Serving the User When and Where They Are: Hyperlinked Libraries

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Introduction

Emerging mechanisms for global communication and collaboration are changing the world and the way the world works. Businesses no longer demand employees and customers to be in any particular physical location to provide and receive premium services. Organizational charts are becoming flatter and more team-based. Individuals are constantly engaged in conversation and expect to have their information needs satisfied immediately, on any device, and wherever they happen to be. Information is no longer bound to a form or a place. Libraries housing unique and valuable collections, works and artifacts of local significance, and information sources not yet digitized must find ways to reach out to a public that will never have the opportunity to visit their buildings and who may never easily happen upon their websites. Libraries that are already providing online services and digital materials must constantly watch for innovative solutions that could be included in their information center processes, designs, and Web presences.

Historically, libraries have been advocates for the protection and expansion of information access, but now libraries have become one of the only inclusive spaces for the public to experiment with and use technological tools. Librarians must extend their knowledge and training into the hyperlinked online space—sharing, collaborating, and reflecting. Librarians must think and act outside their library, community, and even national boundaries to seek inspiration and support.

In a report by Wells (2014), industry analysts predict that by 2020 more than 50 billion mobile devices will be connected worldwide. In the next few years, the world will be using mobile services and devices we cannot imagine today. The library that builds value and thrives will be fluid enough to anticipate and quickly respond to new technologies and user expectations. The hyperlinked library model is welcoming, open, participatory, and incorporates user input and creativity. The hyperlinked library is human, and its communications and conversations, externally and internally, are in a human voice. It is a playful model emphasizing collections and spaces that evolve via user and staff participation in a transformational anytime, anywhere service dynamic.

This chapter will discuss the hyperlinked library model qualities of transparency, openness, and participation; the current landscape of digital connectivity; influences of mobile technologies on libraries and library services; examples of hyperlinked library technologies—cloud computing, professional development on demand, mobile apps, and processes on the horizon.

The Hyperlinked Library

The author has worked for several years researching, refining, and teaching a model of library service called "The Hyperlinked Library." This model is synthesized from data collected on emerging societal trends and burgeoning technologies used in library service as well as the writings of such authors as David Weinberger, Clay Shirky, and Seth Godin. Glenn (2003) calls the methodology used to build the evolving model "futures research," which is a blend of horizon scanning, trend research, and scenario planning. In an article for Serials Review (Stephens and Collins, 2007), I defined the hyperlinked library model as "an open, participatory institution that welcomes user input and creativity. It is built on human connections and conversations. The organizational chart is flatter and team-based. The collections grow and thrive via user involvement. Librarians are tapped in to user spaces and places online to interact, have presence, and point the way" (255). In my numerous scholarly and professional presentations, I discuss the model as well as the foundational research.

Hyperlinked library services are born from the constant, positive, and purposeful adaptation to change that is based on thoughtful planning and grounded in the mission of libraries. Librarians embracing the hyperlinked model practice careful trend spotting and apply the tenets of librarianship along with an informed understanding of emerging technologies' societal and cultural impact. Librarians communicate with patrons and potential users via open and transparent conversations using a wide variety of technologies across many platforms.

The hyperlinked library model flourishes in both physical and virtual spaces by offering collections, activities, trainings, and events that actively transform spectators into participants. In participatory cultures, everyone is in the business of advancing knowledge and increasing skill levels. The community is integrated into the structure of change and improvement.

The hyperlinked library is transparent when it talks and listens, practices inclusion, and keeps no secrets. The library activates processes to gather as much input from the entire community as possible, which heightens in patrons the expectation that communications with the library will be open and equitable. The hyperlinked library encourages all types of conversation and feedback about the organization. It is a move toward greater transparency when users are invited to share their opinions about how a library is performing, and when the library listens and responds. Library management shows evidence of active listening and responding to users and staff by implementing requested changes and launching new services, using careful testing as part of the plan for solid, incremental growth.

Because of the easy and ubiquitous communications possible with mobile devices, these technologies make transparency more attainable than ever. Libraries can share information about current plans and solicit feedback on social networks, which utilize the more naturally transparent and trusted conversation channels developed among peers and families. Published updates, calls for community input, and beta tests of new services delivered to the devices in users' hands enable the hyperlinking of all stakeholders anytime and anywhere.

Continuous Computing and Participation

The current landscape is one of continuous computing and of always being in conversation. Information has an active social life; creating and sharing ideas plays out across networks and social sites. World populations are moving toward this ubiquitous digital connectivity with anytime, everywhere access, mainly via mobile devices, such as tablets or phones. Organizations no longer have a monopoly on packaging information, and information control is decentralized and distributed. Anyone can curate information and publish collections from anywhere, deliver content anytime, and share on a wide selection of devices in many different formats and in multiple languages. User preferences for particular technologies are unpredictable; the heavily promoted complex nano-computers, head-mounted displays, and other experimental devices may never make it to mainstream adoption, but handheld devices of all kinds have become the norm for connectivity. ITU, the UN agency that collects telecommunications data from 200 economies, estimates the number of mobile-cellular subscriptions at seven billion (ITU Telecommunication Development Bureau, 2014). According to CTIA Wireless Association CEO Baker (2014), an average of 3.6 million text messages and almost 183,000 video and photo messages were sent every minute in 2013, which is an increase of 120 percent over the previous year.

In addition to the increases in personal messaging on handheld devices worldwide, groups, institutions, and businesses are increasingly publishing and distributing communications via mobile apps. Information professionals who establish free, open, and well-publicized communication channels on mobile platforms and who build these channels for user interactivity, will be rewarded with a growing, engaged community base. With patrons and potential users thinking and interacting on the move, librarians must constantly study how library services are discovered, accessed, and used. Communications have evolved from simple two-way interchanges into interconnected, multi-layered flows. Adopting a hyperlinked library model and collaboratively designing spaces for these new information sharing practices, calls for a flattening of organizational structure. Adopting the hyperlinked library model means inviting library patrons to partner with library professionals to revisit mission and values statements, set revised goals and objectives, and discuss the big ideas behind library services and librarianship.

Throughout *Too Big to Know,* David Weinberger argues that the smartest person in the room isn't the biggest brain or the whole group of people in room, but the room itself. A poorly

constructed room can result in echo chambers and groupthink, while a well-constructed room can enable constructive conversations and continuous knowledge discovery. In chapter 9, Weinberger (2012) suggests five foundational concepts to "help make the networking of knowledge the blessing it should be:"

> Open up access
> Provide the hooks for intelligence (metadata)
> Link everything
> Leave no institutional knowledge behind
> Teach everyone. (183)

These tenets should guide the building of new outreach services with mobile technologies as well as participatory online spaces created by information professionals for their constituents.

Influence of Mobile Technologies

A few years ago, I did a presentation for a library group in South Carolina. The night before the talk, the hotel bartender chatted with me about his mobile device. He said, "I have everything I need here: I have my web, I have my email, I have my text, I have my video, and I have my music: I have the world of information in my hand." His remark resonated with me, and I have told the story in many presentations and articles ever since, because it's indicative of the way that people think about their devices. Pew Research Internet Project (2014), in a survey with 2008 adults, found that 29 percent could not imagine living without their cell phones; 44 percent sleep with their phones; and 67 percent regularly check for notifications without being alerted. The main findings by Duggan and Smith in "Cell Internet Use 2013" provide further evidence that mobile devices are ingrained in our lives. Maeve Duggan and Aaron Smith, senior researchers at Pew Research Internet Project, reported that younger adults, non-whites, less-educated, and less affluent Americans, use cell phones as the primary device for accessing online content much more often than older, white, college educated, or the more affluent—a development that has particular relevance to organizations seeking to reach these groups.

A joint study by AOL Inc. and advertising firm BBDO (AOL, 2012) reported that 68 percent of individual mobile phone use happens within the home and also found seven primary motivations. The descriptors include self-expression, discovery, preparation (planning a trip, etc.), and accomplishment of a task (mobile banking, etc.). The highest use, however, at 46 percent, is what the researchers call "me time," or accessing relaxing or entertaining content that will help to pass the time. The study, aimed at marketers, should also inspire librarians and information professionals to offer virtual experiences in which users can indulge and enjoy themselves.

The NMC Horizon Report 2012 explored mobile access to learning, and authors Johnson, Adams, and Cummins noted that mobile apps make it possible for people to work, learn, study, and play whenever and wherever they want to. When services and opportunities for learning are not available on the go, the term place-based is used to describe the limitations that confront both students and library users. For example, administrators might ask: "How many of your processes require people to visit your location?" How many could be accomplished via the web or mobile

technology?" Delivering learning opportunities and access to collections and services on mobile devices seamlessly and without barriers is a positive response to this trend.

The Hyperlinked Library Gone Mobile

When exploring the hyperlinked library model, the current state of continuous participatory computing, and the affordances of mobile technologies, we must turn our attention to what libraries and information centers could develop as strategies for mobile access and participation. What avenues should be explored in relation to hyperlinked mobile services? How can we find a place inside these emerging environments?

Collections Everywhere

A few years ago, I exchanged emails with a university library that has a unique artifact from a songwriter in its special collection. I discovered only one page of lyrics is digitized and showcased on the library web site. The rest is only available if I travel to this distant institution. The school cited concerns about preservation and copyright as reasons why I could not access these documents digitally. Counter that unfortunate barrier to access with the impressive collection-focused apps from the British Library and the work done at New York Public Library highlighting various parts of the collection via iPad apps. The hyperlinked library offers collections and access anywhere—especially a library's most unique and interesting offerings. Mobile apps expand the process of discovery into virtual worlds, and library collections need to be where the users are exploring.

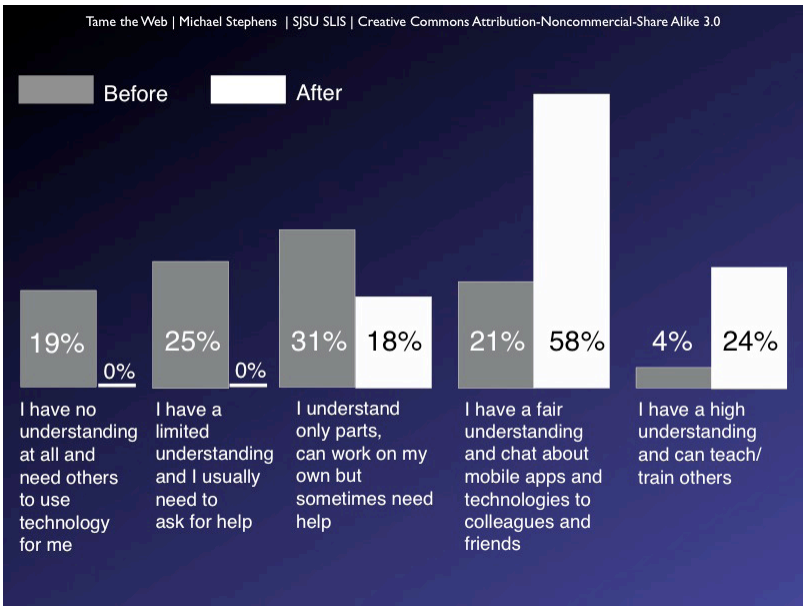
Cloud Librarians

As users spend more computing time on mobile devices and become increasingly familiar with saving and sharing content on cloud-based services, the emerging participatory culture will need the traditional foundations of literacy—research skills and critical analysis—along with skills in networking, problem-solving, and exploratory play. Librarians and information professionals can expand their practice by becoming knowledgeable guides in these new cloud landscapes. They can teach others to build and maintain personal learning networks (PLN) and exploration spaces (Stephens, 2012). They can harness the power of the data stored in the cloud to answer questions, share information, and collaborate with users. Huge amounts of data—images, status updates, reviews, and more—become a set of resources at our fingertips. The groups and collections thriving at the image and resource sharing communities Flickr, DeviantART, Instagram, and Pinterest are examples of environments that hold opportunities for cloud content curation and management.

Professional Development On Demand

With the continuing evolution of cloud resources and mobile technologies, many libraries and information centers must provide opportunities for staff training before expanding services and initiating programs with the public. The 23 Mobile Things program, spun off from the incredibly popular Learning 2.0 programs that originated in libraries in 2006, cultivates an enthusiasm for experimenting with emerging and unfamiliar technologies by providing a simple, adaptable

framework of exploration, one app at a time. The program's clear focus on immersion into mobile technologies allows 23 Mobile Things participants to use the learning and practice for all aspects of library service. 23 Mobile Things program adaptations by the international library community can introduce administration and staff to variations in practices and technologies that will spark more experimentation. This participatory platform also brings professionals together from all over the world to explore and discuss the future of mobile and the technologies that will expand and enrich communications.



I have researched the efficacy and success rates of Learning 2.0 and Mobile 23 Things programs, concluding that those staff who participate experience more comfort and confidence with emerging technologies. For more, please see my cumulative analysis of programs from 2009 and 2012 in Reference & User Services Quarterly (Stephens, 2013).

On the Horizon

Hyperlinked and Hyper-local

An increasing number of the new social sharing apps on mobile devices incorporate geo-location in surprising and innovative ways. The interfaces can be messy, weird, and kind of silly, but mapping content to location offers a promise of discovering hidden relationships within content that can be used to spot trends and expand library services. With the most rudimentary location-based apps, I can easily find specialty menu restaurants within a mile of a conference hotel via localized search. I can tap into the wisdom of nearby hikers while exploring a national park via app services like "Find Twitter users near me." However, deciding how much information to share about personal location and situation on open platforms is an important privacy consideration. We need to develop more understanding about how much is too much and how little is too little.

Gamification

The NMC Horizon Report: 2014 Higher Education Edition placed the time-to-adoption for applying gaming dynamics to learning and research environments at two to three years. Game-play has become a portable activity, which utilizes the combination of particular elements, mechanics, and frameworks to increase productivity, creativity, and problem solving. Libraries can take advantage of gameplay's ability to increase engagement by creating online environments with level-up

properties that reward users. Library users can interact in experimental gamified spaces or become involved with larger regional, national, or even international gaming groups in library-designed environments. Information professionals can participate as on-demand expert scouts and guides. In a discussion of gamifying library experiences in ACRL TechConnect, Kim (2012) reported that applying game dynamics has the potential to raise levels of engagement with library services, especially when the objectives of games are not particular outcomes, but fun and enjoyable experiences.

Second Screen Sharing

Social sharing apps related to television, movies and other popular cultural interests have led to the use of mobile devices while consuming entertainment. Second screen sharing describes a participatory process in which users might tweet, post to social sites, or interact while watching broadcast programs and events. This process might also involve active searching for information related to the content of the show, movie, or event. Sharing entertainment experiences becomes easy and fun with apps such as Get Glue, and participation will only become more immersive with new apps that are certainly in development. Closely related to the entertainment sharing apps are social sites devoted to readers in conversation about books and other textual material. Social reading and second screen computing are trends that will only increase over time.

Geo-Social Curation and Stewardship

Within immersive, participatory environments, who is better equipped to curate and manage content associated with geographic locations than the information professional or librarian? And who is better prepared to organize historical information linked to specific geographic locations than local history librarians? Who might best oversee a hyperlinked tour of data-rich points of interest around town, a campus, or corporate headquarters? Information professionals and librarians aware of mobile app development requirements and versed in information architecture concepts fit the bill nicely. Partnering with museum and historical society staff would bring even more depth and range to app contents and user experiences.

Embedded Experts

Is it too far out to imagine a time when we might be able to link up with a local expert via a geo-social Twitter-like app, such as Localmind, and ask research questions in addition to making requests for simple recommendations? What if, for example, while using the National Park Service Independence Mobile App http://www.nps.gov/inde/planyourvisit/app.htm to explore points of interest near the Liberty Bell in Philadelphia, PA, we could directly link to Revolutionary War experts chatting live during scheduled times and ask them questions? What if we could stand in Independence Hall and listen to live debates about pressing constitutional issues and participate in the dialogue?

Conclusion

Learning via mobile devices happens in an entirely new landscape, infinite in every direction. Access to information through mobile devices has unbundled learning from the traditional forms imposed by time and space. It has made anytime, anywhere collaboration and feedback possible. It has fostered impromptu conversations without concerns for language and cultural differences. Knowledge networks form and expand that can directly connect all levels of participants, from beginning learners to experts. These virtual exchange spaces can offer endless opportunities for future-thinking librarians, who develop skills as online learning experience curators and engagement developers.

Libraries continue to evolve and adapt as socio-technological changes occur. Exploring the hyperlinked library model as a mobile platform for discovery, interaction, and participation is just one facet of the rich and varied possibilities for our future. Delivering easy-to-use, unique, and just-in-time services to the palm of a user's hand, however, may be one of the most important goals we take on as information professionals.

Discussion Questions

- What are the challenges to experimentation and adoption of mobile technologies?
- What collections and services should be available to users anywhere?
- How must libraries adapt to the concept of learning everywhere?
- How do we decide which mobile technologies to adopt?
- What apps do you use? What apps should libraries make available?
- How do we plan when we don't know what is going to happen?
- Can libraries play a role in "second screen" participation?

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