A Closer Look

U.S. Public Libraries and the Use of Web Technologies

October 2009

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LRS
Library Research Service

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by
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Executive Summary

The use of interactive web technologies on public library web sites in the United States has been a topic of much discussion in recent years, and a shift in certain types of user services is underway. Terms like “Web 2.0” and even “Library 2.0” have become common in library literature and at conferences as those on the early edges of this shift share their successes and failures with the broader library community. The Library Research Service (LRS) was interested in adding to this conversation and, in late 2007, designed the study *U.S. Public Libraries and the Use of Web Technologies*. In spring 2008, LRS staff visited the web sites of nearly 600 public libraries in the United States, searching for the existence of certain web technologies, including technologies defined as “Web 2.0.” The web sites that were examined were drawn from a stratified sample of public libraries in the United States, with approximately equal numbers of libraries included from each of five different population ranges. Additionally, staff visited the web sites of all public libraries in Colorado. Two main sets of results were derived from the study: 1) how many public libraries in the United States (and Colorado) were implementing certain technologies on their web sites, and 2) what were the characteristics of the libraries that could be identified as “early adopters” of web technologies. A third set of conclusions – does the early adoption of such technologies increase the libraries success in traditional service areas – awaits the release of more current, available national public library data.

For the most part, public libraries in the United States have been relatively slow to adopt the more interactive Web 2.0 technologies. In fact, as a whole, public libraries have been rather slow in adopting even the most basic web technologies. Just over four in five (82%) public libraries in the country had a web presence, and just over half (56%) offered online account access to their patrons. Not many were reaching out to their patrons by utilizing some of the newer technologies available. Less than a third of public libraries in the United States offered any of the following that LRS staff could locate: a blog, e-mail reference, or chat reference. Hardly any had moved onto popular social networking sites that were often mentioned in library conferences and literature. As might be expected, the smallest libraries in the nation were those that were least likely to have any of these web technologies – not even three-fourths (73%) of libraries serving fewer than 10,000 had a web presence found by LRS staff, and fewer than half of them offered access to their online catalogs. Very few provided any web technology whatsoever beyond the most basic. Larger libraries, while much more likely to have adopted the technologies, were still far from universal in their adoption of anything beyond the most basic.

Libraries that were in the top twenty percent of their population group in terms of number of technologies adopted were labeled “early adopters” for the purposes of this study. Based on 2005 national data, which was the most recent data available at the time of the study, these early adopting libraries were more successful, by traditional measures, than their peers. Libraries that were early adopters were much better funded and staffed than other libraries, and in fact surpassed their peers by large margins on nearly every statistical measure. These libraries had more visits, circulation, reference transactions, and programming use, as well as more audio and visual materials. The one notable statistic where early adopting libraries did not outpace other public libraries was in the number of books held. Since the national data was from 2005—before most of this technology was implemented—it can be suggested that successful

public libraries in the United States had decided to put their resources into more advanced web technologies. Determining whether these ventures onto the web were successful should be the focus of follow up studies.

At this writing, a follow-up study is being designed. In spring 2010, LRS staff will again take the pulse of U.S. public libraries in relation to web technologies. For more about these studies, please visit http://www.lrs.org/public/webtech/.

Introduction and Methodology

Recently, the idea of Web 2.0 and, by extension, Library 2.0, has been a highly discussed topic within libraries. Much of the literature and discussion has focused on the implementation of 2.0 technologies to reach out to users. The topic of Library 2.0 has been the focus of many conference presentations, and at least one entire conference, Internet Librarian 2007, built its theme ("2.0: Info Pros, Library Communities, & Web Tools") around the concept. With so much information out there on how to reach out to the community using 2.0 tools, by 2008 there had still been little or no discussion about the prevalence or effect of Web 2.0 technologies.

This study, *U.S. Public Libraries and the Use of Web Technologies*, attempts to provide some of that information by examining the web sites of both a sample of libraries in the United States, and all libraries in the state of Colorado.

After much consideration, *U.S. Public Libraries and the Use of Web Technologies* was designed as an observational study, rather than a survey to the field. While both methodologies have positive and negative aspects, the observational method was deemed best for this study for a variety of reasons. A primary reason was based on an ongoing intentional effort at the Library Research Service (LRS) to rely on available data when possible and reduce the number of surveys that are sent out into the field. Another advantage of the observational method was that, since the survey instrument was being completed in-house, a 100% response rate was assured. Additionally, completing the study in-house meant having more consistent responses. Rather than sending a survey to over 500 libraries and relying on the respondents to interpret questions consistently, there were only had a handful of people making decisions, and when a library's web offerings constituted a gray area in the survey tool, the small group was able to confer to decide upon the most appropriate response. Thus, during the spring of 2008, LRS staff members visited the web sites of 590 public library web sites, searching for the presence of specific Web 2.0 technologies. Of these 590, 483 were part of the national sample. The remaining 107 were Colorado public libraries that had not been selected in the sample.

Of course, there are also a few weaknesses with the observational model of study design. Chiefly, this design was dependent upon a researcher who was unfamiliar with a public library's web site to find the presence of specific technologies on that web site. This limitation was mitigated through the use of multiple search strategies to attempt to locate technologies. Additionally, before performing the study on the actual sample, the cadre of researchers went through a test period with non-sample public library web sites, working together to hone the items on the survey instrument and identify strategies to find the existence of 2.0 technologies. In the end, it was decided to take the stance that if a researcher looking for a specific technology could not find it, it was likely a "regular" user would have trouble as well, and therefore for all intents and purposes, that technology was not available to the public.

The results included here represent a "snapshot in time" for each library. It is quite possible that a library adopted a specific technology shortly after we visited their web site. In such a case, for this study they will still be treated as not having the technology in question. Also possible,

though less likely, would be libraries who abandoned technologies shortly after we visited their site. That said, care was taken to search the library web sites as comprehensively as possible.

Sample

Public libraries of different sizes have vastly different characteristics in terms of inputs and usage, and these differences no doubt appear in the realm of web technology usage as well. To address these disparities, a stratified sample of public libraries was generated, based on the library's legal service area population. One hundred libraries were randomly selected from each of the following service population groups: below 10,000 served; 10,000 and 24,999 served; 25,000 and 99,999 served; and 100,000 and 499,999 served. All 83 public libraries that serve at least 500,000 people were selected for inclusion in the study. The sample was chosen from the most recent national data available at the time of the study – provided by the 2005 Public Library Report, collected by the National Center for Education Statistics and released by the Institute of Museum and Library Services. In addition to the libraries selected for the national sample, all Colorado public libraries that were not in the original sample were included to look specifically at the prevalence of web technologies in public libraries in the state.

Survey Design

By their nature, terms such as Web 2.0 and Library 2.0 have definitions that are in constant flux (see literature review). Central to either of their evolving definitions is the ability to react and adapt to changes in technology. Wikipedia defines Library 2.0 as

> "a loosely defined model for a modernized form of library service that reflects a transition within the library world in the way that services are delivered to users. The focus is on user-centered change and participation in the creation of content and community…This includes online services such as the use of OPAC systems and an increased flow of information from the user back to the library."[1]

This study focused on library web sites, where most of this user-centered change was taking place in public libraries. Much consideration was given to determining which Web 2.0 technologies to include in this study.

In the spirit of the Library 2.0, LRS used a survey creation tool, which allowed a number of people to contribute comments and category suggestions. The first group included in survey instrument design was LRS staff members. After determining a general structure, advice from outside of the organization was requested. This was done via informal interactions with local colleagues, and direct solicitation of input from external experts in the field.

The final survey instrument (see Appendix A), completed in early 2008, identified six categories of web technologies to study. They were:

[1] Wikipedia.org – accessed September 29, 2008

- Web Presence and Online Catalog – did the library have an online presence, did it provide access to an online catalog, and what Web 2.0 services were available from within the catalog?
- Blogs/RSS – did the library have a blog or blogs or provide RSS feeds for blogs or other content?
- Personalized Account – what features were available after the user logged into a personalized library account?
- Virtual Reference – what types of remote reference services did the library provide, including instant messaging, email, and text messaging?
- Wikis – did the library offer wikis that were available for the public to contribute to?
- Social Networking – outside of the library's web site, did the library have a presence on MySpace, Facebook, or Flickr?
- Podcasting – did the library provide podcasts or facilitate podcasting?

LRS staff was able to successfully assess the presence of various technologies for most of these categories. However, one area that was identified and later abandoned was the robustness of the Personalized Account sections of the web sites and the functionality available in those areas. For most public library web sites, accessing that area required a library card login, which was not available to researchers in most cases. As well, it was not possible to determine how libraries were using Web 2.0 technologies within their staff intranet sites. These areas both deserve further study, but were not possible with this observational-only model.

Once the survey tool was finalized, LRS staff members began visiting the web sites of the public libraries included in the study. The web sites were studied between March and May of 2008, and data analysis began in summer 2008.

Literature Review

By Briana Hovendick

Defining Library 2.0

Conceptually, Library 2.0 is rooted in the global Web 2.0 discussion, and the professional literature often links the two concepts. Several authors (Boxen, 2008; Lawson, 2006; Murley, 2008) agree that the term Web 2.0 became notable after the first O'Reilly Media Web 2.0 conference in 2004. According to O'Reilly (2005), Web 2.0 marks the World Wide Web's shift from a collection of individual web sites to a computing platform that provides applications for end users, and can be viewed as a tool for harnessing the collective intelligence of all web users. Hallmarks of the Web 2.0 shift include the proliferation of user-created content, and the fact that, to many users, the Internet has become the computer ("Ongoing Revolution," 2007). Abram (2008) argues that Web 2.0 is a social phenomenon and urges skeptics to remember that "Web 2.0 is just the title of a conversation" (p. 20).

Library 2.0 is a somewhat diffuse concept, and the literature reflects this. The term is generally attributed to Casey, who first used it in early 2006 (Boxen, 2008). Casey (2006) defines Library 2.0 as user-centered change that gives library users a participatory role in the design of physical and virtual library services. Other definitions abound. Crawford (2006) identifies 62 separate views and seven different definitions of Library 2.0. Some writers (Crawford, 2006; Lankes, Silverstein, & Nicholson, 2007) concede the absence of a universal definition for Library 2.0 contributes to a high level of ambiguity and even confusion about the concept.

Other notable perspectives of Library 2.0 include:

- Library 2.0 is a narrative about how to use Web 2.0 technologies (such as blogs, wikis, and RSS feeds) in a library environment (Abram, 2008).
- Library 2.0 is about finding ways to better share data in proprietary systems in ways that make it easier for librarians and others to access and use the information in novel ways (Lawson, 2006).
- Library 2.0 responds to the needs of modern library users by providing information whenever and wherever a user requires it (Chad & Miller, 2005).
- Library 2.0 represents a paradigm shift in the way librarians and patrons view library services; it's about the library being more visible in the community through programming, technological outreach, and community-building (Farkas, as cited by Crawford, 2006).
- Library 2.0 technologies will turn public libraries into platforms for the storage and dissemination of local community knowledge within the global context (Chowdhury, Poulter, & McMenemy, 2006).
- Library 2.0 represents a "new order" in which access matters more than validity and "information management and provision are no long under the purview of the librarian" (Pin, 2008, p. 245).

Some of the literature about Library 2.0 is focused solely on 2.0's practical applications for specific environments. For example, Boyd & Iovino (2008) discuss how Library 2.0 tools (such as blogs, wikis, and podcasts) have changed the way library schools teach students and conduct classes. Hastings (2007) describes how the Missouri River Regional Library used Web 2.0 tools to create a self-paced Library 2.0 learning program for staff. Wyatt (2007) offers suggestions for using Library 2.0 tools to enhance reader's advisory services.

Key Components

Despite the absence of an authoritative definition of Library 2.0, there is robust discussion in the literature about the key components of a successful Library 2.0 program. The discussion focuses on trust, openness, a willingness to let front line staff experiment with Library 2.0 tools, and a commitment to frequent evaluation of services.

Friedman and Booth (2008) call for a more open and trusting culture within libraries, where staff members can try 2.0 tools and "have the freedom to move quickly with new ideas rather than crawl through minefields of momentum-stifling bureaucracy". Aside from institutional support, the authors remind librarians that they will have to embrace change and be ready to take risks if Library 2.0 initiatives are to succeed. Eisenberg (2008) echoes this sentiment when he argues that librarians "must be viewed as champions of new forms of information and access" (p. 25).

Trust is an important part of the formula for Library 2.0 presented by Fichter at the 2006 Computers in Libraries conference ("The Ongoing Web Revolution", 2007). According to Fichter:

Library 2.0 = (books and materials + people + radical trust) x participation

The belief that trust drives change is a central theme in the Library 2.0 literature. In good organizations, staff members will confidently experiment with 2.0 tools and know that their decisions are supported by the organization. "Forbidding staff members to publish to the library blog, for example, because you can't control what they might say is not trust, let alone radical trust" (The Ongoing Web Revolution, p. 11). Several authors (Friedman & Booth, 2008; Eisenberg, 2008; Lankes, Silverstein, & Nicholson, 2007) advocate a "culture of play" within library organizations, where staff can hone their 2.0 participatory skills in a virtual sandbox where risk-taking is encouraged. They also urge librarians to have fun with new technologies.

Aharony's study of Web 2.0 use by librarians illustrates the need for a culture of play if Library 2.0 is to succeed. The author surveyed 168 librarians on their use of Web 2.0 and found that librarians who were more open to change and who felt more empowered were more likely to use Web 2.0 tools (Aharony, 2008).

Another prominent theme in the literature is service evaluation. Library 2.0 necessitates frequent evaluation of services, which goes against the traditional library paradigm of "plan, implement, and forget" (Casey & Savastinuk, 2006, p. 42). Library 2.0 encourages regularly solicited customer feedback and frequent evaluation of services. In their column, "The Transparent Librarian," Stephens & Casey (2008) contend that the most difficult part of 2.0 librarianship is the reexamining of long-held ideas about library services. The authors offer several simple

suggestions for service evaluation, including tracking hits for blogs and wikis, following posted comments on library blogs or news sites, and mining user behavior. In another article, Stephens (2008) suggests ten steps for implementing a Library 2.0 program and measuring return on investment. Stephens believes Return On Investment is best proven with qualitative data reflecting positive user experiences and increased usage.

Criticism

Inevitably, some of the Library 2.0 literature debates the merits and drawbacks of the concept. Some writers characterize Library 2.0 as a passing trend. Lynch (2007) urges libraries to be clear on what they want to accomplish with virtual library presences before "hopping on the next-trend bandwagon" ("Seattle fish throwers inspire conference goers," p. 59). After analyzing 62 separate views on Library 2.0, Crawford (2006) concludes that Library 2.0 may indeed be a bandwagon and that the term "means whatever anyone chooses to claim it means" (p. 6). The author distinguishes between Library 2.0 ideas and the label "Library 2.0." While Crawford believes Library 2.0 ideas can be constructive, the "Library 2.0" hyperbole is frequently confrontational and frames Library 2.0 as a debate between those who are willing to embrace change and those who are not.

Others argue that few libraries are actually ready for Library 2.0. Hartman (as cited by Lawson, 2006) acknowledged an in-house version of the digital divide that makes many libraries unable to take steps to Library 2.0. West (as cited by Lawson, 2006) writes about her work with rural librarians and urges those at the forefront of the Library 2.0 movement not to move ahead "when some of us are still in 0.98 beta" (p. 20). Crawford (2006) contends that libraries can never be all things to all people; a library will fail if it attempts to establish a virtual presence and stretches its staff and resources too thin in the process.

Crawford also believes that the paradigm shift implicit in Library 2.0 is nothing new; librarians have been talking about and facilitating change for many years "without always feeling the need to wrap a hip term around it" (p. 10). Cohen (as cited by Lawson, 2006) echoes this sentiment when he urges librarians not to fool themselves "into thinking that this is one of those 'ah hah' moments in librarianship" (p. 20).

Support

Most of the literature, however, seems to advocate Library 2.0 initiatives. It encourages libraries to view Library 2.0 in a more modest way, and offers suggestions for overcoming the challenges of Library 2.0 adoption.

Huwe (2007) argues that Library 2.0 can enhance communication in all directions within a library, provided librarians engage in continuous planning. According to Huwe, continuous planning is easy when librarians use the Library 1.0 skills they already have.

In a discussion of Library 2.0 and its implications for law libraries, Murley (2008) advises librarians to "think of Library 2.0 as a toolbox from which you choose the tool that will help you

meet your users' needs" (p. 201). Gordon (as cited by Murley, 2008) echoes this view, arguing technology is only a tool and never the reason for change.

Lankes, Nicholson, and Silverstein (2007) claim many of the problems libraries experience with Library 2.0 stem from an excessive focus on the technology involved. Instead, librarians should "focus on the phenomena made possible by the technology" (p. 23). Stephens (2008) dubs this technology-exclusive focus "technolust" and the feelings of anxiety that accompany it "technostress." Stephens urges librarians not to over-think Library 2.0 and to experiment with various approaches to find the best fit.

The professional literature also seems to reflect an understanding of the financial and managerial concerns that may hold libraries back from implementing 2.0 tools, and several authors offer suggestions for overcoming these problems. Casey & Savastinuk (2006) suggests Library 2.0 services don't necessarily have to be high-tech or expensive, and advocates the use of free, web-based applications such as Flickr and Writerly for Library 2.0 initiatives. Lawson (2006) acknowledges that Library 2.0 may include changes in library policy and physical space, such as revised food/drink policies and gaming nights for teens.

New Directions

While predicting the future of Library 2.0 is difficult, the literature offers some insight into the direction it may take. Much of the most recent literature focuses on providing library services via short message service (SMS) and on applications related to collection development and reader's advisory.

Some libraries already use the SMS-based Twitter service to broadcast library news and interact with patrons (Milstein, 2009), and more SMS (or text message) services are emerging. Pin (2008) discusses how Singapore's National Library Board responded to this change by introducing a reference service provided via text message. Some libraries in the U.S. offer similar mobile service, including alerts on holds via text message and text message reference (Coombs, 2009). This type of mobile service is likely to become more popular as the use of mobile devices grows (Goldsborough, 2009).

Thanks to the profusion of user-generated content associated with Library 2.0, the selection process and reader's advisory services are also changing. Tomaiuolo (2009) discusses how collection development officers can take advantage of online customer reviews when deciding which material to buy. Sodt and Summey (2009) advocate a purchase-on-demand selection process to make libraries more user-centered. Stover (2009) introduces readers to three social networking sites for bibliophiles (LibraryThing, GoodReads, and Shelfari) and discusses how the user-created lists and tags can be used to enhance reader's advisory services.

Summary

This review focused on literature from professional journals and trade publications in library and information science. Except in a few instances, information from blogs, wikis, and other electronic media were not included. This is worth noting, as much of the discussion about

Library 2.0 originates in such forums before it appears in professional literature. As it currently exists, the literature makes it difficult to generate evidence-based research on Library 2.0, so no evidence-based research is discussed in this review. Instead, the literature included here provides an introduction to Library 2.0 concepts and the sometimes divergent views of its value.

National Results

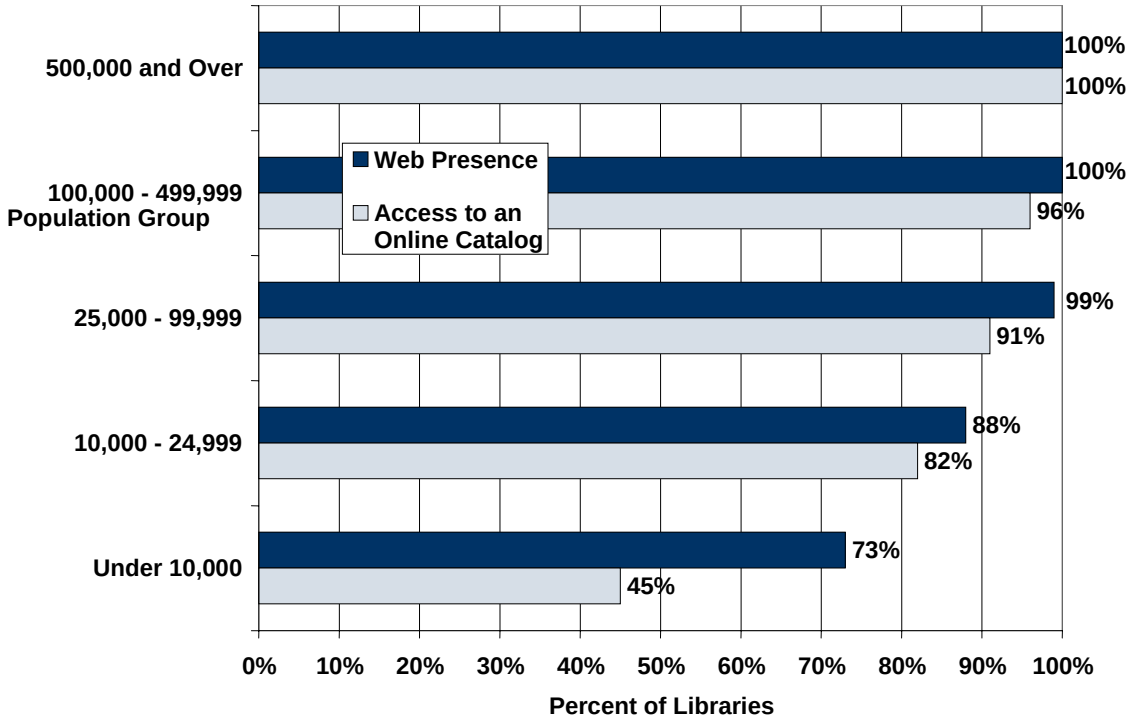
A primary purpose of the study was to examine a sample of public library websites in the United States to determine the prevalence of specific web technologies and the characteristics of the public libraries that were deemed to be “Early Adopters” of these technologies. Representing all population groups, a sample of 483 public libraries was randomly drawn. The following section details results for this sample.

Landscape of Library 2.0 - by size of Service Population

The first piece of this section will examine the rate of adoption of various web technologies on the websites of public libraries in the nation. Findings are related based on library legal service population.

Online Catalog and Library Card

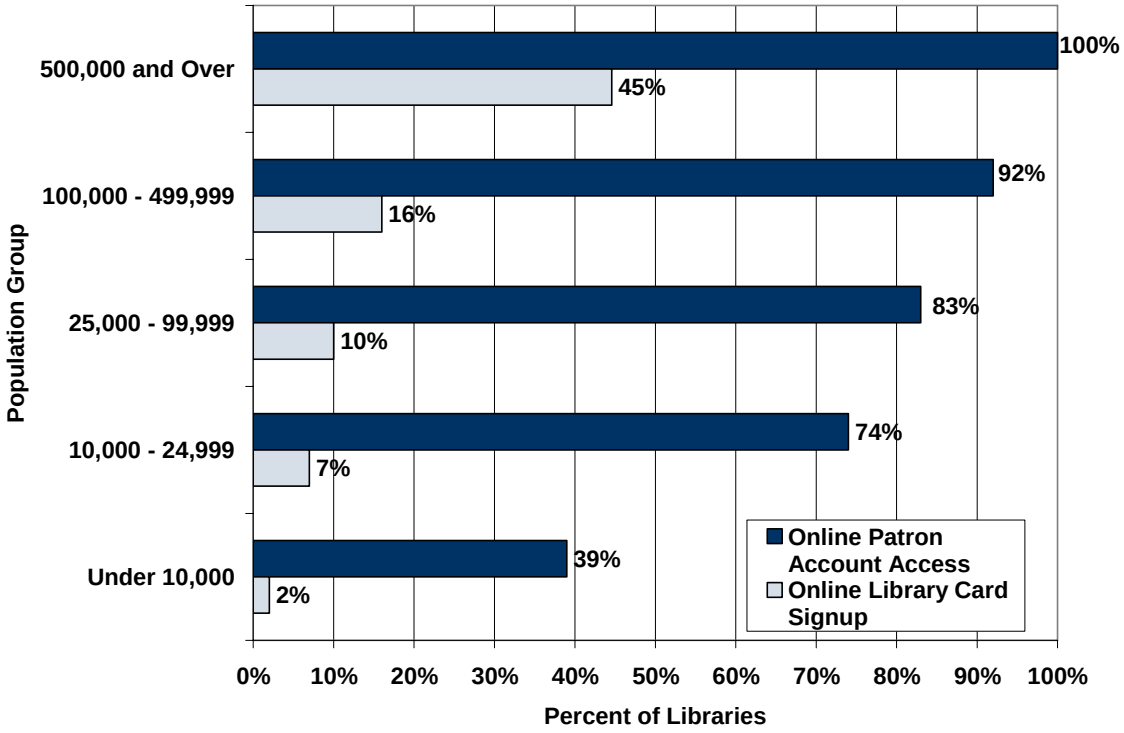
Chart 1: Percentage of U.S. Libraries with a Web Presence and Online Catalog, by Population Group



As would be expected, a presence on the web – via a specific library web site, or as a part of a larger governmental web site – and beyond that, the existence of an online catalog, was at a near ubiquitous level in public libraries in the United States of a certain size (see Chart 1). Every library that served at least 500,000 people had both an online presence and catalog. Additionally, an online presence was found for 199 out of the 200 libraries in the sample that

served between 25,000 and 499,999 people, and over 90 percent of libraries serving over 25,000 provided access to an online catalog. However, this ubiquity did not yet extend completely to public libraries serving smaller populations. Prevalence of an online catalog dropped sharply to 82 percent for libraries serving fewer than 25,000 people, and even more precipitously for libraries serving fewer than 10,000. Fewer than half of the smallest libraries in the sample provided access to an online catalog, and less than three out of four had an online presence at all that could be found. This is a significant finding, considering that nearly three out of five (59%) public libraries in the United States served fewer than 10,000 people.

Chart 2: Percentage of U.S. Libraries with Online Patron Account Access and Library Card Signup, by Population Group

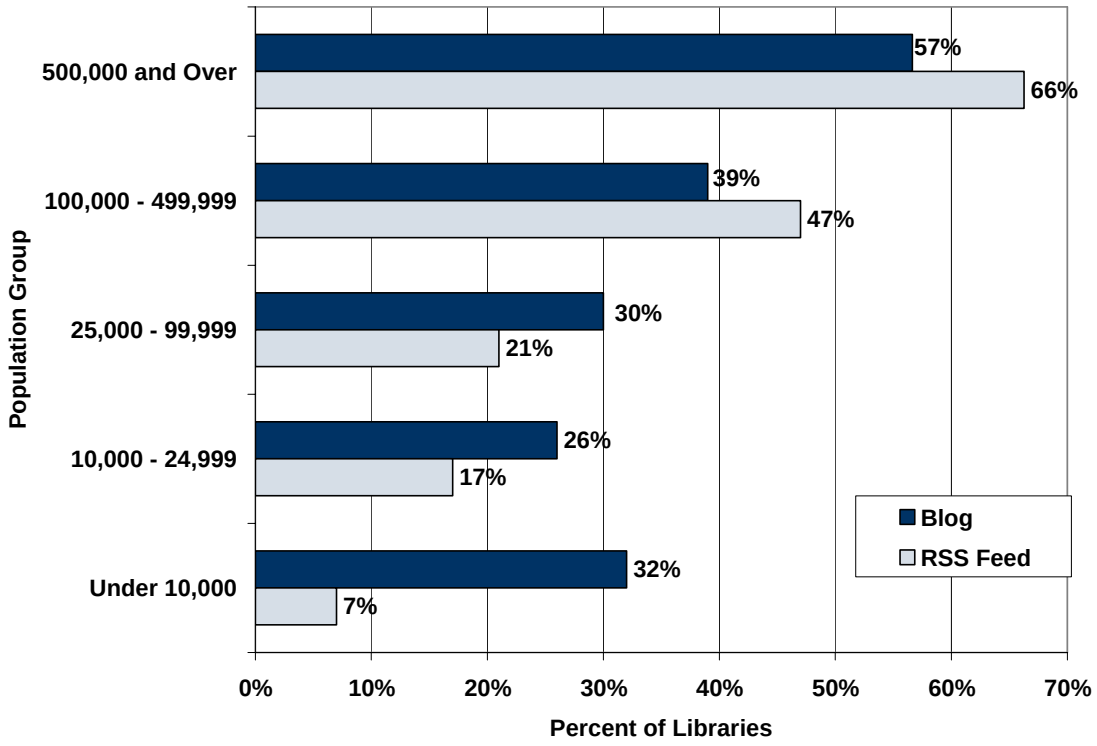


To a lesser extent, providing access to a patron's account online seemed to be building. Again, the ability to access patron accounts was found for all libraries serving at least 500,000 people (see Chart 2) and about three-fourths of all libraries serving over 10,000 provided this feature. Notably, there was another large drop off in the offering of this for the smallest libraries, as fewer than two in five libraries serving fewer than 10,000 patrons provided online patron account access.

However, the capability to sign up for a library card online was still relatively rare. Many libraries in the sample provided instructions on their web sites for getting a library card, but most required that the individual physically go to a library to receive a card. Fewer than half of the largest libraries even offered this service and fewer than one in ten of the libraries in that served under 100,000 people allowed potential patrons to sign up for a card online.

Blogs and RSS Feeds

Chart 3: Percentage of U.S. Libraries with Blogs and RSS Feeds, by Population Group

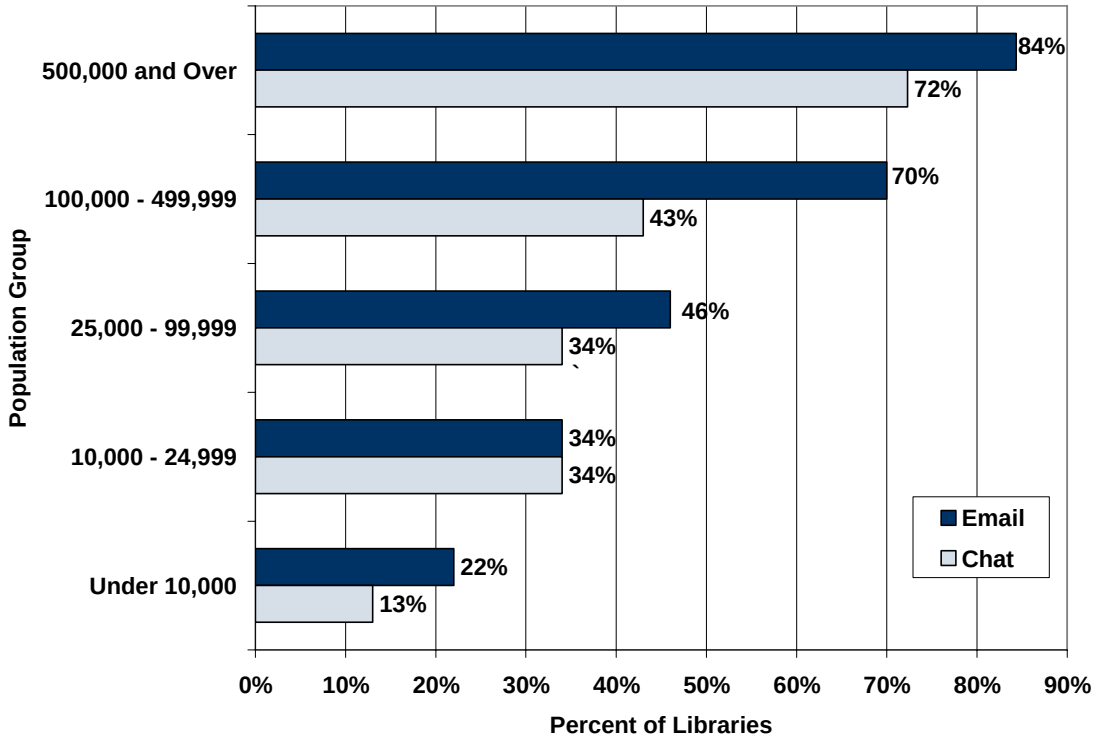


One of the most basic aspects of Library 2.0 is the weblog, or blog, and indeed it was the most commonly-used Web 2.0 technology found on public library web sites. This could be because blogs are relatively easy to implement and there are a number of free online services that allow for quick setup of personal or organizational blogs. Researchers also searched for RSS feeds, which could be utilized in a variety of ways, including as a means to subscribe to blog posts. Libraries also used RSS feeds for services such as notifying patrons of new books available in the library.

Blogs (57%) and RSS feeds (66%) were found on the web sites of over half of the largest public libraries in the United States (see Chart 3). The percentage for both of these technologies dropped below fifty percent for the next largest group of libraries, where two out of five libraries had blogs (39%), and just under half (47%) provided RSS feeds for their blog and/or something else. At least one in four public libraries from each population group had the presence of a blog on their web sites, but the existence of RSS feeds dropped precipitously as the size of the population served got smaller, with fewer than one in ten (7%) of the smallest libraries providing RSS feeds.

Virtual Reference

Chart 4: Percentage of U.S. Libraries with Email and Chat Reference, by Population Group



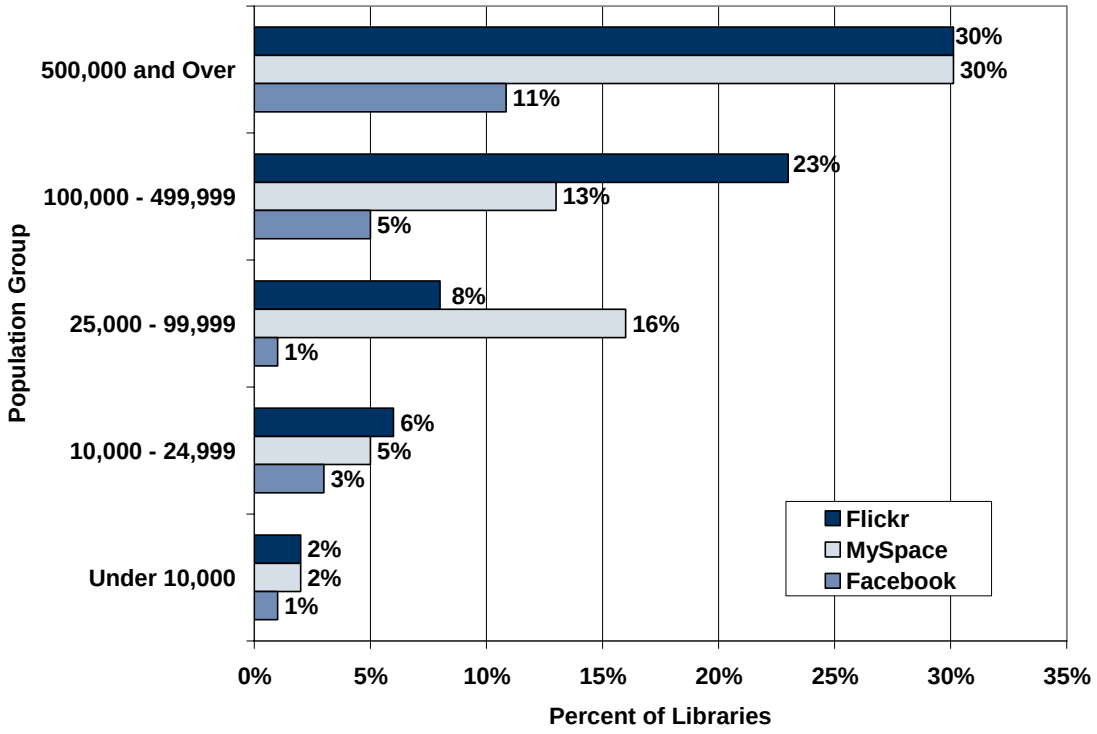
Virtual reference services were a vital part of public libraries efforts to reach out to their patrons using Web 2.0 technology, as they provided a way for patrons to personally interact with staff members from a distance. Although e-mail does not often fall under the definition of Web 2.0, e-mail reference was included in this study because libraries were still using this method frequently to allow patrons to contact them and it was a manner of using the web as a tool to allow greater communication with patrons. Chat reference is the next step in the evolution of virtual reference services, as it provided near immediate interaction between the librarian and patron, and often included features such as co-browsing. Again, the largest libraries led the way in prevalence of both virtual reference offerings, with more than five out of every six (84%) providing email reference via their web sites, and nearly three-fourths (72%) providing a form of chat reference (see

Chart 4). Once libraries dropped below the 500,000 served level, however, they were much less likely to offer chat reference. Fewer than half (43%) of libraries serving between 100,000 and 499,999 in the study provided chat reference, and only about one in three (34%) libraries serving between 10,000 and 99,999 people provided it. For libraries serving fewer than 100,000

people, e-mail reference was not much more prevalent, as fewer than half of libraries in each of the lower population groups provided this service.

Social Networking Sites

Chart 5: Percentage of U.S. Libraries with a Presence on Selected Social Networking Sites, by Population Group



Social networking sites are one of the main aspects of Web 2.0, as they provide a means of interacting with others in ways that often combine multiple technologies including blog posts and video and file sharing. The number of social networks available to Internet users is growing by the day, which made choosing a few to focus on for this study an important but difficult process. In the end, judging primarily from the literature available about Library 2.0, this study included Flickr, MySpace, and Facebook, as those seemed to be the most popular services for libraries to use. By the time of study publication, there could well be other, more relevant, social networking tools for libraries. This fact underscores the evolving nature of Library 2.0.

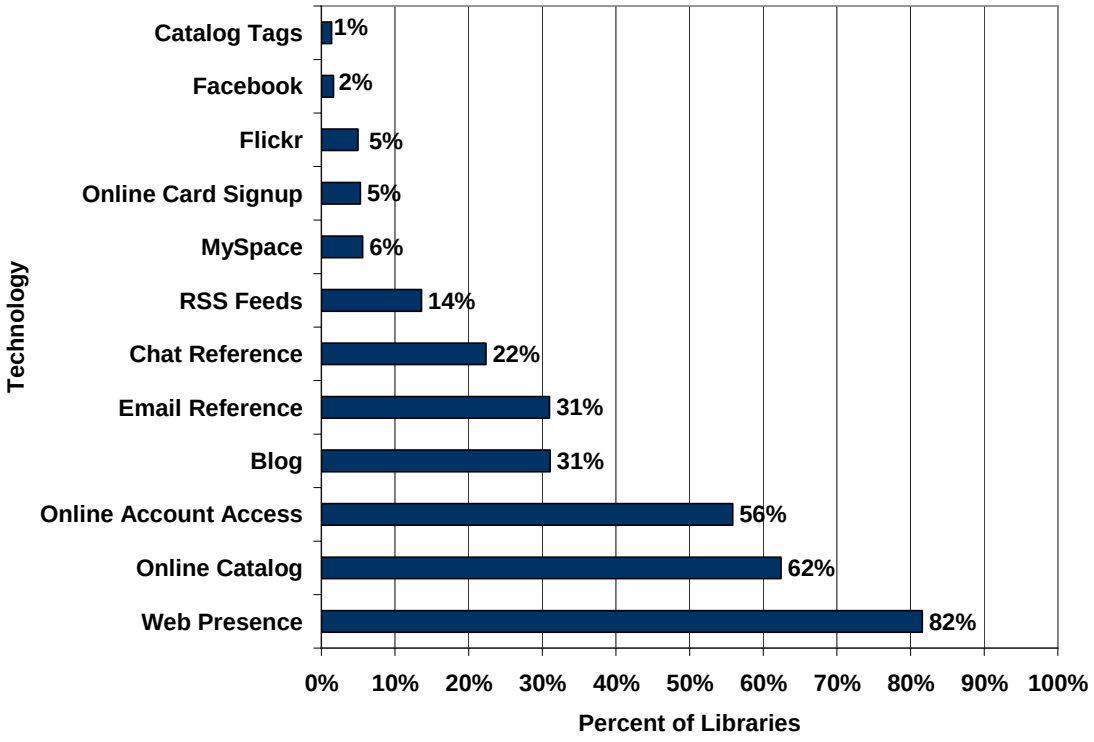
That said, a large majority of libraries in the United States had not taken up presence on even these most popular social networking sites.(see Chart 5). For the group most likely to be proactive in adopting Web 2.0 technologies – libraries serving at least 500,000 people – less than one-third (30%) had a presence on Flickr or MySpace, and barely one in ten (11%) took up residence on Facebook. Of these three, Flickr was the service that appeared to attract the most libraries, and even it did not draw one in four libraries serving between 100,000 and 499,999,

and fewer than one in ten libraries serving under 100,000 maintained a presence there. For the libraries in this study serving fewer than 500,000, Facebook was nearly non-existent.

Extrapolated Results for All U.S. Public Libraries

From the stratified sample, extrapolations[2] to the United States as a whole can be made. The first extrapolation is an estimate of the number of libraries in the nation that provided each type of Web 2.0 technology.

Chart 6: Estimated Percentage of U.S. Libraries Using Various Web 2.0 Technologies



Looking at the percentage of libraries that provided Web 2.0 technologies of any kind suggests that a movement toward these tools was still in its very early stages (see Chart 6). Based on the sample, just over four out of five libraries (82%) even had a web presence, much less a more developed online experience to offer their users. Less than two-thirds provided access to their

[2] A note about these extrapolations: There is good reason to believe that our sample is representative. For each population group, we ran t-tests to compare the libraries in our sample with their peers for all statistical ratios provided by the Institute for Museum and Library Services. There were no statistically significant differences between the libraries in our sample and those not sampled for any statistic, in any population group. That said, for each population group serving fewer than 500,000 people, our sample size of 100 provided a confidence interval of around nine. The sample size grew to 1,231 libraries when the confidence interval was dropped to 5% and was not feasible for this study.

library catalog via the Internet, and even fewer allowed their patrons online access to their account. Less than one-third gave their patrons the option of emailing reference questions to the library.

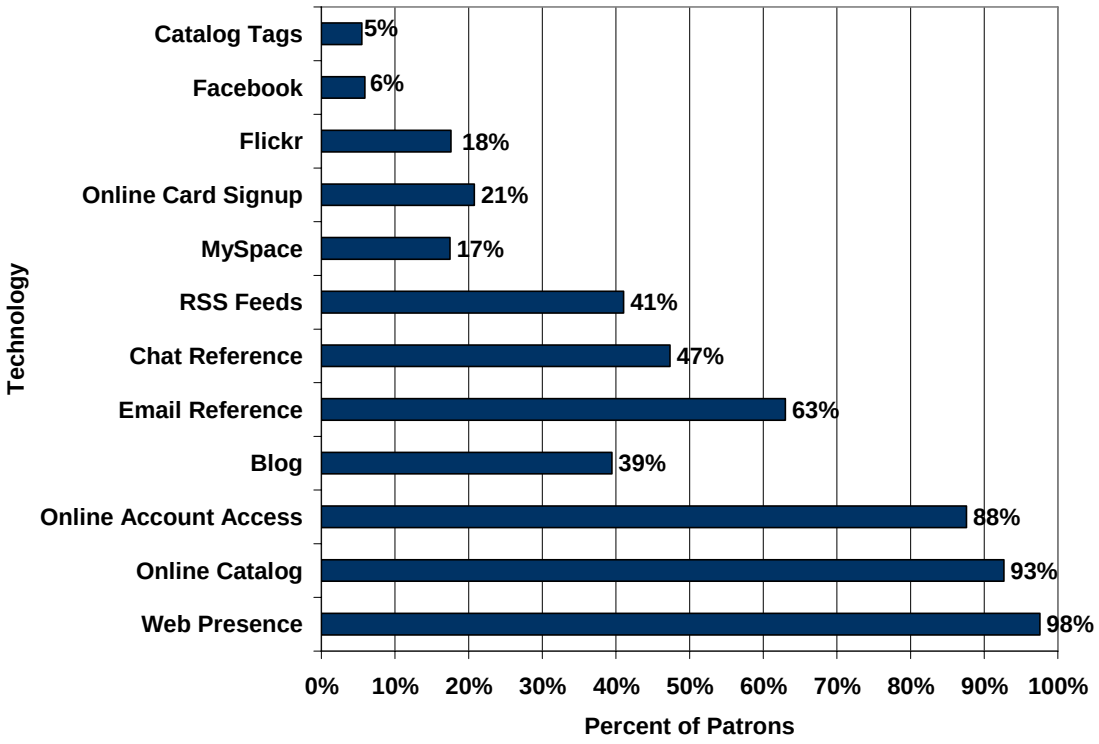
As for true Web 2.0 technologies, it appears that none of the tools studied appeared on more than one out of every three public library web sites, and only blogs (31%) had made it to more than one in four. Virtual reference was the next most popular 2.0 service, with a presence on the web sites of an estimated 22 percent of public libraries. No more than one in twenty libraries maintained a presence on the social networking sites that were examined, and the same percentage allowed potential patrons to register for a library card online.

Again, these are estimates of the number of libraries that provide each technology, and are heavily influenced by the fact that nearly sixty percent of public libraries in the United States in 2005 served fewer than 10,000 people. In fact, the 83 libraries that served at least 500,000 people served almost thirty percent of the population. In other words, nearly a third of the population in the United States was served by just 83 library jurisdictions (see Table 1).

Table 1: Number of People Served by Public Libraries in the United States, by Population Range

Population Range	Number of Libraries	Range Group Population	Percent of Total Population
Under 10,000	5,432	18,912,834	7%
10,000 - 24,999	1,762	28,212,558	10%
25,000 - 99,999	1,492	71,757,775	25%
100,000 - 499,999	429	86,076,568	30%
500,000 +	83	85,230,016	29%
Total	**9,198**	**290,189,751**	**100%**

Chart 7: Estimated Percentage of U.S. Library Patrons Served by Various Web 2.0 Technologies



When looked at in terms of percentage of patrons whose public library provided these services, instead of percentage of library jurisdictions, implementation of Web 2.0 technologies looked a little more mature (see Chart 7). Now we see that an overwhelming majority of people in the United States could find their local public library's presence on the Internet, and over nine out of ten could access their library's catalog online. Nearly two-thirds (63%) of the population could reach their public library reference desk via email.

Of the true Web 2.0 technologies, the sample suggests that chat reference was the most widespread technology in use, with just under half (47%) of public library patrons having access to it. This service is often available through consortia, which can give smaller public libraries an opportunity to participate, and likely contributed to its relatively high reach to library patrons. Around two out of five patrons were served by libraries that have blogs and/or RSS feeds, and about one in five patrons could connect with their libraries via each of the social networking sites studied.

Early Adopters

Some libraries had a more extensive web presence than others, and the second part of the study involved determining the characteristics of these libraries. After visiting the web sites of sample libraries, researchers developed a 29-point scale to determine how far along these public libraries were in implementing web technologies. Each item on the scale was worth one point, with the exception of chat reference and SMS reference, which were each given two

points. This was done primarily because for other types of Library 2.0 service (Blogs, Social Networking, enhanced OPAC), a library could earn multiple points on this scale by having a more developed web site. The study design limited these reference measures to be defined either by their presence or absence. The study author felt them an equally vital piece of Library 2.0 service and deserved a stronger weight. Of course, there are a near infinite number of ways that such a scale could be devised. For this study the focus was on this simple method, rather than attempting something more complex, and possibly convoluted. The following table enumerates the items of the scale.

Table 2: Early Adopter Scale Items

Scale Item/Category	**Definition**
Online Catalog (OPAC)	
User Comments	The OPAC allowed users to leave comments on specific items
User Ratings	The OPAC allowed users to rate items
Recommendations	The OPAC provided dynamic recommendations based on the users search
Tags	The OPAC allows users to look for items based on tags
Blogs/RSS	
Blog Presence	Library web site has a blog
Recent Post	Library blog has been posted to within the previous two weeks
Blog Comments	At least one comment has been left on the library blog
Recent Comments	At least one comment has been left in the last two weeks
Presence of RSS	RSS feeds were available somewhere on library web site
Virtual Reference	
Email Reference	Library provided email reference
Chat Reference	Library provided chat reference
SMS Reference	Library provided text message reference
Social Networking	
MySpace Presence	Library presence on MySpace
MySpace Catalog	Library catalog search embedded in MySpace

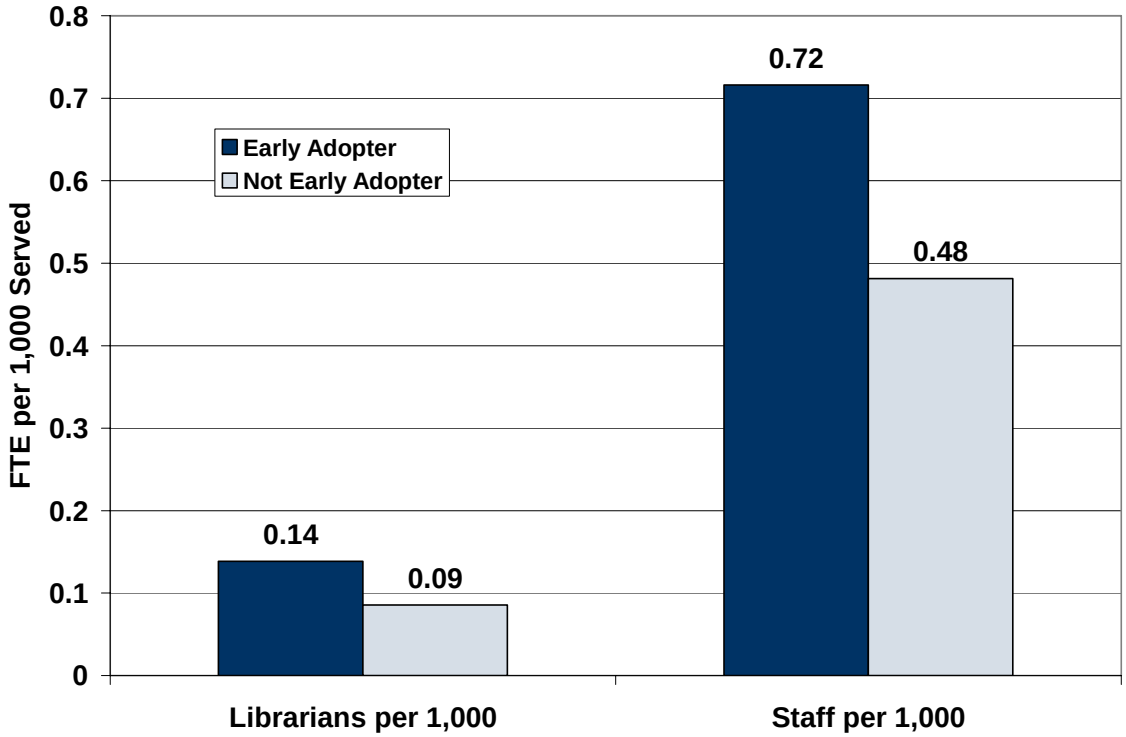
MySpace IM Reference	Chat reference embedded in MySpace
MySpace Comments	More than 10 comments left on MySpace page
Facebook Presence	Library presence on Facebook
Facebook Catalog	Library catalog search embedded in Facebook
Facebook IM Reference	Chat reference embedded in Facebook
Facebook Fans	Over 10 fans in Facebook
Flickr Presence	Library presence on Flickr
Other	
Online Card Signup	Users allowed to sign up for a library card online
Public Wiki	At least one Wiki set up that public can contribute to
Podcast Use	Use podcasts on library site
Podcast Facilitation	Library facilitates the production of podcasts by its users
Vodcast Use	Library uses video podcasting on site
Vodcast Facilitation	Library facilitates the production of video podcasts by its users

Very few libraries provided many of these technologies. In fact, only one public library in our study, Hennepin County Library (http://hclib.org), with a scale score of eighteen, recorded more than half of these items. No other library scored higher than fourteen on our scale.

After giving each library in the study a scale score, the 80th percentile scale score for each population group was identified. Libraries scoring at or above the eightieth percentile (i.e., the top twenty percent) were labeled as “Early Adopters” for purposes of the study. These libraries were then compared to the rest of the libraries in the study, using traditional statistics as reported nationally by the Institute for Museum and Library Services (IMLS). Libraries that were classified as Early Adopters had significantly higher per capita measures than their peers for nearly every ratio reported by IMLS.

Inputs

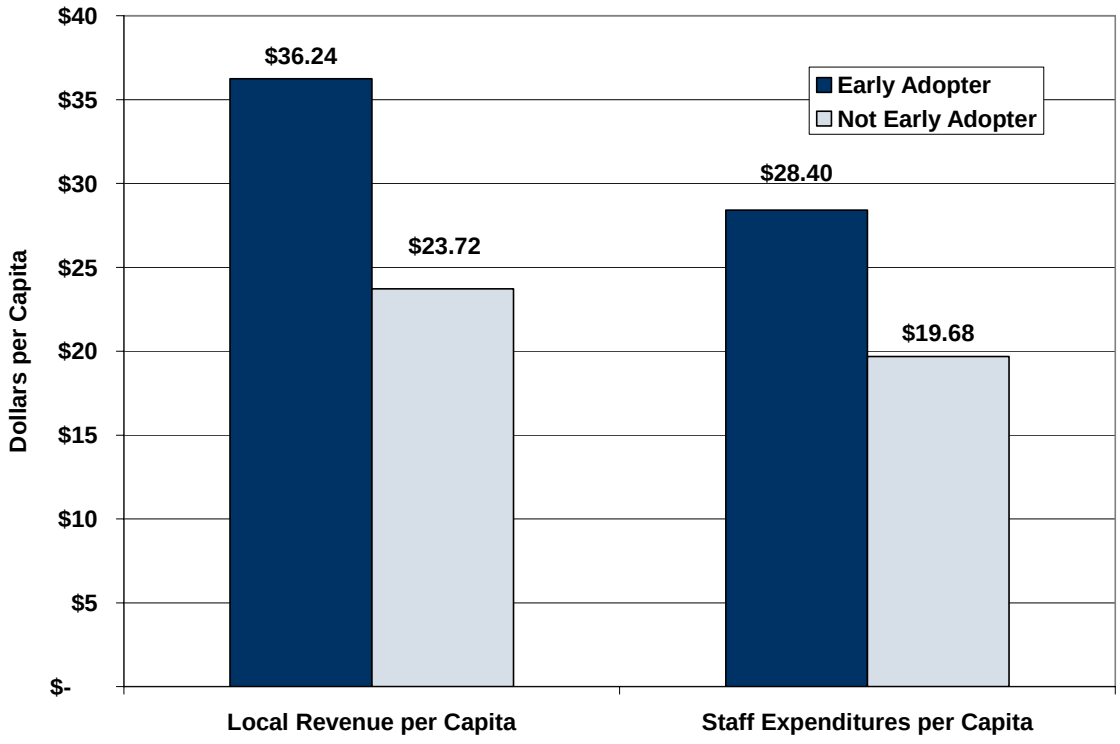
Chart 8: U.S. Public Libraries: Average Library Staffing Levels, by Early Adoption Status



Libraries that adopted web technologies had significantly more staffing than their non-technologically inclined counterparts (see

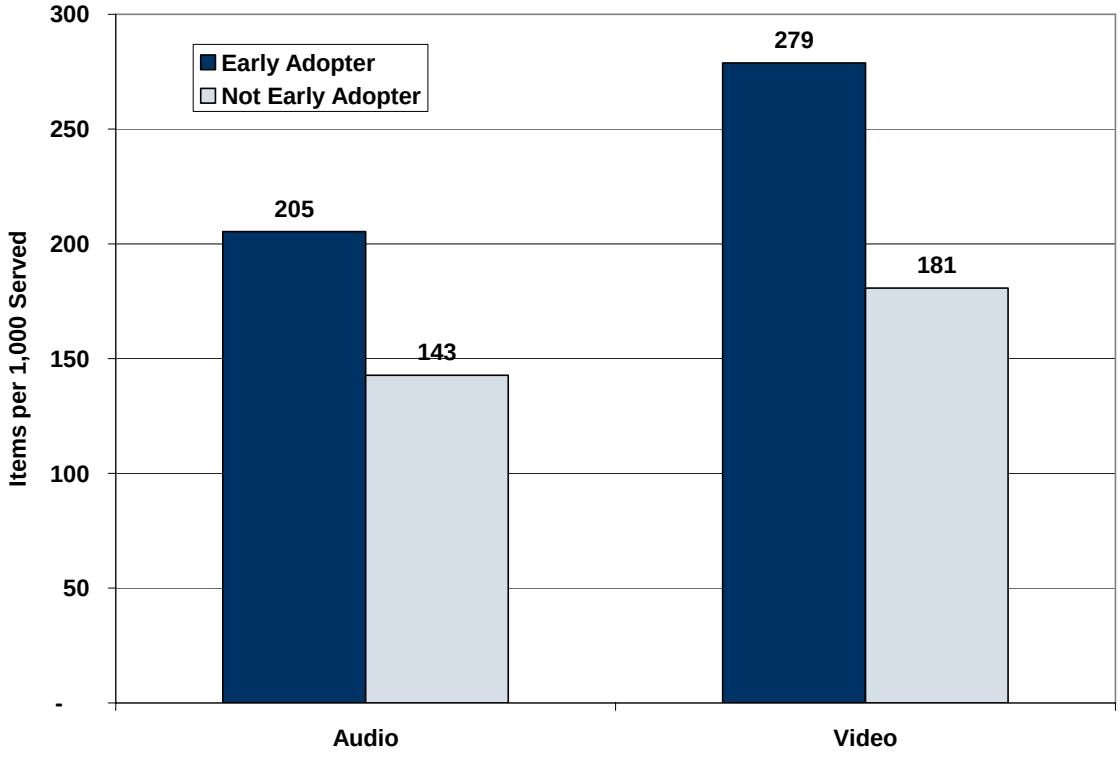
Chart 8). Early Adopters had fifty percent more librarians and total staff than the other libraries in the study. That they had more staffing is not a large surprise – a decent amount of staff time is certainly necessary for implementing most of these technologies. However, a fifty percent increase in staffing is substantial – it means that early adopting libraries had three staff members to every two for their peers. This ratio held true for librarians as well.

Chart 9: U.S. Public Libraries: Average Library Local Revenue and Staff Expenditures, by Early Adoption Status



In terms of financial inputs, Early Adopter libraries again fared much better than their counterparts (see Chart 9). Early Adopter libraries tended to receive much more local financial support, bringing in over 50 percent more revenue on average than their peers. As expected, average staff expenditures per capita mirrored FTE staff, with Early Adopters spending much more on their staff than their counterparts. Again, implementing web technologies is not free – even when the services themselves are free there is still a need to account for the value of staff time. As with staffing, the surprise lies not in the fact that Early Adopter libraries were better funded than those who have not implemented web technologies, but in the size of the gap.

Chart 10: U.S. Public Libraries: Library Audio/Visual Collections, by Early Adoption Status



Between 1995 and 2005, public libraries in the United States saw dramatic increases in per capita audio and video materials.[3] Audio collections increased by 48 percent over that decade, while video material collections skyrocketed, increasing by a factor of over 200 percent – the number of video materials held per capita by U.S. public libraries tripled over the course of the decade. Over the same time period, print materials held constant at 2.8 items per capita, on average.

In addition to leading the way in terms of utilizing web technologies, Early Adopters also appeared to be at the front of the movement toward offering more non-print materials to their patrons (see Chart 10). Early Adopters provided 43% more audio (205 vs. 143) and 54% more video (279 vs. 181) materials per 1,000 served than other libraries. It would seem that the same libraries that are adopting these collection changes are also driving changes in Web technology use.

Conversely, there was not a statistically significant difference between libraries that we identified as web savvy and others in terms of print volumes per capita. Interestingly, the only other

[3] For national totals, see "Public Libraries in the United States" reports from the Institute of Library and Museum Services at http://harvester.census.gov/imls/pubs/pls/index.asp.

statistical ratio provided by IMLS where Early Adopters did not significantly outperform their counterparts was for Public Access Computers per 1,000 served. Early Adopter libraries did have a higher number of patron computers on average – 1.46 per 1,000 served vs. 1.00 – but this difference was not statistically significant (see Table 3).

Table 3: U.S. Public Libraries: Input Ratios for Selected Statistics, by Early Adoption Status

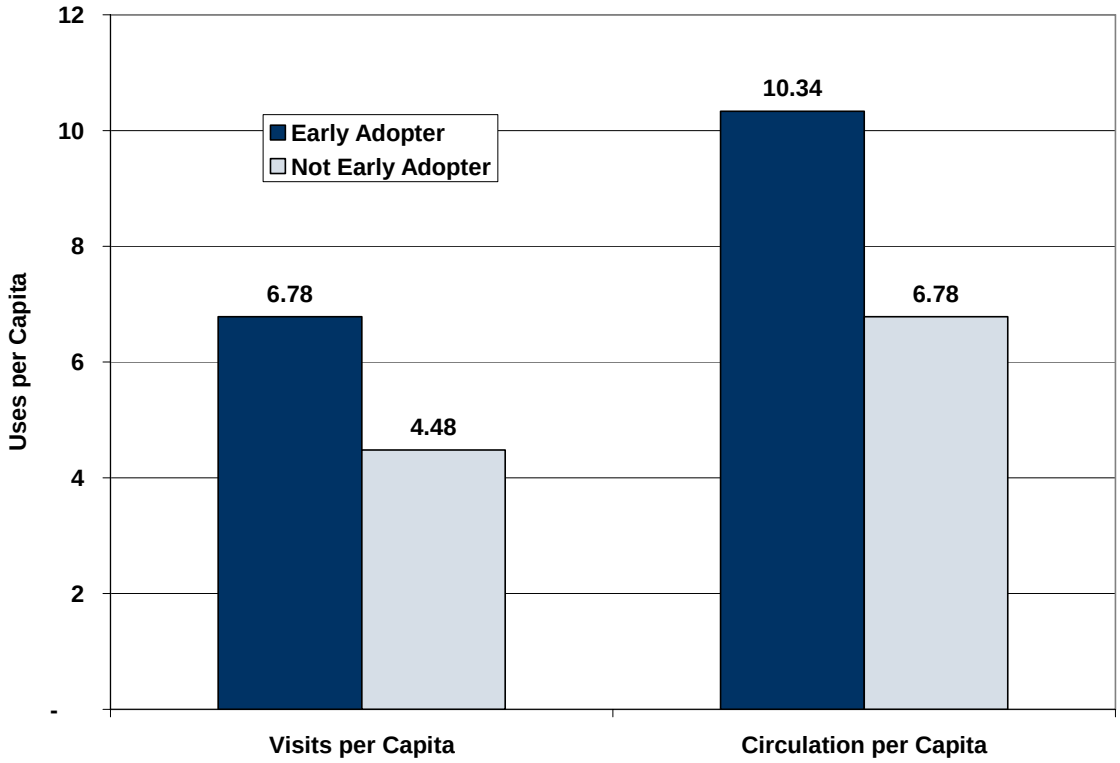
Statistic	Early Adopter	Not Early Adopter	Percent Difference
Print Volumes per Capita	4.35	4.08	7%
Computers per 1,000 Served	1.46	1.00	46%
Collection Expenditures per Capita	$5.95	$3.80	57%
Electronic Expenditures per Capita	$0.57	$0.29	97%
Subscriptions per 1,000 Served	10.77	7.67	40%

Note: Shaded rows represent lack of statistical significance.

Not surprisingly, Early Adopters of technology spent almost twice as much per capita on Electronic Expenditures as their peers. They also had significantly higher collection expenditures and numbers of print subscriptions.

Outputs

Chart 11: U.S. Public Libraries: Visits and Circulation, by Early Adoption Status



Public libraries identified as Early Adopters in the study had relatively high inputs in a number of important statistical areas. How did this translate into traditional services to the public? For two ratios that are often key factors in defining the success of a public library, Early Adopters had much higher usage rates (see Chart 11). They had over fifty percent higher rates of visits per capita (6.78 vs. 4.48) and circulation per capita (10.34 vs. 6.78).

In addition to these two indicators of patron usage, Early Adopters realized significantly higher output ratios for every measure provided by IMLS. Patrons used these libraries more than fifty percent more often in terms of program attendance, children's circulation, and electronic users. Web savvy libraries also saw more traffic by way of reference questions asked and children's program attendance. Table 4 illustrates these differences.

Table 4: U.S. Public Libraries: Output Ratios for Selected Statistics, by Early Adoption Status

Statistic	Early Adopter	Not Early Adopter	Percent Higher
Reference Questions per Capita	1.24	0.88	41%
Program Attendance per 1,000 Served	410	274	50%
Children's Program Attendance per 1,000 Served	282	213	32%
Children's Circulation per Capita	3.73	2.30	62%
Electronic Users per Capita	1.79	1.10	63%

Specific Technologies and Library Ratios

In addition, researchers compared the "haves" and "have nots" for specific technologies, comparing average statistical ratios for public libraries that offered a specific web technology with those that did not. For four of these technologies, the "haves" had higher ratios for at least nine of the sixteen statistical ratios where we found statistically significant differences between Early Adopters and others. Among the findings:

- Two of these, Online Card Signup and Email Reference, are not Web 2.0 technologies. Still their presence was highly correlated with higher ratios for eleven and ten of the statistical ratios we looked at, respectively.
- The technology that matched significantly higher levels for the most ratios was Chat Reference, which correlated with twelve of the sixteen ratios.
- Libraries that had recently posted to their blog (within two weeks of our check date) performed higher in nine of the sixteen ratios.

Early Adopters Conclusion

Given the discrepancy in data years – IMLS data was collected for 2005, and the observational portion of this study was conducted in spring 2008 – the tendencies described here point to the characteristics of libraries that appear to be innovators in the realm of Library 2.0. Only future study – specifically, comparing the changes in these ratios for libraries that have adopted Web 2.0 technologies with changes experienced by their peers – can address the question of whether the adoption of these technologies is driving users to more traditional library services. When 2008 national public library data are available, likely in early 2010, this study will be updated to incorporate this concept.

Still, one important thing can be deduced from this portion study. Public libraries that in 2005 performed highly on traditional statistical measures of success tended to be embracing web technologies by 2008. At this point it cannot be determined whether getting involved with Library 2.0 was leading to even more success, but the leading public libraries in the United States were also the innovators in this area, as measured by traditional input and output measures.

Colorado Results

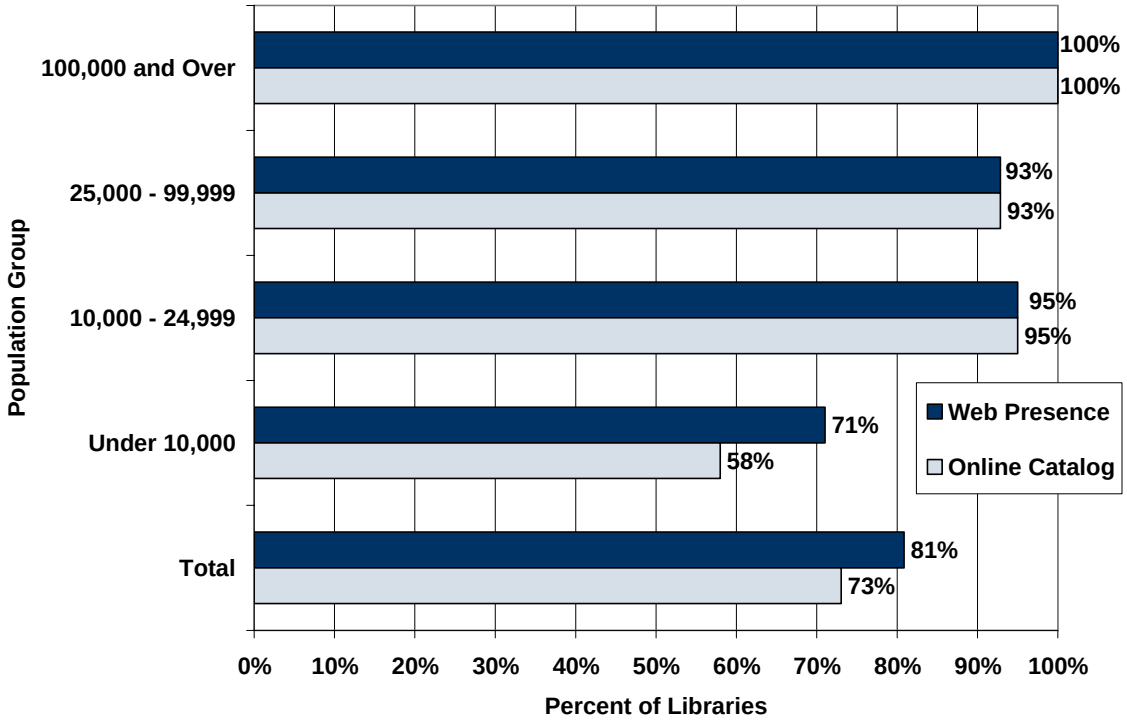
In addition to the 483 libraries that comprised the national sample, the study includes an examination of the web sites of all 115 public libraries in Colorado. This section reports the technologies that were found on their web sites and how Colorado compares to the nation in terms of adoption of web technologies.

Landscape of Library 2.0

As with discussion of national results, the Colorado-specific discussion will first examine the rate of adoption of various web technologies on the websites of public libraries in the state. Again, findings are discussed based on library legal service population.

Online Catalog and Library Card

Chart 12: Percentage of Colorado Libraries with a Web Presence and Online Catalog, by Population Group

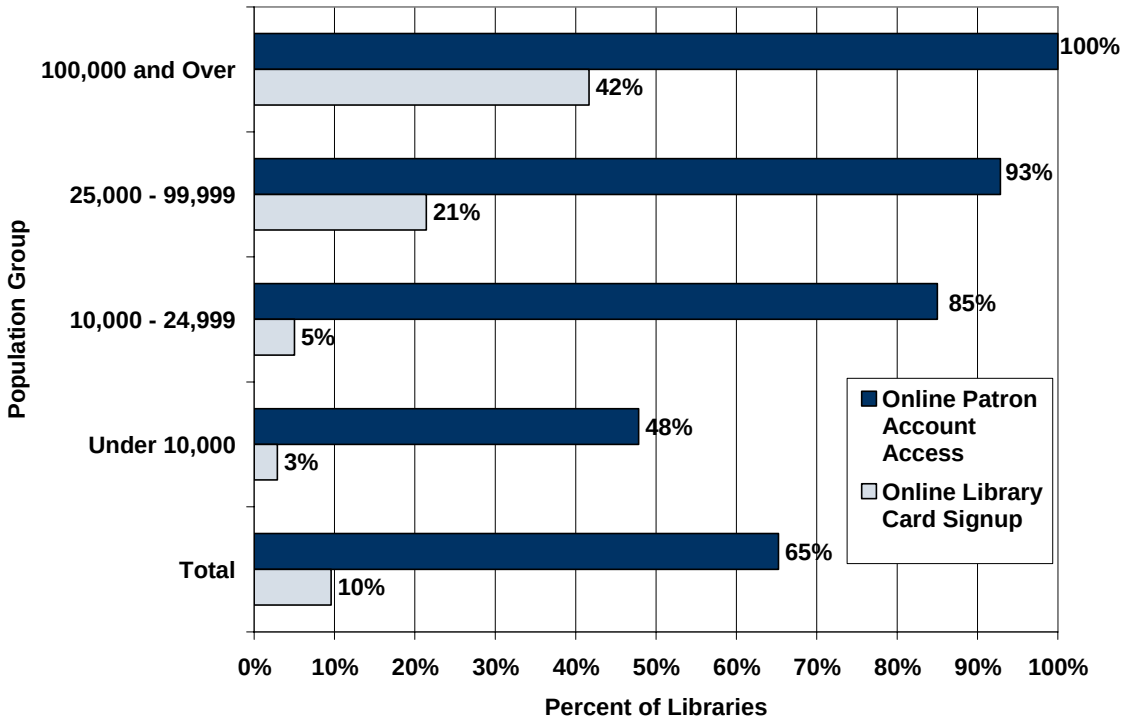


Similar to results found for the national sample, most of Colorado's public libraries had a web presence, and the majority provided access to their online catalog on their web sites (see Chart 12). Every library serving at least 100,000 Coloradans provided their communities with online catalogs accessible via their web sites. Web and online catalog presence was found for all but a few libraries serving at least 10,000 people in the state, again in line with results from the national sample. For Colorado's smallest libraries, the number fell, but nearly three out of four libraries serving fewer than 10,000 people had a web presence. This is likely in part due to

prevalence of small Colorado libraries using the Plinkit[4] service to help create web sites for their patrons. The percentage of these small libraries that offered access to an online catalog outpaced the national sample 58 to 45 percent.

As with the nation, the preponderance of libraries in Colorado (60%) served fewer than 10,000 people, and these smaller libraries had a significant downward impact on statewide numbers. Overall, over four out of five (81%) Colorado libraries had a web presence, and nearly three out of four (73%) provided access to an online catalog.

Chart 13: Percentage of Colorado Libraries with Online Patron Account Access and Library Card Signup, by Population Group



Like public libraries throughout the United States, those in Colorado serving over 10,000 people were moving toward ubiquity in offering patron account access through their web sites. Again, every library serving at least 100,000 people in the state provided such access, and only a small percentage serving more than 10,000 did not provide it. The penetration of this service for mid-sized libraries in Colorado exceeded the results for the national sample by at least ten percentage points for both libraries serving 25,000–99,999 (93% vs. 83%) and 10,000–24,999 (85% vs. 74%). Here too there was a drop in service level for the smallest libraries, with just under half (48%) of Colorado's libraries serving under 10,000 people providing this service.

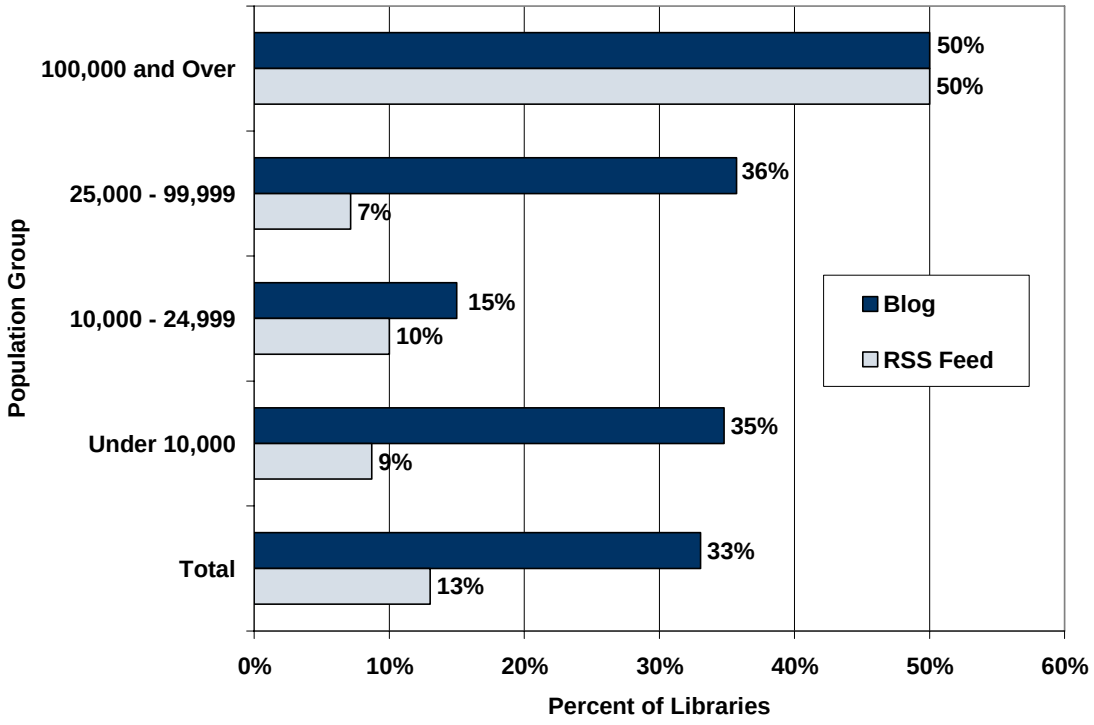
[4] For more information on Plinkit, see http://www.plinkit.org/

However, this also compares quite favorably to the 38% penetration found for the national sample for similarly sized libraries.

Colorado's public libraries also essentially mirrored the nation in terms of allowing users to sign up for a library card using their web sites. As seen nationally, the ability to sign up for a library card online was still far from common in Colorado's public libraries, but again Colorado is ahead of the nation in terms of saturation. Close to half (42%) of Colorado's public libraries serving over 100,000 people offered library card signup, compared with an estimated 21% of the nation's. For libraries serving between 25,000 and 99,999, Colorado's rate of providing online card signup was twice as high as the national sample (21% vs. 10%).

Blogs and RSS Feeds

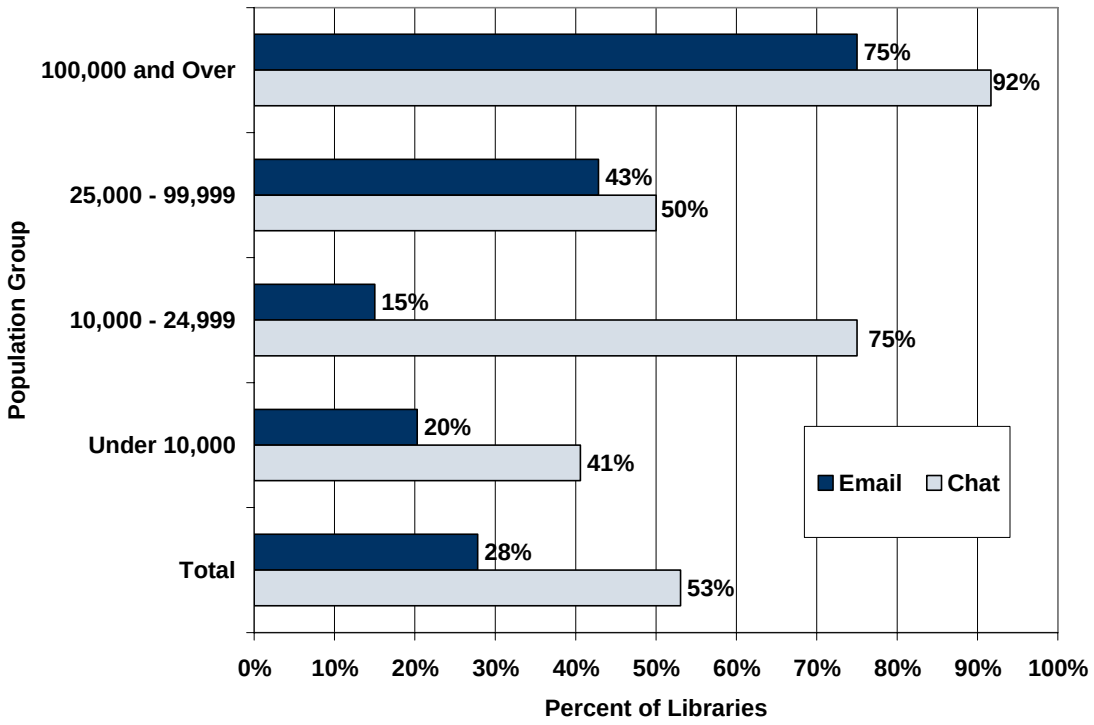
Chart 14: Percentage of Colorado Libraries with Blogs and RSS Feeds, by Population Group



Like the national sample, about one in three of Colorado's public libraries provided the most basic of Web 2.0 technologies – the blog. RSS feeds often, but not always, function in tandem with blog technology. Again, Colorado's public libraries mimicked the national sample, with about one in eight libraries providing such a feed. Fully half of Colorado's largest libraries had a blog, and half provided an RSS feed. For smaller libraries, the prevalence of these types of technologies in Colorado's public libraries reflected the results of the national sample – including the somewhat surprising finding that the smallest libraries – those serving fewer than 10,000 – were more likely to have a blog than those slightly larger – serving 10,000-24,999.

Virtual Reference

Chart 15: Percentage of Colorado Libraries with Email and Chat Reference, by Population Group

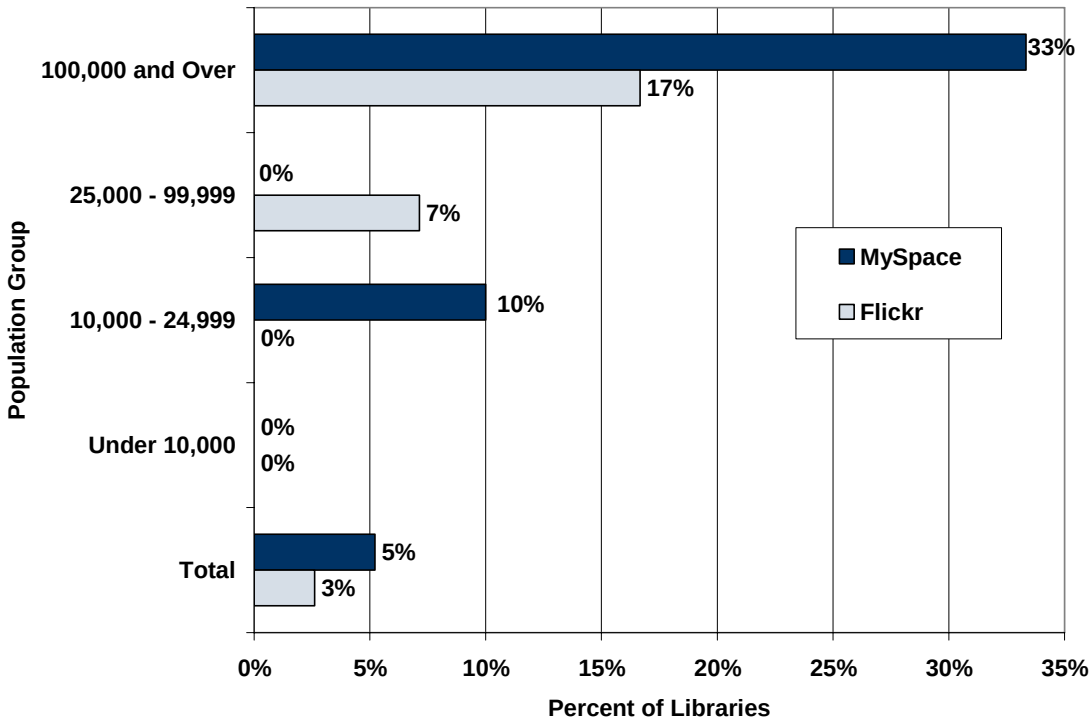


Of the various services addressed by the study, there was only one section where public libraries in Colorado differed greatly from those in the national sample – virtual reference services. Libraries in the national sample demonstrated a greater likelihood to offer email reference services as compared to chat reference service. Among public libraries of all sizes in Colorado, this trend was reversed, almost definitely due to the availability of the statewide virtual reference service, AskColorado. While some of the state's public libraries use AskColorado in addition to another virtual reference service, only two Colorado public libraries were identified that provided chat reference but did not use AskColorado. For chat reference, public libraries serving each population group in Colorado were well ahead of the nation. In all, 53% of Colorado's public libraries provided a chat reference option, well over twice the rate of the estimated 22% based on the national sample. This cooperative model of service benefits a great number of Coloradans, especially those in smaller and middle sized libraries.

Like the national sample, around three in ten (28% in CO, 31% in US sample) of Colorado's public libraries provided email reference service, with a strong majority of the largest libraries providing this service, and dwindling percentages as the library's service area population declined.

Social Networking

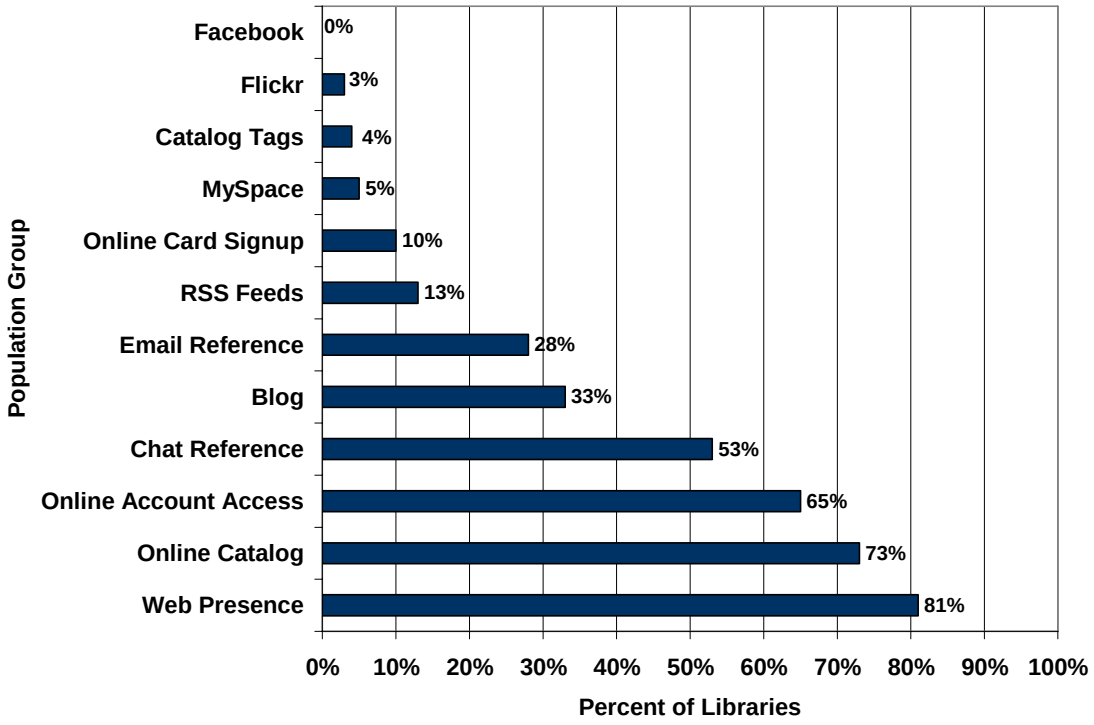
Chart 16: Percentage of Colorado Libraries with a Presence on Selected Social Networking Sites, by Population Group



Like their counterparts in the national sample, as of spring 2008 public libraries in Colorado were unlikely to have a presence on any of the three social networking web sites that were included in the study. Researchers searched for public libraries' presence on social networking sites by searching both the public library's web site and the social networking site. Similar to the findings for the national sample, Colorado public libraries were most likely to have a presence on either MySpace or Flickr. One-third (33%) of the largest public libraries in Colorado had a MySpace page, and about one in six (17%) had a presence in Flickr. Presence on these sites was extremely sporadic for smaller libraries. No Colorado public libraries were found on Facebook, and no libraries serving fewer than 10,000 were found on any of the social networking sites. Please note: it is known that some public libraries have developed presences on these and other social networking sites since the administration of this study.

Colorado: All Libraries

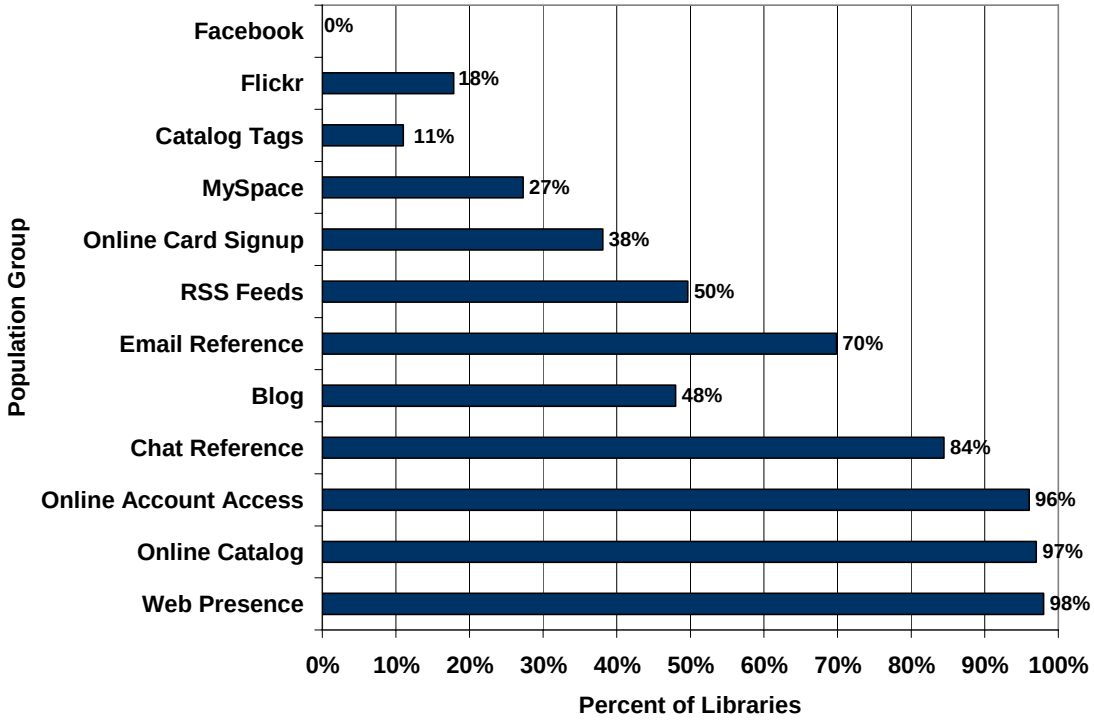
Chart 17: Percentage of Colorado Public Libraries Using Various Web 2.0 Technologies



The above (Chart 17) summarizes the percentage of all Colorado public libraries that were using the various Web 2.0 technologies included in the study. It demonstrates that while very basic web-based services, such as having a web presence and providing access to an online catalog, were nearing ubiquity in Colorado's public libraries, adoption of most true Web 2.0 technologies was still far from common. One in three (33%) Colorado public libraries had a blog, about one in eight (13%) provided RSS feeds, and fewer than one in ten had implemented most other Web 2.0 technologies. As mentioned earlier, the obvious exception was for chat reference – with over half (53%) of Colorado's public libraries providing this, primarily via AskColorado.

Colorado's public libraries are distributed in a manner similar to the nation, with 60 percent of public library jurisdictions serving fewer than 10,000 people, and the numbers of libraries serving population dropping rapidly as the populations rise. The 12 libraries serving populations of at least 100,000 serve nearly three-quarters (74%) of the state's residents, an even larger proportion than at the national level.

Chart 18: Estimated Percentage of Colorado Public Library Patrons Served by Various Web 2.0 Technologies

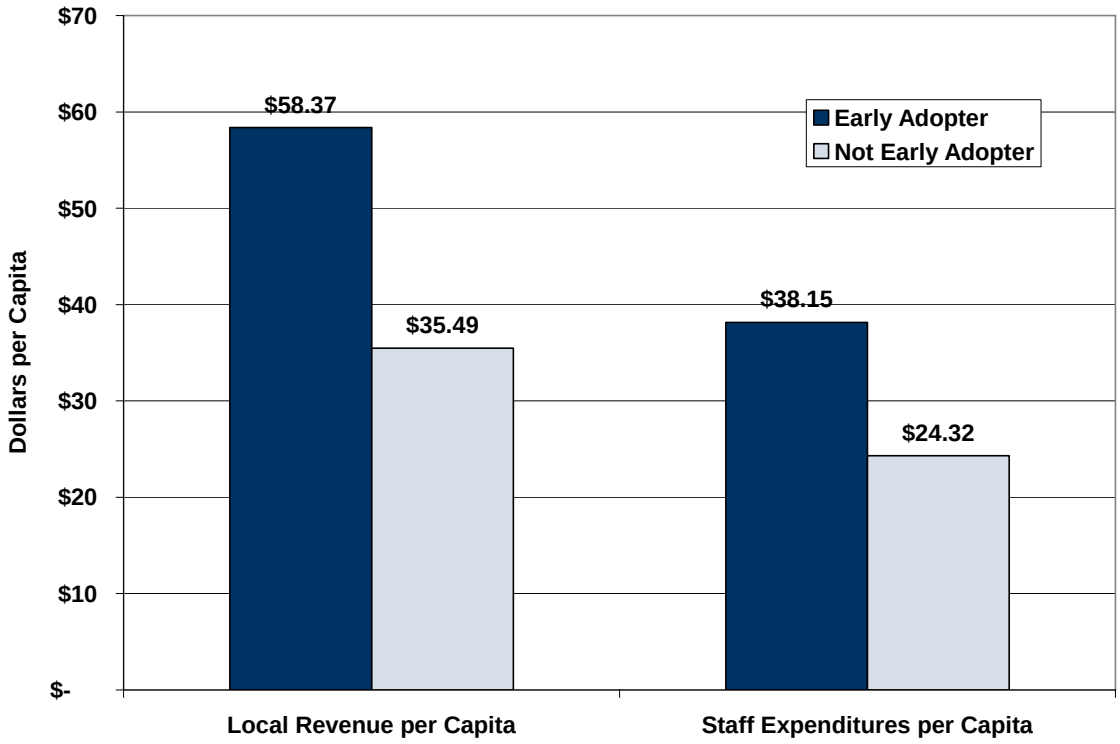


As with the nation, the adoption of Web 2.0 technologies by Colorado's public libraries appeared a little more mature when looked at in terms of percentage of patron's whose public library provided access. Nearly everyone in the state was served by a public library with a web presence that offered an online catalog as well as online access to the patron's account. Strikingly, over five out of every six Coloradans (84%) were served by a library that provided chat reference, nearly doubling the rate of the national estimate (47%).

Early Adopters

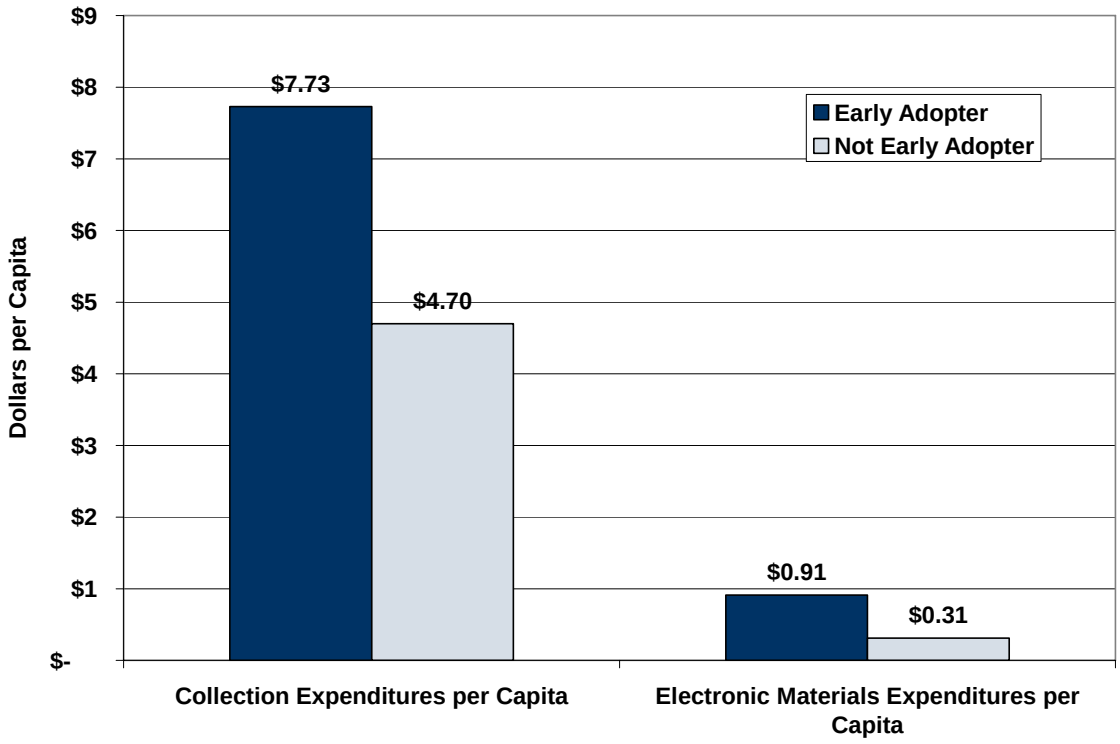
As with the national sample, Colorado's libraries were divided by early adoption status using the same 29-point scale. Again, the 80th percentile scale score was identified for each population group, and libraries scoring at or above the eightieth percentile (i.e., the top twenty percent) were labeled as "Early Adopters." Like the national sample, public libraries in Colorado that were identified as Early Adopters had higher per capita ratios for nearly every input and output measure provided by IMLS. However, the differences were not nearly as great in Colorado as they were nationally. The differences between Early Adopters and other libraries in the state were statistically significant for only four input statistics and no output statistics. All of the measures showing statistical significance were in the areas of funding and expenditures, suggesting that better-funded libraries in Colorado were attempting to implement web technologies more frequently.

Chart 19: Colorado Public Libraries: Average Local Revenue and Staff Expenditures, by Early Adoption Status



Colorado public libraries that were early adopters of web technologies were much better funded than their counterparts in the state (see Chart 19). The average local revenue per capita for early adopters was $58.37, over 64 percent greater than public libraries in the state that were not identified as early adopters. In turn, early adopting libraries spent 57 percent more on staff expenditures than their peers.

Chart 20: Colorado Public Libraries: Average Collection and Electronic Materials Expenditures per Capita, by Early Adoption Status



The trend for early adopting libraries to have higher expenditures continued in regards to general collection expenditures, as well as expenditures on electronic materials. Public libraries in Colorado that had adopted more web technologies spent an average of $7.73 per capita on their collections, compared with only $4.70 per capita for libraries that had adopted fewer (see Chart 20), if any, of the technologies that were studied. Additionally, and unsurprisingly, early adopting libraries spent nearly three times as much ($0.91 vs. $0.31) on electronic materials as their counterparts.

For the national sample, there were only two input measures where there was not a significant difference between early adopters and libraries that were not early adopters – print volumes per capita and computers per 1,000 served. For each of these statistics in the national sample, however, early adopting libraries still had higher average ratios. In Colorado, not only were there not significant differences between early adopters and others for these statistics, but non-early-adopters actually had higher ratios for each of them (see Table 5). One area where Colorado's responses departed considerably from the national sample was in audio materials held. Whereas public libraries identified as early adopters in the national sample held significantly more audio materials than their counterparts, in Colorado early adopters actually averaged slightly fewer materials held. For the rest of the input measures collected by IMLS, Colorado's early adopting public libraries had higher average ratios than their counterparts, though not at statistically significant levels.

Table 5: Input Ratios for Selected Statistics, by Early Adoption Status, Colorado Public Libraries

Statistic	Early Adopter	Not Early Adopter	Percent Difference
Computers per 1,000 Served	1.72	2.28	33%
Print Volumes per Capita	4.72	5.69	21%
Audio Materials per Capita	319	357	12%
Subscriptions per 1,000 Served	13.56	11.91	14%
Video Materials per Capita	325	280	16%
Staff per 1,000 served	0.96	0.76	26%
Librarians per 1,000 served	0.15	0.10	50%

Notes: No measures in this table showed statistical significance between the two groups. Shaded rows show where non-early adopting libraries had higher average per capita measures than early adopters.

In terms of service outputs, as measured by the amount of use of library services by their patrons, Colorado behaved in a similar fashion as the national sample, albeit to a lesser extent. For each output measure collected by IMLS, Colorado's early adopting public libraries showed higher ratios than their non-early adopting peers (see Table 6). Again, it should be stressed that for Colorado libraries, none of the differences in the averages was statistically significant.

Table 6: Output Ratios for Selected Statistics, by Early Adoption Status, Colorado Public Libraries

Statistic	Early Adopter	Not Early Adopter	Percent Higher
Visits per Capita	9.61	8.16	18%
Circulation per Capita	11.32	9.00	26%
Reference Questions per Capita	1.23	0.83	48%
Program Attendance per 1,000 Served	542	443	22%
Children's Program Attendance per 1,000 Served	410	345	19%
Children's Circulation per Capita	3.85	3.34	15%
Electronic Users per Capita	2.63	2.00	32%

Note: No measures in this table showed statistical significance between the two groups.

Early Adopters Conclusion

As with the national sample, public libraries in Colorado that were likely to be early adopters of web technologies tended to be those that were already strong libraries using traditional measures. Specifically, better funded libraries tended to put resources toward the development of this type of tool. However, the evidence for this was not as strong in Colorado libraries as it was in the national sample, as many of the differences between early adopters and others were either not as great or not statistically significant. This lack of statistical significance may be due to a variety of factors. First, Colorado libraries as a whole have higher average ratios on most of these input and output measures than national averages. There was less variation among libraries in the state than was found at the national level, which causes differences in ratios to be slightly muted. Additionally, Colorado offered a few exemplary programs that can help raise the bar for struggling libraries. The AskColorado virtual reference service was available and affordable to most public libraries in the state, and Plinkit had removed many barriers for public libraries to create a web site. Services such as these can flatten the Library 2.0 landscape throughout the state.

Conclusion

This study makes it clear that public libraries in the United States are still in the early stages of redefining their interactions with patrons on the Internet. It is equally clear that libraries that have been successful by traditional standards are taking the lead in this move forward. As this definition continues to be determined, there are opportunities for continued study.

The next step in this study is to ascertain the extent to which the adoption of certain web technologies might influence other patron behavior. When national public library data for 2008 is available, LRS will revisit the data from this study to look at the relationship between adoption of web technologies and the growth in traditional library statistical measures.

Additionally, LRS has plans to continue monitoring this area of library service. In spring 2010, LRS staff will repeat the study, again visiting public library web sites in the search of web technologies. The second iteration of the study will include much of the technology from the first, as well as newer technologies that have become more popular on public library web sites in the few years between studies. By following the technological trends in the profession, LRS hopes to equip library leaders with tools to make the best decisions in determining which technologies are worth adopting to best serve their patrons.

Appendix A

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Library Research Service
Research and Statistics about Libraries

Library 2.0

Catalogs and blogs

Check for the presence of a website. If the FSCS data contains a NULL (-3) for website, or the website listed is incorrect, search the web for a website to this library.

***1. Does this library have a web presence?**

- ○ Yes
- ○ No

Enriched Catalogs

2. Does the library provide access to an online catalog?

- ○ Yes
- ○ No

To answer question 2:
User comments/reviews are text reviews of specific items in the catalog.
User ratings are numeric/star ratings of specific items in the catalog.
Recommendations are system-created recommendations based on the user's catalog search.

3. Does the online catalog offer the following?

	Yes	No	Can't tell
User comments/reviews	○	○	○
User ratings of items	○	○	○
Recommendations	○	○	○

Determine whether the library catalog allows for tags of items -- if possible, determine whether the library allows for user-generated tags, or staff-only generation of tags.

4. Does the library catalog use tags?

- ○ User
- ○ Staff only
- ○ Yes, but unclear whether by user
- ○ No

5. If the library catalog has tags, does it incorporate them in any of the following ways?

	Library-based	General (e.g., LibraryThing-generated)	None	Can't tell
Tag cloud	○	○	○	○
Recently added tags	○	○	○	○
Most popular tags	○	○	○	○

Blogs/RSS

6. Does the library have a blog?

- ○ No.
- ○ Yes, hosted on another site or service.
- ○ Yes, hosted on the library's website.

If yes, please enter the date you checked and the dates of the most recent blog post and comment you could easily find (these do not have to come from the same blog. Enter dates in the following format: "YYYY-MM-DD" -- example: 2008-01-17

7. What is the date of the most recent blog post and comment you can easily find?

	Date checked	Post date	Comment date
Blog post/comment dates			

8. How many blogs did you find?

- ○ 0
- ○ 1-5
- ○ 6-10
- ○ 11-15
- ○ 16-20
- ○ 20+

9. Does the library offer RSS feeds for anything that you can find?

- ○ Yes
- ○ No

Definitions for the following question:
Library News
refers to RSS feeds, generally from blogs, that contain news about the library ("What's new", etc)
New books is an RSS feed that is based on the catalog, such as new materials.
Specific subject news
would be subject-specific information guides and resources for areas such as genealogy or business.

10. For which of the following area does the library provide RSS feeds?

	0	1-5	6-10	11-15	16-20	20+
Library news	○	○	○	○	○	○
YA news	○	○	○	○	○	○
New books	○	○	○	○	○	○
Specific subject news	○	○	○	○	○	○

For the following question, look for areas of the site that are essentially engaging the community in a

conversation - for example, an area where people can provide book reviews (not connected to the catalog), discussion boards, etc.

11. How many "areas of conversation" were you able to find?

- 0
- 1-5
- 6-10
- 11-15
- 16-20
- 20+

Personalized Library Account

Personalized Account

Personalized Library Account

Please check whether the library offers patrons the ability to log in to a section of their site to access their account.

12. Does the library offer online access to the patron's account?

- Yes
- No

If yes, try to access the "MyLibrary" equivalent for this website (i.e., options you would get if logged in with your library card) by signing up for a card online if available. Specifically look for the option to create a reading history and wish lists and edit your information. If you cannot log in to a MyLibrary account, see if you can answer the following 3 questions by looking through the information on their website (check the help and FAQ sections of the site as well).

13. Can you sign up for a library card online?

- Yes
- No
- Can't tell

14. Does the MyLibrary section of the site offer the following?

	Yes	No	Can't tell
Reading history	○	○	○
Turn off reading history	○	○	○
Ability to create "Wish Lists"	○	○	○
Ability to create new item alerts via email or RSS	○	○	○
Edit your information	○	○	○

15. Does the MyLibrary section incorporate tags in any of the following ways?

	Yes	No	Can't tell
Personalized tag cloud	○	○	○
Recently added tags	○	○	○
Most popular tags	○	○	○

Notifications

16. Does the library provide the following notification options for items available/overdue?

	Yes	No	Can't Tell
Email	○	○	○
SMS (text messaging)	○	○	○
RSS feeds	○	○	○

IM Reference

Reference Materials

IM Reference

17. Which of the following types of reference services does the library provide?

- ☐ Chat reference
- ☐ SMS (text messaging)
- ☐ Email
- ☐ Video Chat

The next two questions are for Colorado libraries only. Search for the presence of AskColorado on the library website, and answer the following questions.

18. How was AskColorado presented on the library's website?

- ○ On the library home page - top half
- ○ On the library home page - below the fold
- ○ On a subpage of the site
- ○ Unable to find presence of AskColorado

19. If AskColorado was linked to from the library's website, which version was linked to

- ○ English
- ○ Spanish
- ○ Both

Wikis

Check the website for the obvious presence of wikis. Especially search the areas of their site where they provide reference resources, subject guides, and the like. Staff contribute wikis are those that staff contribute to and are available for public use, but that the public cannot add information to. Public contribute are those that are available for edit to everyone.

20. How many wikis did you find to which only staff could contribute?

21. How many wikis did you find to which the general public could contribute?

Look for presence in all three services. Form MySpace and Facebook, also look for embedded catalog or IM reference. For the last section, count the number of comments for MySpace, number of 'fans' for Facebook, and number of 'contacts' for Flickr.

22. Describe the library's presence in the following:

	Presence	Embeded catalog search box(M&F)	Embeded IM reference(M&F)	Number of comments(M)/Fans(F)/Contacts (Fl
MySpace (M)	☐	☐	☐	
Facebook (F)	☐	☐	☐	
Flickr (Fl)	☐	☐	☐	

Podcasting and Vodcasting

Look for the presence of podcasts and videos on the site (or, links to YouTube videos). Podcasts might take the form of booktalks, display advertisements, instruction, and just about anything else. Check to see whether the library uses videos or video services to interact with their patrons, and if the library serves in any way to facilitate the use of these items.

23. Does the library use or facilitate podcasting?

	Uses	Facilitates
Podcasting	☐	☐
Vodcasting	☐	☐