Chapter 6

Lessons for Library Innovation

Abstract

This chapter examines outcomes and insights afforded by the video kiosk in order to suggest best practices applicable to other emerging technology contexts.

Analyzing the Kiosk Experience

The economic climate is introducing a different shade of technological conservatism to many sectors of libraryland, one based more on resource scarcity than resistance to change. Trying times make a "try it and see" approach far less palatable, upping the ante for new and proposed projects to have an immediate demonstrable impact. It is therefore more important than ever that we learn from one another's experiences in order to inform local applications.

Critical perspectives can become buried in 140 characters, leaving out "why *x* really matters," and the even more useful "be prepared for *a* and *b* to go right, and *y* and *z* to go wrong." Anyone who has wrangled social tools into viable services knows that reflective, radically honest perspectives on performance are absolutely necessary to prevent us from replicating each other's mistakes. In this chapter I analyze several angles and outcomes of the kiosk project that have implications for emerging technology development in other library contexts.

Knowledge Sharing

Our experiences at OU influenced similar project proposals at other institutions. Between 2007 and 2009 Temple University and San Francisco State University both considered and rejected kiosk pilots based in part on the project information Chad and I shared through blogs, papers, and presentations.

When they began considering kiosks, the SFSU Libraries faced a lengthy construction project that would render their public service points unusable for several years. Jeff Rosen, reference services coordinator, describes their decision-making process, which went as far as designing mock signage to share with library administration (figure 24):

> Initially we felt the video kiosk would provide the next best thing to an in-person librarian. . . . While we were able to successfully set up the Skype service on our campus network, it was certainly not without problems and we felt these would increase were we to attempt extending the service to our downtown campus. We also felt that instant message reference service and text message service would provide a comparable virtual reference service and be more portable and easier to staff. Many of the librarians (including some of us testing the service) had less than comfortable feelings at being "on camera." Moreover, after our initial investigation we felt that IM service offered the same level of being able to assist users without the exposure to both patron and librarian that video conferencing would provide. There was also the staffing issue. How would we provide in-person, IM, text and Skype reference services from one location and with fewer personnel than we had the previous year?[1]

Jennifer Baldwin, head of reference and instructional services at Temple University Libraries, describes a different kiosk scenario—they considered a pilot similar to OU's while exploring innovative stacks assistance models. Despite considerable interest among reference staff,

support was given to competing text messaging and roving reference pilots:

> The kiosk idea came up twice in response to our annual budget initiatives requests that each library department makes to our administration. . . . Ultimately a request for a directional assistance kiosk was submitted in 08, but it was less a priority than our requests for things like handheld devices for our roaming reference project and an audience response system for our classroom. In the case of VoIP for reference, I think the reference department focused on the projects that best served our patrons at that time—expansion of virtual service (we were dropping docutek and implementing libraryh3lp), experimenting with modes of face-to-face service (roaming with handhelds), and improving our instructional sessions (audience response system). For the directional needs in the stacks, the technology idea that had a champion (cell tour) won out over the one that didn't.[2]

I experienced a similar situation in my current position; at UC Berkeley in 2009 I considered and rejected a kiosk approach in our similarly understaffed stacks, supported by my experience that the resources required would far outweigh the benefit to users. Informed by our feet-first experience at OU, SFSU and Temple were able to anticipate potential overextension and shallow return on investment. Had we not shared the benefits and drawbacks of the project and the current viability of video kiosk reference, Temple and SFSU might have gone through a redundant hype cycles instead of starting at our slope of enlightenment.

Organizational Culture

An institution or department that sustains a flexible, and enthusiastic culture can engender a great deal of forward-thinking collaborative work, undoubtedly one of the best outcomes of our team-based, rapid-prototyping approach. Experimental outlooks can also unintentionally cause an overcommitment of staff and resources unless strong planning creates an understanding of how pilots will affect other operations. In more conservative or procedural environments, fewer projects may see the light of day due to overzealous vetting or "death by committee," but those that emerge are likelier to begin scalably. The balance is a well-informed, risk-positive library that communicates well, helps ideas benefit from the input of affected stakeholders, and allows the strongest ideas to rise to the surface.

An interesting byproduct of the creative freedom enjoyed by our team at OU is that even a problematic concept was given time to right itself and thrive (or, in our case, die). Our iterative approach produced an undertone of resistance to letting the kiosk defeat us—after so much success with other initiatives, admitting its limited impact was difficult. My own attitude was that there was a buried secret in the project waiting to be unlocked, and my hope of discovering the "right" configuration is one of the reasons we kept changing things up. Even though it drew the pilot beyond its useful lifespan, prototyping created knowledge that otherwise never would have been gained. Our main error was in not gathering more patron input prior to designing the service; had we conducted user research earlier, we might have found that a Skype call-in service and video kiosk were both before their time and secondary to other priorities. In this scenario, our organizational factors added up to a well-implemented, interesting, overextended, and ultimately unnecessary project born of hype-affected expectations.

Figure 24
Mock SFSU kiosk signage.

In her description of why Temple discarded the kiosk idea in favor of other emerging reference service models, Jennifer Baldwin noted, "in reflecting on it I see this may be an illustration of how organizational culture and the structure of our budgeting process impacts adoption of emerging technology."[3] Organizational priorities are indeed key, which leads me to reflect that, in contexts that can produce them, experimental projects *need* to come and go so that we may all learn from their hits and misses. It is absolutely necessary for some individuals and institutions to devote energy to experimental pilots, even if they ultimately crash and burn. While this is more feasible within flexible or progressive climates, it is a cultural change important to promote throughout the library field.

There are best practices in project planning and local

user research that can guide pilot services to their ultimate goal: informed flexibility, or a willingness to accept certain risks determined through research and clear contingency thinking, revise course when necessary, and assess a product or performance based on some degree of predetermined criteria. This approach is applicable far beyond public services and can serve as a blanket call for a less risk-averse orientation in all areas of library operations to spur projects that solve shared problems.

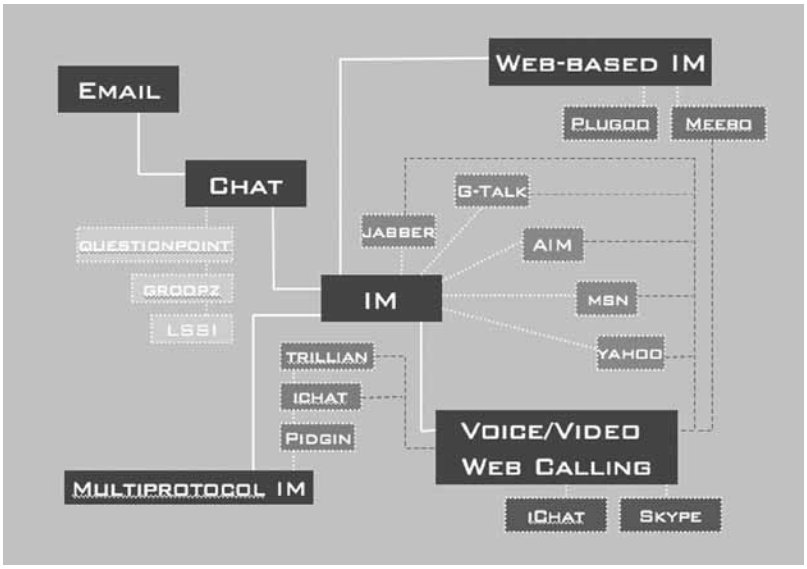

Figure 25
The "Evolution of Virtual Reference."

Rationalizing Expectations

When I started talking about Skype kiosks and video reference back in 2007, I believed that Web video was the next inevitable step in the progression toward more personal and in-depth digital reference experiences. This thought process was built on the deterministic, hype-influenced assumption that each new communication or social technology is inherently disruptive, and should therefore be widely implemented. A diagram I created in 2007, the "Evolution of Virtual Reference," which implies that e-mail is the old school while video reference is the new school (figure 25). While this may be the case to some extent, it cannot be seen as an inexorable progression. According to this reasoning, Second Life was the logical next frontier in digital reference, which it is safe to say at this point was wrong. Why not ChatRoulette reference, or arbitrarily jumping onto a blind and anonymous video chat site and randomly asking participants if they have a pressing information need?

It's not incorrect to assume that the advent of a new platform creates the potential for new library products or programming, but it is equally important to reflect whether the audience for each service becomes smaller as options proliferate. In a different type of "long tail," introducing SMS or IM reference can reduce the number of in-person and telephone inquiries, giving the appearance of service declines unless assessed in tandem.[4] I overestimated the adoption curve of Web calling in part by missing this lesson: Niche services should be viewed with consciously (but positively) deflated expectations. Even though there are hundreds of millions of Skype subscribers, they are a fraction of total phone users who tend to use VoIP for personal and professional communication - a library use cohort is going to be modest from the outset. While the audience may exist, it is necessary to understand whether it is substantial or interested enough to warrant the work.

Video Reference

During the Skype project I made one relatively sound prediction: interfaces and devices that give users the choice of one or more modes of communication (voice, video, or text) would become increasingly popular, now undeniably the case with mobile devices, social media, and other tools. This trend seemed to promise powerful results for reference because it provided more types of information exchange and created dynamic interactions, allowing users to choose according to their preference. My mistake was to assume that they would choose video. Targeted or scheduled video consultations or recorded vodcasts may be effective ways of providing distance information help, or instruction, or to create a "sense of occasion," but that no call-in interactions in any Skype pilot have to my knowledge involved user-initiated video indicates that visual communication is not a value-contributing aspect of most general reference services.[5]

Smart Mobs author Howard Rheingold has noted, "One thing about video. . . it does convey an authentic sense of the person being there, and I think there is real value in that."[6] There are several applications of VoIP in public services, and video kiosks are among the most problematic. As the OU pilot was being laid to rest, Alabama's Connecting Families Skype initiative and Tigard's Skype Lab were discovering the true potential of video calling in libraries—connecting people who truly want and need to see one another in order to create a valuable experience.

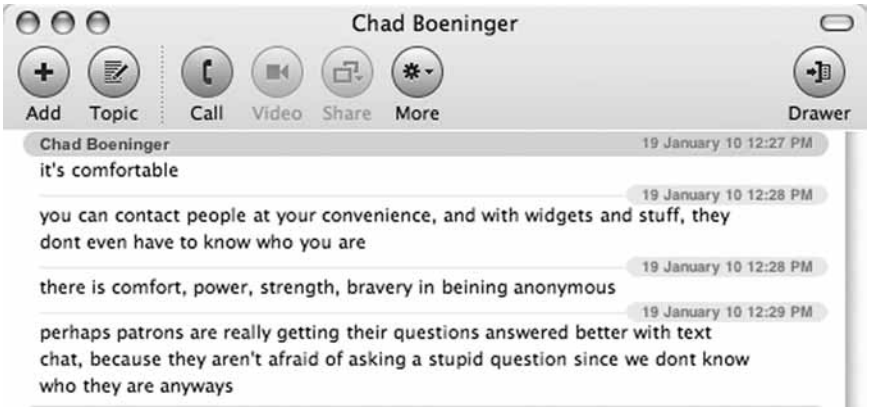

Figure 26
Chad's comments on the comfort of using text-based digital reference.

Michael Buckland has argued that the discourse of digital reference has too often focused on "empowering" librarians than fulfilling information needs; in a sense, the kiosk project was a perfect manifestation of this tendency.[7] It was an attempt to raise librarian visibility as a means of enhancing services, but it did not reflect user preference in the digital environment. In our kiosk discussions, Chad makes an excellent point about why text-based communication is easier for library users to handle (figure 26): it is faster and requires less social protocol, which facilitates streamlined, low-threshhold information exchange. Text-based communication in its contemporary forms—chat, email, IM, and SMS—is proving to be the most efficient digital reference format. Putting a literal face on virtual reference may have been a laudable attempt to deepen the digital interaction, but it did not consider that users might simply prefer the simplicity and anonymity of text.

Consolidating the Streams with Universal Communicators

Staffing multiple services was a constant issue among libraries piloting Skype reference on the call-in model, similarly taxing to us during the kiosk pilot. "The staffing of any service is a challenge," noted Millie Gonzales of Framingham State College, recalling the difficulty of integrating Skype into Whittemore Library's reference workflow. "We offer email, telephone, IM, SMS reference service as well. Sometimes it is difficult to juggle and prioritize the services because of our staffing levels."[8] By setting up a one-stop multifunctional account to consolidate the multiple reference streams that libraries contend with as natural consequence of social media diversification, universal communicators like VoxOx (see chapter 2) can provide a powerful way to mitigate this problem and integrate new options more gracefully into existing workflows. Building on the strategy already provided by tools like Trillian and Meebo that allow simultaneous IM logins, universal communicators can be centrally field incoming reference queries from e-mail, Facebook, Twitter, IM, SMS, VoIP, mobiles, and landlines without affecting the patron experience.

Fidelity, Social Presence, and User Preference

In order to understand how our vision of video reference failed and why text is a more comfortable mode of reference communication, it helps to consider two concepts: *communication fidelity* and *social presence.* Communication fidelity is how closely a technology-mediated interaction (e.g., phone call, text message) resembles a face-to-face interaction (e.g., video chat has much higher fidelity than an e-mail, for example). *Social presence* is how interpersonally close a user feels to the individuals they are interacting with, regardless of medium.[9]

In a *Time* magazine article in early 2010, Joel Stein speculated on why video calling hasn't become more popular, concluding that it's largely because it forces you to focus on the other party, which is completely out of keeping with our increasingly control-centric, multitasking, and asynchronous world. In other words, video calling demonds a level of fidelity that is contrary to how most people want to communicate: with a minimum of effort and time. In Stein's words, "as far as the full-contact listening that Skype requires, I don't think we want that all that often from people who aren't already in our house. The fact is, we don't really want to see other people that badly."[10]

From SMS to tweet to in-person conversation to video call, individuals shuttle between modes of communication fidelity to satisfy different functions. They might video conference with their loved ones and text a library question in the same hour, making strategic judgments about fidelity preference based on what they hope to achieve from the interaction. People choose video when, whether for personal or strategic reasons, communication needs to closely replicate an in-person exchange. The error in judgment that led me to make outsized predictions was that people would continue to pursue higher fidelity in communications (i.e., video) irrespective of context as the technology improved, and that some would begin to prefer video as their general method of communication.

Fidelity in professional settings plays out similarly, some hesitating to fully engage with their personal

computer as a unified communications tool. In chapter 3, I quoted Steven Bell on the reluctance of many participating in the Bended Librarian Online to use voice or video in Web learning interactions. He elaborated, saying, "I do not think this is necessarily limited to our librarian community. When I participate in similar webcast for the TLT Group, attendees are typically faculty and instructional technologists, and even then there are few folks taking over the mic to speak. . . . The next generation may be more accustomed to using VoIP to communicate in their courses. I hope you are able to find some examples of libraries using VoIP or video with the user community, but I suspect that even fewer of them are accustomed to having the mic or headset available for this sort of thing."[11] Steven makes a critical point: until we begin seeing our personal computers as rich communication devices, we risk reducing the potential of our digital interactions.

The Uncanny Valley

People tend to use video when social presence makes them want higher communication fidelity, never casually. Conversely, they tend to choose convenience and expediency for utilitarian interactions. The video aspect of our kiosk thus made it virtually impossible to put patrons at ease, one of the primary aims of a reference interaction. Video was disturbing, distracting, and out of keeping with their simple desire for assistance. Rather than personalizing the digital interaction as we had hoped, video succeeded in alienating users to the point of service failure.

A concept known as the "uncanny valley" helps explain this phenomenon. Developed by Japanese roboticist Masahiro Mori, the uncanny valley is based on Freud's notion of the uncanny, which describes the disturbance we feel when something is simultaneously foreign and familiar. The uncanny valley is a zone between digital figures that are not lifelike enough and those so lifelike that they are unsettling: "The notion was that if you made a robot that was 50 percent lifelike, that was fantastic. If you made it 96 percent lifelike, it was a disaster. A 96 percent lifelike robot is a human being with something wrong with it."[12]

Video calling also operates in an uncanny valley, one in which digital communication is almost lifelike enough but only if social presence is sufficient to sustain an acceptance of Web video's flaws. In the average video call, not only do you frequently deal with low resolution and error, your own image is open in a distracting mirrorlike smaller window, and camera positioning makes it impossible to make eye contact with the other party or parties. To bridge this gap a few people have rigged DIY mirror systems to achieve eye contact (figure 27), but these are still infrequently used.[13] Until screen-embedded cameras and faster network speeds are the norm, video callers will operate in this uncanny valley and accept a semidisturbing degradation of interpersonal communication quality only to satisfy a compelling urge to *see* someone.

Figure 27
Eye contact device.

Learning from History

Despite popular fascination with video communication for well over one hundred years, a persistent reality of "lackluster demand" has derailed its its on-the-ground implementations to an extent I wish I had investigated before co-building the kiosk.[14] Video communication was conceived as early as the end of the 19th century; first depicted in a famous 1878 George du Maurier Punch illustration, the "telectroscope" was a complex but recognizable combination of screen and speaking tubes. Popular conceptualizations of video calling grew more sophisticated as the phonograph, cinema, and other high-fidelity audio and image capture devices became commonplace, as demonstrated by a 1910 French artist's projection of the medium in 2000. The image is is almost uncannily predictive of the VoIP-integrated televisions described in Chapter 2 (figure 28).

As popular imagination became technical reality, the promise of video calling did not materialize. Major companies repeatedly failed to market visual telephony over the second half of the 20th century.[15] AT&T launched

near-identical versions of its "Picturephone" in 1965 and 1973, as well as the "Videophone 2500" in 1992: three of many unmitigated failures.[16] Several issues contributed to the videophone popularization problem: excessive cost, absence of demand, and poor quality of service precluded them from home markets. Business consumers were the only ones that could afford the technology, yet they could not find a compelling interest to use such "expensive toys" in their offices. Perhaps not surprisingly, this pattern of post-novelty consumer disinterest corroborates with the OU kiosk experience: video calling has stretched the hype cycle to historic proportions.

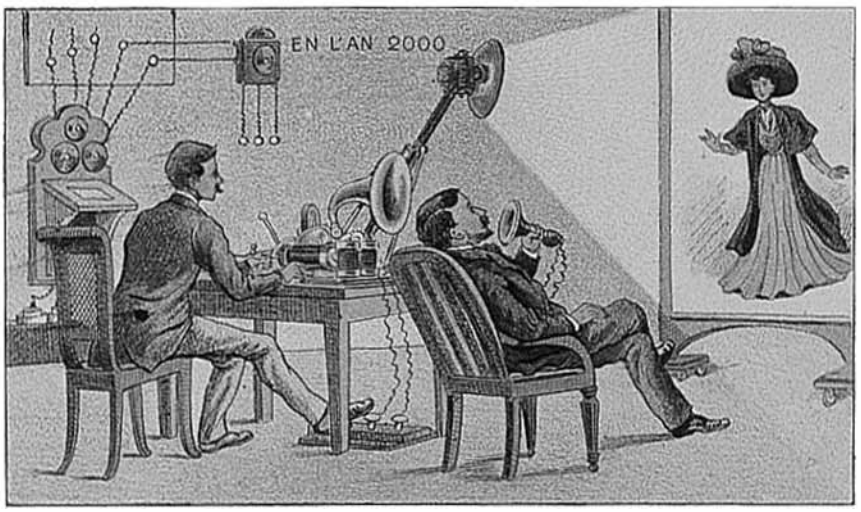

Figure 28
Video communication in 2000, as imagined circa 1910 (Wikimedia Commons).

A recent enterprise VoIP study concluded that "factors involving inter-personal relationships [were] collectively more important than travel as reasons to use video: clear communication and understanding, understanding subtle cues, and building relationships," all factors that shed compelling light on why we were not able to sustain a walk-up or call-in video reference model at Ohio University.[17] Inexpensive webcams, Internet protocols, and broadband networks have allowed this epically and epochally "stalled" technology to become popularly viable, but the fidelity afforded by interpersonal, real-time video seems firmly constrained to interactions with intentionally high interpersonal significance.[18]

Notes

1. Jeff Rosen, e-mail message to the author, March 30, 2010.
2. Jennifer Baldwin, e-mail message to the author, March 3, 2010.
3. Ibid.
4. Char Booth, *Informing Innovation: Tracking Student Interest in Emerging Technologies at Ohio University* (Chicago: ACRL Press, 2009), available at http://tinyurl.com/ii-booth.
5. Martin Elton, "Visual Communication Systems: Trials and Experiences," *Proceedings of the IEEE* 72, no. 4 (April 1985): 701.
6. Howard Rheingold, "Participatory Media for Education" (keynote address, Next Generation Teaching and Learning Symposium, University of California, Berkeley, April 17, 2010).
7. Michael Buckland, "Reference Library Service in the Digital Environment," *Library and Information Science Research* 30, no. 2 (2008): 81–85.
8. Millie Gonzalez, e-mail message to the author, March 29, 2010.
9. Elton, "Visual Communication Systems."
10. Joel Stein, "Call Me! But Not on Skype or Any Other Videophone," *Time*, Jan. 18, 2010, www.time.com/time/magazine/article/0,9171,1952314,00.html (accessed Jan. 25 , 2010).
11. Steven Bell, e-mail message to the author, Dec. 21, 2009.
12. Lawrence Weschler, quoted in Jamie York, "Hollywood Eyes the Uncanny Valley in Animation," *All Things Considered*, March 5, 2010, www.npr.org/templates/story/story.php?storyId=124371580 (accessed May 25, 2010).
13. Aram Bartholl, "'Here Is Looking at You, Kid,'" Aram Bartholl—Blog, Jan. 23, 2009, http://datenform.de/blog/here-is-looking-at-you-kid (accessed May 25, 2010).
14. Steve Schnaars and Cliff Wymbs, "On the Persistence of Lackluster Demand: The History of the Video Telephone," *Technological Forecasting and Social Change* 71, no 3 (2004): 197.
15. Elton, "Visual Communication Systems," 701.
16. Ibid.
17. A. Ziele, "Getting Ready for Multimedia," *Telephony* 231, no. 22 (1996): 36–39, in Schnaars and Wymbs, "On the Persistence of Lackluster Demand, 212.
18. Robert Poe, "Why Videoconferencing Needs a Better Story," VoIP Evolution, Feb. 2, 2010, www.voipevolution.com/2010/02/video-conferencing-needs-better-story.html (accessed May 25th, 2010).