvious. Libraries can organize training programs for learning new technology (figure 4.3). Workshops can run the gamut from a large, formal training program to an informal monthly gathering of staff sharing new things they have discovered.

#### LEARNING FROM FAILURE

Failure can be a good thing! Allow staff projects to fail in appropriate settings. For example, if you have created a pilot program to test a new technology trend, allow for both success and failure. If the pilot project succeeds, you can expand and grow as needed. If it fails, you have also learned about the trend, about running a pilot project, and about your community.

Here is an example of a time my library learned from failure: We set up shop in Second Life (figure 4.4) when it was a promising, emerging technology trend for libraries. We had a Second Life team at the library, with staff actively creating information to share via Second Life.

We had some successes: We were mentioned positively in the library press at the time and were used as examples of libraries doing interesting things in Second Life. But ultimately, the project was a failure because our customers never embraced Second Life. We closed up shop on Second Life and moved on to other projects.

Even though this project did not catch on, we learned we could successfully represent the library in a virtual setting—not a bad thing to know, since currently there’s a renaissance of virtual reality (VR) and augmented reality (AR) apps and experiences.

#### SHARING

Make sure to share things you have learned. Allow time during staff meetings for sharing about some-

thing you or your coworkers have learned or have experienced at a conference or class. You don’t even have to wait for a monthly meeting to roll around to start sharing. You could also share in these ways:

- Use the email distribution list at work.
- Post to the staff-only intranet or blog.
- Share in person at regular departmental meetings.
- Informally share with other staff members.
- Share with managers, and suggest ways to incorporate the idea into your library. (But be careful; if you make a suggestion, you might be asked to lead the pilot project!)

## Fads, Trends, and Tipping Points

Now that you are ready (and, I hope, willing) to face technology changes head-on, let’s look at emerging versus submerging technologies. How can you tell the difference between a trend and a short-lived fad, and what’s a tipping point?

### Trends versus Fads

There are some telltale signs when a technology trend is emerging: You will definitely hear about the emerging trend in online and traditional media. You might see stickers on a restaurant door or on the back of cars (figure 4.5). The morning radio DJ or TV personality might mention a trend. You might also notice library customers start to use and ask about the new technology.

A true trend takes time to emerge. As I wrote earlier, social media is a strong trend. It's at least ten years old, and it has changed dramatically every couple of years. But the key feature behind the evolving social media services—easy online communication and sharing—remains the same.

Smartphones are another great example of an emerging trend. Remember BlackBerries and Palm Treos? Both were phones that did more than just make calls. I had the Treo 650 around 2004. Suddenly, I could take photos, send emails, and use my phone for a calendar. Not too many people owned Treos. Compare that with today's smartphone-rich environment. According to Pew Research, 77 percent of Americans own a smartphone. A few years ago, in 2011, that was just 35 percent.<sup>4</sup> Smartphones and other mobile devices are a rocketing trend. My Treo doesn't exist anymore; it was a stepping stone within the larger trend.

Not every new tool will catch on, though. There are some strong warning signs that a technology tool is more of a fad than a trend:

- If a service stops being updated, that's a strong indicator the service might disappear soon. For example, Google Reader wasn't significantly updated for years. In the summer of 2013, Google discontinued the service.<sup>5</sup>
- If use of the service is diminishing, that's a good indicator of a fad. Myspace is an example. As newer social media tools appeared, people actively deleted their Myspace accounts or let them go dormant.
- The technology might be too difficult to use. Second Life and Minecraft are both virtual worlds, and a major activity in both is building things; however, Second Life was difficult to use and never became very popular. Minecraft, however, includes activities similar to those in Second Life, but it's easy to use, and kids love it. If you work in a public library, I'll guess that you had customers using Minecraft today.

Remember also that even though a specific tool or service might be a fad, the idea behind that tool or service might be part of a growing trend. Google Reader is a good example. People still subscribe to websites using RSS feeds or email addresses, but other services (like Feedly) have taken the place of what Google Reader used to provide.



**Figure 4.4**  
Standing with my Second Life committee outside our virtual building

Second Life is another example of a fad that represents an idea that is a trend. Second Life was (and still is) a virtual world, and today it would fall squarely into the virtual reality field. While Second Life didn't take off as a mainstream service, the idea of augmented and virtual reality has started to take off. You can see this in products like the HTC Vive or the Microsoft HoloLens, or even in the simple augmented reality that Pokémon Go provided on players' smartphones.

Finally, a Tipping Point is simply an emerging trend that hasn't yet been fully implemented by all libraries and/or library staff, for a variety of reasons. For example, a library having adequate Wi-Fi bandwidth might be considered a tipping point. Most library staff would agree that the library needs adequate bandwidth. However, when it comes to budget time and something needs to be cut from next year's budget, the Wi-Fi bandwidth upgrade might be cut. Or, the library might agree that more bandwidth is needed, but Internet providers in the area (especially in rural communities) might not be able to provide the bandwidth that the library needs.

## Knowing When to Pursue (and Not Pursue) an Upgrade

When the next new thing comes out, it's sometimes tempting to be ahead of the curve and to get that new thing in your library. Sometimes that's a great idea, and sometimes it's not. How can you tell when to jump and when to wait?



**Figure 4.5**  
Snapchat sticker in a Starbucks

First of all, I'll state this: You simply need to download computer software upgrades. Software companies fix bugs and under-the-hood issues all the time and then push those fixes out as software updates. They also offer new tools and services. And guess what? Those companies aren't going backward. If you really liked an earlier version of Microsoft Word, for example . . . you are out of luck. Microsoft eventually won't support it.

Instead of putting off the inevitable, go ahead and do regular updates and learn the new way to do things. Believe me, that type of incremental learning is much better than having to learn a lot of new things all at once.

For larger technology projects, tools, and services, here are some things to think about in relation to when it's time to update:

### It's Down Again

If you have older technology that is starting to have more downtime than it used to, it's probably past time to upgrade. The best way to deal with this problem is to not let it happen. This means when you buy new technology—even big-ticket items like an integrated library system—you need to think about that product's end date too and set a date to start looking

for a replacement. This date should be either to replace the tool itself or, at the least, to upgrade the underlying technology that makes that service work. One example would be a server replacement.

### Missing Opportunities

Sometimes, you might notice you are missing opportunities by not upgrading. For example, my library's computer training lab has used the previous Microsoft operating system (OS), and patrons started to ask when we would upgrade the computers, so they could learn the new Microsoft OS. That meant we were behind and needed to upgrade. By not upgrading, we were missing some training opportunities in our community. So, we upgraded.

### End of Life

If you have a data center in your library, you know that servers and software often have an "end of life" date after which your vendor will no longer provide support for that software or hardware device. Keep track of those dates, and upgrade before you go past end of life if possible. The same thing applies to your computer: Try to replace it every four or so years.

### Experiencing Growing Pains

Sometimes, a new technology project will present itself because of growing pains. Some of you may remember how your internet signal would slow down in the afternoons when the kids got out of school and congregated around your library's computers and internet access. That's a great example of needing more bandwidth.

Recently, my library's bookmobile staff shared that they have customers visiting the bookmobile with their tablets. Those customers want help downloading e-books. Unfortunately, the bookmobile staff can't help because we don't have Wi-Fi available on the bookmobiles for customers to use. We use Verizon MiFi hotspots for the bookmobile staff computers to connect to library systems, but we don't allow customers to connect to our MiFi devices.

Our enterprising bookmobile staff created a possible solution to the problem. They suggested that the library install a second MiFi device on each bookmobile and use that for public Wi-Fi on the bookmobiles.

It's a simple solution that should help address those growing pains.

## Embrace Emerging Technology Trends

Technology, emerging trends, and the accompanying change those trends bring can be a bit intimidating—both to library customers and to library staff who haven't yet figured out how to navigate technology change.

I hope the ideas presented in this issue of *Library Technology Reports* have shed a little light on some simple ways to help you keep up with technology changes and embrace those changes, rather than having changes thrust upon you.

You can start slowly. Think about just one new technology challenge you are having and learn that new technology product or service. Keep on learning—be

a lifelong learner—and you will be on your way to growing and changing along with technology.

## Notes

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