Chapter 3

Analyzing Library Leaders' Survey Responses

Abstract

A survey open to members of the Association of Research Libraries was conducted in spring 2013, seeking additional thoughts on technological innovation from directors of these large research libraries. Chapter 3 of Library Technology Reports *(vol. 49, no. 7) "Technological Innovation: Perceptions and Definitions" shares the responses of two dozen directors who participated in the ten-question survey. Questions focused on the definition of* innovation *(including thoughts on words often associated with the term), factors helping to inform whether to proceed with a technology-based innovation, thoughts on existing technologies, and directors' perceptions on whether such technologies were "innovative," and how directors support or encourage innovation within the library. Additional insights from the literature on innovation are interwoven with the survey discussion.*

With the preceding chapters serving as background, this chapter focuses on the survey administered to ARL member library leaders, shares results, and provides some analysis. The appendix provides the original consent form and survey questions. The survey was composed of ten questions, several of which were multiple-choice, and several of which allowed for free text comments to allow participants to share additional thoughts and allow the researcher to gain additional insights—and many respondents did share additional thoughts. By design, the "meaning" of technological or technology-based innovation was only loosely introduced and conceptualized in the survey e-mail announcement:

> What do library leaders mean when they speak about "innovation" in the research library community? Innovation can be broadly defined [to] include topics such as organizational structure, age or size of the library, and involve things that have nothing to do, per se, with technology. However, my research specifically focuses on innovation with a heavy technological component, what I refer to as "technological innovation." . . . The purpose of this research is to better define, capture, and exemplify what research library leaders mean when referring to technological innovation in the research library community.

The brevity was intentional, so as not to influence—even subtly—any participant responses. The data collection period was six weeks during March and April 2013. The survey announcement e-mail was sent to each director of the 125 members of the Association of Research Libraries; one reminder e-mail was sent before the survey was closed. A total of 24 responses were received, a response rate of 19.2 percent. While low, this actually exceeded the author's expectations, acknowledging typical director workloads (the survey was estimated to take up to a half hour to complete), combined with the very real possibility of survey fatigue—daily invitations to take surveys often appear in e-mail. As stated in chapter 1, whether one response or a hundred responses were received, the purpose of the research was to gain insights from library directors into what they mean or perceive as technological innovation and, more broadly, to engender discussion within the library community—whether among library deans and directors, library technologists, or both.

To begin, why focus on academic library leaders? From a logistical standpoint, the reason was to help structure the possible response pool for this broad

topic. But more importantly, and likely very obvious, academic library leaders have tremendous influence over an organization. Hamel notes, "Typically, a lower- or midlevel employee with a new idea has only one place to go for funding—up the chain of command. If the nascent project doesn't jibe with the boss's near-term priorities, it won't get funded."[1] Paraphrasing Gary Hamel, Schnell notes, "The bottleneck within an organization that ultimately throttles innovation is almost always located at the top. Organizations are trained to look to the top for clues about where it's going."[2] Patterson et al. lists top factors or catalysts for innovation, including "managers' support and openness to innovation," "leaders modeling behaviors that encourage innovation," and "senior leadership's development of an innovation strategy and related priorities."[3] Jantz notes, "Strategy, organizational structure, and the innovative climate are largely established and controlled by the leadership of an organization."[4] He continues, "Although there are compelling arguments suggesting that organizational innovation can flourish in spite of, or independently of leadership, the premise of [Jantz's] research is that leadership makes a difference—and perhaps a big difference for nonprofit organizations such as research libraries."[5] If there were any remaining doubts about the leader's, or management's, role in innovation, Jantz, citing Damanpour and Aravind, notes, "A meta-analysis covering 40 years of research has shown that one of the most consistent indicators of innovation is the leader's positive attitude toward change."[6] All this noted, others can also play a role: "Research has shown that innovation champions may be powerful individuals in an organization, or they may be lower-level individuals who possess the ability to coordinate the actions of others. The degree to which champions are powerful seems to depend on the nature of the innovation and the organization in which it is gaining acceptance."[7]

When the author first started approaching this topic several years back, he found, as has also been noted by Jantz, "Relatively few studies of innovation in academic libraries exist, and no study to date has examined the singular leader's perspectives on innovation in the academic library—the university librarian's viewpoint."[8] The author hopes this research adds to the discussion. Within the ten-question survey, several questions focused on closely related topics, and thus the questions and answers will be discussed in clusters below.

Questions 1–3

The first three questions of the survey focused on trying to better define or encapsulate what is meant by innovation, and more specifically, innovation with a critical underpinning or utilization of technology. These questions were intentionally placed first in the survey, prior to the subsequent questions, several of which focused more on specific examples of products or services that could exemplify a technological innovation.

> **Question 1**. Below are several words or short phrases, in alphabetical order, which are often associated with the word "innovation." Please select up to three choices which you feel best "capture the essence" or most resonate with you when you think about technology-focused innovation within the research library community.

As shown in figure 3.1, *all* word choices were selected at least once. The most frequently chosen words and phrases were *creativity, agility, experimentation,* and *value-added*. The least selected words and phrases were *adapt, different, efficient, first, game-changer,* and *survival*—each of these was selected just once among all the respondents. Research from Baregheh, Rowley, and Sambrook identified additional words associated with *innovation*, including *idea, invention, superior, improve, development, commercialization,* and *success.*[9]

The second question asked for thoughts on why selected words from the initial question resonated with the responder and offered the chance to provide additional single words or short phrases that came to mind when thinking about technology-focused innovation:

> **Question 2**. Please provide a sentence or two about why the selected words/phrases above resonate with you when thinking of the word "innovation." Also, if there are other words or phrases, not listed above, that quickly jump to mind or resonate with you when thinking about technology-focused innovation, please list those words.

Respondents provided several additional words and phrases, including *active, better, creative leap, customization, moving forward, needs-driven, new solutions, pioneering, purposeful, thinking outside the box,* and *uniquely relevant.*

Respondents provided additional comments, some of which are listed below (and in some cases slightly paraphrased for clarity):

- "Innovation is about moving forward. Some of that must be done in an agile environment. Progress delayed is often progress denied. Innovation takes us out of our comfort zones, it is disruptive by nature. There needs to be room for creativity in the work of innovation. Experimentation is vital to exploring the possibilities. Great innovation results in efficiencies and value-added deliverables."

Answer		Response	%
Adapt		1	4%
Agility		7	29%
Ahead of its time / Before its time		4	17%
Better/Best		2	8%
Change		5	21%
Creativity		11	46%
Cutting-edge		2	8%
Different		1	4%
Disruption		4	17%
Efficient		1	4%
Experimentation		8	33%
First		1	4%
Game changer		1	4%
Initiative		4	17%
New/Novel		2	8%
Proactive		3	13%
Push boundaries		2	8%
Risk		5	21%
Survival		1	4%
Value-added		6	25%
NONE of the words above resonate with me when I think of "innovation"		0	0%

Figure 3.1
Responses to question 1 of the survey

- "Innovation means to me an opportunity to go where this Library hasn't gone before."
- "I also think of the term pioneering when thinking of innovation. We are like pioneers breaking new ground. It is important to experiment, take risks, and, on occasion, fail. So I would also add failure to the list."
- "I think of innovation as 'thinking outside the box' or exploring new questions or new ways to use technology to explore old questions."
- "Two other words: customization and needs-driven. When I think of innovation in libraries it is usually because we need to get something accomplished and we do not see any way to do it using readily available services or products. We want to move more quickly and have more customization than if we wait for marketplace solutions; we want something uniquely relevant to our campus or our type of collections/resources/areas of strength."
- "Agility and experimentation should lead to improvements in our ability to build and buy systems designed to meet our primary mission to support research, teaching, and learning."
- "I think libraries are willing to take risks and adapt to change in order to improve their services. I think the idea that there will be significant savings has been in large part a myth. So I picked value-added."
- "Innovation is about making that creative leap that finds new solutions to old issues, more efficient ways to provide services and resources, and—best of all—seeing previously unseen needs and finding good ways to meet them."
- "To me innovation is an anticipation of the next thing, which will be disruptive, and will need creativity to solve. It is a problem solving exercise from identification to solution. And it has to be fast/nimble and all those good things!"
- "I think of innovation as introducing change, as experimenting, and possibly being ahead of its time. Truly new."
- "Innovation has to be purposeful and active. I chose the words most closely aligned with that."
- "An innovation is something which is perceived to be new and different and which triggers change."
- "The words I selected resonate with me because I assume that they are related to a user-focused mission. So, the other words that come to mind for me are mission-critical innovation."

Some comments also provided a few notes of caution, some checks and balances when considering innovation, and what it means to be innovative:

- "I do not think that innovation for its own sake is a positive. My choice of adjectives reflects my belief that innovation that improves in the core mission of research libraries, some aspects of which are of enduring value, is a good thing."
- "I worry that we tend to see innovation as an end, rather than the means to an end. Innovation does us no good unless it increases the value that we provide to our institutions and our patrons. I believe that it's important to be innovative, but what really matters is being better."
- "We don't make change for change's sake, but instead to improve efficiency and to show users that we are trying out tools that will allow them to be more creative."
- "A lot of technology implementation is about experimenting with new technologies in order to hopefully provide a value-added service. This is inherently risky."

The third survey question listed six definitions for the word *innovation* (the same definitions listed in the preceding chapter), and asked respondents to choose up to three that seemed to resonate most with them when thinking about technology-focused innovation:

> **Question 3.** Below are several definitions of innovation, ordered by date. Please select up to three definitions which you feel best "capture the essence" or most resonate with you when you think about technology-focused innovation within the research library community.

Figure 3.2 provides responses. *All* responses to this third question were selected at least four times, but two in particular were selected most often—each selected by 54 percent of the respondents. A similarity in both of these top responses is that they specifically mention how innovation improves the customer or patron experience.

As noted in the preceding chapters, there are many definitions for *innovation*. In a Google *Think Quarterly* article, some "next-gen innovators" provided their thoughts about innovation:

- "Great innovation makes my customers' lives easier, inspires and motivates my colleagues, drives the bottom line and differentiates my business from those around it."[10]
- "Innovation is the freedom of creativity. It's about understanding the actual possibilities of what you're able to do."[11]
- "I think it's taking the ideas that you have in your head and finding a way to make it a reality. . . . I feel like having an idea and running into a wall, reinventing it and running into a wall, then reinventing it again, is what innovation is."[12]
- "Innovation is about persuasion; people tend to focus less on the actual invention or solution they are proposing, and more on trying to change the way people perceive it. It's about social binds."[13]
- "Innovation is taking what's existing and creating a new and effective use for it."[14]
- "[Innovation] means re-booting your brain. It's kind of a skill—or an attitude maybe—to constantly question and redesign the truth about the things you know, because with innovation, by definition, you have to leave something behind."[15]

Citing earlier work by Daft and Damanpour, Jantz, in his study involving ARL academic library leaders, used this definition of *innovation*: "the introduction into the organization of a new product, a new service, a new technology, or a new administrative practice; or a significant improvement to an existing product, service, technology, or administrative practice."[16] Through his discussions with library leaders, several additional definitions emerged:

> [Innovation is] the ability to raise new questions and to organize the resources around trying to answer those questions. . . .
>
> Several saw innovation as a synthesis that develops by looking externally, seeing what's out there, analyzing the pieces, and bringing these pieces back together in new and different ways. . . .
>
> Another respondent defined innovation as the making of something new, at least to the institution.[17]

West and Farr define *innovation* as "the intentional introduction and application within a role, group or organization of ideas, processes, products or procedures, new to the relevant unit of adoption, designed to significantly benefit the individual, the group, the organization or wider society."[18] Rogers notes, "An innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption."[19] Baregheh, Rowley, and Sambrook's research notes several additional definitions.[20]

Questions 4–5

Eric Schnell comments, "To move toward a more innovative organization requires experimentation, trial and error, doing new things, and breaking rules. Libraries

Answer		Response	%
"A process that includes the generation, development, and implementation of new ideas or behaviors. Further, innovation is conceived as a means of changing an organization, either as a response to changes in the external environment or as a preemptive action to influence the environment. Hence innovation is here broadly defined to encompass a range of types, including new products or services, new process technologies, new organizational structures or administrative systems, or new plans or programs pertaining to organizational members." (Damanpour, Fariborz. "Organizational Complexity and Innovation: Developing and Testing Multiple Contingency Models." Management Science, Vol 42:5, May 1996, p.694)		7	29%
"The embodiment, combination, and/or synthesis of knowledge in novel, relevant, valued new products, processes, or services." (Leonard, Dorothy, and Walter Swap. When Sparks Fly: Igniting Creativity in Groups. Boston: Harvard Business School Press, 1999, p 7)		6	25%
"Things that change the way we can do what we want to do; [things that] have added value to our daily lives . . . new, desired, or needed services that add value for university faculty, students, and other scholars . . . Innovation is more significantly about what our target audience can do—about the increased capacity of library users to do what they want and need to do in the way that most benefits their productivity, pleasure, and excellence . . . Facilitating the work of our primary constituents in ways that are new and useful to them." (Deiss, Kathryn. "Innovation and Strategy: Risk and Choice in Shaping User-Centered Libraries." Library Trends, Vol 53:1, Summer 2004, pp 18-19)		13	54%
"Innovation is the multi-stage process whereby organizations transform ideas into new/improved products, service or processes, in order to advance, compete and differentiate themselves successfully in their marketplace" (Baregheh, Anahita, et al. "Towards a Multidisciplinary Definition of Innovation." Management Decision, Vol 47:8, 2009, p 1334)		7	29%
"An innovation is a change, in a product, service, process or, more widely, an organization." (Rowley, Jennifer. "Should Your Library Have an Innovation Strategy?" Library Management, Vol 32:4/5, 2011, p 253)		4	17%
"A wise person once told me that innovation isn't just about doing things that are new or different; it's about doing things that in the eye of the beholder (the user, patron, or customer) meet a need that may not have been appreciated before. Innovations are the things that truly alter and improve how we do things; they may even shift our proverbial paradigms." (Kaser, Dick. "Editor's Notes: Innovation Can Be Fun." Computers in Libraries, Vol 31:5, June 2011, p4)		13	54%
NONE of the definitions listed above resonate with me when I think about technology-focused innovation		0	0%

Figure 3.2
Responses to question 3 of the survey

looking to become more innovative are confronted with reality: it takes 100 crazy ideas to find 10 worth funding experimentally in order to identify 1 project worth pursuing. As it has been said, it takes a lot of acorns to grow an oak tree."[21]

The next two survey questions sought insights on what factors, at the start, influence the decision on whether to pursue a particular technology-based innovation. Such a decision is made challenging by finite resources, rapid technology changes, new modes of pedagogy and delivery, and a rapidly evolving student experience and associated set of student expectations. "What is certain is that college and university librarians are continuously challenged to understand the dynamic information needs of incoming students, each cohort ostensibly clearer in its penchant for

Answer		Response	%
It's something that could be considered "groundbreaking," "radical," or "revolutionary" (as opposed to an incremental innovation). It is something new to libraries or the profession, it is indeed a "first."		6	25%
It is a service or technology which could positively impact patrons and whose chief goal is to empower patrons and make their lives easier (as opposed to, for example, making a staff process more efficient).		22	92%
Its impact can be measured or assessed.		7	29%
It's something staff could leverage into scholarship and share with peers, to broaden awareness to the larger library community.		5	21%
The request for the service or technology came from someone in power outside the library (e.g., a provost or president; someone with significant influence who doesn't administratively belong in the library).		3	13%
It has what you consider strong ties to your institution's higher education goals, mission, or strategic plan.		21	88%
The costs to the library in terms of staff time to research / implement the innovation can be fairly accurately estimated at the beginning.		1	4%
The costs to the library in terms of potential needed hardware / software / service agreements associated with the innovation can be fairly accurately estimated at the beginning.		1	4%
NONE of the statements above impact my decision on whether to pursue a particular technology-based innovation.		0	0%

Figure 3.3
Responses to question 4 of the survey

digital media, mobile and social technologies, ubiquitous internet access, collaborative and multitasked learning, and technology integration in the classroom."[22] Question 4 listed eight possible factors that influence the decision to pursue an innovation and asked respondents to choose the three most important considerations. Question 5 asked if there are any other major factors, not listed, which the respondents felt are especially important when judging whether or not to pursue and implement an innovation. Rogers notes, "The innovation-decision process is essentially an information-seeking and information-processing activity in which an individual is motivated to reduce uncertainty about the advantages and disadvantages of the innovation."[23]

> **Question 4.** Below are several statements that could impact a decision, at the start, on whether to pursue a particular technology-based innovation. Please choose up to three of the most important items to consider when reviewing or judging for approval a potential innovation for research/application/implementation at your library.

All choices received at least one response, but two choices were selected far more often than the others. Chosen by 92 percent of the respondents was "It is a service or technology which could positively impact patrons and whose chief goal is to empower patrons and make their lives easier (as opposed to, for example, making a staff process more efficient)." Chosen by 88 percent of respondents was "It has what you consider strong ties to your institution's higher education goals, mission, or strategic plan." Overall responses are shown in figure 3.3. Figure 3.4 illustrates three important questions to ask when considering innovation: "What is possible with technology?" "What is desirable to users?" "What is viable in the marketplace?"[24] As Deiss notes, "If innovation is about creating public value and customer success, strategy creation is about information gathering in relation to the environment (trend information, customer pattern information, customer need and readiness information, etc.). It is about assessing the political landscape and choosing where to put energy and effort (resources). Most importantly, it is about the generation of a multiplicity of perspectives; in effect, strategy creation is about deciding how, when, and where to innovate and for whom."[25]

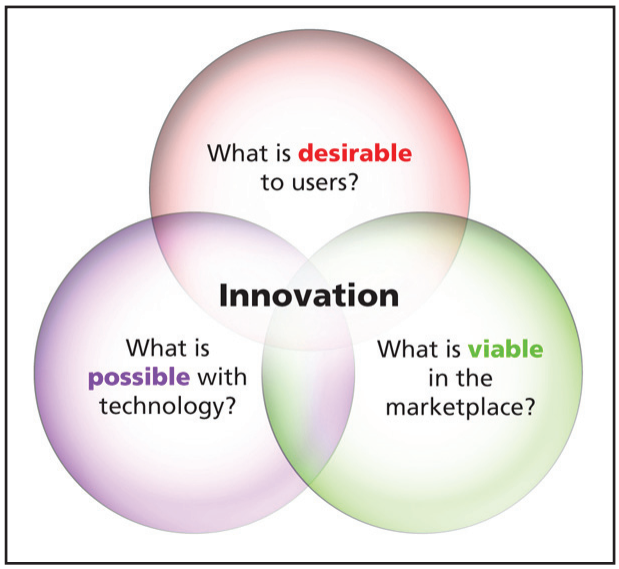

Figure 3.4
Questions to ask when considering innovation

> **Question 5**. Are there other major factors, not listed above, which you feel are especially important to consider when reviewing or judging a potential innovation for research/application/implementation at your library?

Survey participants provided several responses, some of which appear below, directly or slightly paraphrased:

- "The value of the innovation, which can often be quantified, should also be considered. So the institution should also consider the cost of NOT doing this project."
- "A completely new approach that makes internal practices more efficient and/or cost effective."
- "Cost prediction is important but needs to be put into perspective in decision-making on any particular initiative. Another issue is potential partners who could be engaged at the beginning or along the development path."
- "The proposal to do so is well documented and defended; it addresses possible partners (both within and beyond the organization); and it has been vetted by my management team."
- "The project has a champion—someone who's passionate about it, is known to be a good project manager, and willing to see it through."
- "We need to think at the largest scale possible, not making decisions on the basis of local optimization."
- "A very important factor is whether it will help us do something we need to do anyway, or leapfrog in an existing service strategy—that is, I would not choose to innovate in a direction that is not something envisioned in our strategic plan, or a direction in which we have zero expertise or experience."
- "Alignment with strategic directions; whether it generates efficient and more effective ways of working and/or delivering service."
- "Making staff workflows more efficient is a worthy objective as well. I would rank it as less important than making our patrons' lives easier, but still important."
- "Selection of innovations can come through experimentation, as well as by determining what other leading organizations are doing. The goal is not newness for the sake of newness, but meaningful change in the ability of the organization to deliver value either internally to staff or externally to patrons."

In her research findings, Booth discusses factors to consider when evaluating new tools and their capability with the library's service environment and goals.

> Social viability. Is the popularity of the tool or application in question rising or falling? . . . By virtue of their competitive nature, brand preference and competition among social tools in particular should factor into their evaluation in a library context.
>
> Technology disruption. To what extent has the technology been socially adopted, and how does this affect its viability as a library service. . . . A calculated assessment of future adoption potential should be made.
>
> Long-tail limitations. Early library technology adopters comprise small but enthusiastic niche markets for a variety of emerging services. . . . While a niche technology service may be highly appreciated by a small subset of users, this may not provide an acceptable rate of return on the staff time and other resources required to support it. The evaluation criteria of any pilot project should consider unacceptable levels of use.
>
> Convenience of integration. How seamlessly does the library technology in question integrate into the personal or academic learning environments of different students (social network, web browser, or learning management system)?
>
> Library awareness and information need. Higher library use results in greater receptivity to library technology innovation. . . . Libraries should anticipate that the most enthusiastic users of emerging technology library services

will represent a small minority of the overall patron population, but that marketing and outreach efforts can still extend the reach of the library long tail.[26]

Questions 6–9

Questions 6–9 sought to clarify perceptions of innovation indirectly—by having respondents measure or rate the degree of innovation for a long list of technologies either commonplace in libraries today or currently attracting a lot of attention in libraries. In addition, the questions asked respondents to provide some thoughts as to why some items they chose seemed particularly innovative and, if they felt some items were not innovative whatsoever, to provide some thoughts as to why not. This was a particularly interesting segment of the survey, for the answers help illuminate what is perceived as innovative through examples the author and readers can relate to.

Question 6 was the longest question on the survey. It provided thirty-two items (hardware, software, or combinations thereof) that *could* be considered innovative and asked respondents to rate on a ten-point scale how innovative they thought each particular item was:

> **Question 6**. Below are items, in no particular order, that could be considered "innovative." Try to keep in mind that some of these items, which might now be considered commonplace, could have been considered innovative when they debuted. Please rank each item on the sliding scale from 0 to 10 in terms of how "innovative" you think the technology is (or was, if the technology has been "out" or "in use" for a long time). Please approximate the degree to which you feel the particular item is/was technologically innovative for libraries and the services they provide. On the sliding scale, a 0 represents an item you feel is not innovative whatsoever, while a 10 represents something extremely innovative. Items rated below 5 could signify a minor or lesser innovation of value to the research library community; items rated above 5 could signify a major innovation of value to the research library community. If you are unfamiliar with any particular item and are thus unable to provide a rating, please mark the "not applicable" check box for that item. Also note, you can choose to skip any or all item(s) below and choose not to answer in any way.

The possible items listed all had a significant technological component; without this, the item or service would not exist. Some items were older technologies, such as proxy servers and wireless networking; others were more recent technologies (at least from a library standpoint), such as hackerspaces and the development of iOS or Android library-related apps. The majority of items were not library-specific and were initially developed outside of the library environment (e.g., social media applications, QR codes, RFID). At the other end of the spectrum, some items were closely related to libraries, such as Web-scale discovery services, new library services platforms, and patron-driven acquisition services.

To elaborate briefly on items with a strong technological component that librarians may consider innovative, the following examples were noted by ARL library leaders in Jantz's study: faceted browsing in OPACs, institutional repositories, publishing e-journals, shared digital repositories, streaming video to classrooms, creating new library services [some or many of which might have a strong technology component], and mass digitization.[27] An ACRL 2007 National Conference panel presentation shared results from a survey titled "Nine Questions on Technology Innovation in Academic Libraries." At that time, "Recent technology innovations in the library included blogs, wikis, RSS feeds, IM reference, and digitization projects," and "The most disruptive technology for academic libraries today is 'Web 2.0' or Social Computing technologies with Google/Google Scholar coming up second."[28] In Booth's research published in 2009, some emerging technologies (in this case, emerging social tools) noted were Second Life, search alerts, wikis, web-based IM, podcasts, Skype, text messaging, Twitter, blogs, Facebook, Myspace, browser toolbars, and mobile browsing.[29] In January 2013, LITA and ALA's Office for Information Technology Policy "recognized five libraries for offering cutting-edge technologies in library services. . . . The recognition . . . showcase[d] libraries that are serving their communities using novel and innovative methods."[30] The services included mobile digital learning tools, an augmented reality app for mobile devices, an open source software tool to create online interactive tutorials, a mobile-optimized website for accessing government and nonprofit public assistance, and a service allowing multiple school districts to pool resources and improve access to digital content.

Results for question 6 are provided in figure 3.5 and are quite interesting. Here are a few observations:

- On the ten-point scale, average values ranged from a low of 3.88 for "Library presence within a virtual environment (e.g., Second Life) or a social media venue (e.g., Facebook, Twitter, Pinterest, Flickr)" to a high of 6.17 for "Web Scale Discovery services which index content to a far greater degree than a traditional OPAC—to the article or

item level (e.g., Serials Solutions Summon, EBSCO Discovery Service, Ex Libris Primo Central)."
- Items with the lowest standard deviation were "Creation of web based multimedia (audio, video) instruction sessions, library tours, FAQs, etc." at 2.17 and "Use of QR Codes for some library function or service (e.g., to link a physical item to a digital equivalent; to help users navigate library stacks, etc.)" at 2.20. Items with the highest standard deviation were "A wireless network providing coverage to the majority or entirety of a library" at 3.64 and "Use of APIs to enhance a service or information resource at the library (e.g., to pull and display external book covers in a library catalog; to pull and display bibliographic metadata from external sources into a library catalog record display; etc.)" at 3.55.
- Of the 32 listed items, 20 were given a 10 rating by at least one respondent. Of the dozen remaining items, all netted at least one rating of 8 or higher. At the other end, of the 32 items, 11 items were given a 0 rating by at least one respondent. Six items received no ratings of 0 or 1; they were given at least a rating of 2 by all respondents.
- The range of ratings was large for all items. Nine items had a range of 10, eight items had a range of 9, eleven had a range of 8, and four items had a range of 7.

Questions 7 and 8 continued with a focus on the thirty-two listed items, asking for further thoughts.

> **Question 7**. Of all the items from the previous question, please select up to three of the items and provide a few thoughts as to why you think the items are "innovative" (and regardless of whether you think it's a "major" or a "minor" innovation).

Several directors responded, providing both specific technology examples, as well as sharing some further general thoughts about innovation. Specific technologies referenced in the free text comments included:

- web/data analytics (4 mentions)
- augmented reality (2)
- cloud computing (2)
- data visualization (2)
- patron-driven acquisition (2)
- publishing assistance/new kinds of scholarship (2)
- makerspaces (2)
- chat reference (1)
- recommendation capabilities (1)
- Espresso Book Machine (1)
- open access (1)
- remote access (1)
- Web-scale discovery (1)
- APIs (1)
- Wi-Fi (1)

However, the richness of the comments goes beyond the mention of specific technologies. Comments, some slightly paraphrased, appear below; the initial half of comments include references to a particular item or items, the latter half speak more to innovation in general, without referencing a particular technology. Many comments make reference to the importance of innovation as adding value to the user or driven by user needs.

- "I suppose it is a measure of the advance of technology that I feel all of the above items are about equally innovative. The makerspace idea seems the newest, but newness and innovation are not always the same. But it is new and creative."
- "Hackerspaces/Makerspaces change the relationship between the patron and the library—the library provides physical infrastructure but the patrons create within the library's space. Using APIs reshapes the relationship between the library and its technology users—allows outside developers to reimagine how to access library services. Use of recommendation capabilities surfaces patron and library expertise and activity, allowing the use of the library to go beyond simply searching for matching items."
- "Patron-driven acquisition is innovative because it uses new technology to massively increase the amount of information available to patrons, and also broadens the library's traditional role to include selling as well as lending. The Espresso Book Machine is particularly innovative because it combines patron-driven principles with the capability of creating print volumes on demand, creating an unprecedented breadth of opportunity for patrons. Migrating library functions to the cloud is innovative because it radically subverts many of what we once considered core library functions."
- "Patron-driven acquisitions—potentially radical change in how we think about and plan for collection development. Augmented reality—truly new both technologically and 'socially,' the idea of entering a new [virtual] environment to discover and manipulate research resources. Web-scale discovery—impressive potential to integrate very diverse resources, varying methods of delivery, promote new consortial and vendor-partnered business models, all at the same time."
- "In terms of innovation that sticks, making wi-fi available to everyone on our premises, chat reference and providing seamless and secure remote access to our catalogs and licensed materials have been outstanding examples of innovation."

Figure 3.5
Responses to question 6 of the survey

Answer	Min Value	Max Value	Average Value	Standard Deviation	Responses
Library presence within a virtual environment (e.g., Second Life) or a social media venue (e.g., Facebook, Twitter, Pinterest, Flickr)	0.00	10.00	3.88	2.59	24
Reference service beyond face to face or email reference interactions (e.g., virtual delivery of services—video reference, instant messaging, texting, etc.)	1.00	9.00	4.87	2.82	23
Creation of web based multimedia (audio, video) instruction sessions, library tours, FAQs, etc.	1.00	8.00	4.57	2.17	23
Gaming/gamification of something library related (e.g., a game that helps students learn call numbers and book locations in the library)	1.00	9.00	5.05	2.61	22
Hackerspaces/Makerspaces (Wikipedia: "Hackerspaces can be viewed as open community labs incorporating elements of machine shops, workshops and/or studios where hackers can come together to share resources and knowledge to build and make things." http://en.wikipedia.org/wiki/Hackerspace; retrieved March 19, 2013). Such places could include items like a 3D printer and/or other sophisticated and controlled tools, which help build a completed physical object or representation from electronic data.	0.00	10.00	6.09	2.72	22
Espresso Book Machine	2.00	9.00	5.27	2.43	22
Authentication/authorization system allowing for off campus access to library or campus licensed information resources (e.g., a proxy server, a VPN, a single sign-on solution allowing remote access, etc.)	0.00	10.00	5.43	3.00	23
Mobile Library App (e.g., iOS or Android app—a program as opposed to a website) related to some service, function, or information resource associated with the library, whether for users at large or a particular group of library clientele	1.00	10.00	5.26	2.45	23
Mobile library website (a site specifically designed and discrete from a primary library website)	1.00	10.00	5.18	2.36	22
Migrating library related applications which were once traditionally physically hosted at the library or campus into the cloud environment (e.g., Amazon Web Services/Elastic Compute Cloud)	0.00	10.00	6.09	2.27	23
Web Scale Discovery services which index content to a far greater degree than a traditional OPAC—to the article or item level (e.g., Serials Solutions Summon, Ebsco Discovery Service, Ex Libris Primo Central)	1.00	10.00	6.17	2.52	23
New "library services platforms" engineered to replace the more traditional integrated library system (e.g., OCLC Worldshare Management Services; Serials Solutions InTota)	2.00	10.00	5.15	2.35	20
Use of open source software to support a library service or function (e.g., using Drupal or another open source content management system for the library website; an open source ILS; an open source ERM; etc.)	2.00	10.00	5.91	2.41	23
Use of QR Codes for some library function or service (e.g., to link a physical item to a digital equivalent; to help users navigate library stacks, etc.)	0.00	8.00	4.13	2.20	23

Figure 3.5 (continued)
Responses to question 6 of the survey

Answer	Min Value	Max Value	Average Value	Standard Deviation	Responses
Using augmented reality in an application/interface related to a library service or created by library staff (e.g., the Wolfwalk app from NCSU, www.lib.ncsu.edu/dli/projects/wolfwalk)	0.00	9.00	5.24	2.81	21
Circulation of mobile devices to library patrons (e.g., laptops/tablets/Kindles/etc.)	1.00	9.00	4.13	2.46	23
Use of APIs to enhance a service or information resource at the library (e.g., to pull and display external book covers in a library catalog; to pull and display bibliographic metadata from external sources into a library catalog record display; etc.)	0.00	10.00	5.04	3.55	23
A wireless network providing coverage to the majority or entirety of a library	1.00	10.00	4.95	3.64	22
Engagement and assistance with campus faculty in the publication / discovery of faculty scholarship (e.g., hosting an institutional repository; providing broker / liaison services to help faculty use an online publishing digital press; etc.)	0.00	10.00	5.55	2.63	22
Use of blogs, wikis, and/or RSS feeds for part or all of a library's primary website.	1.00	10.00	4.48	2.21	23
A patron driven acquisition platform for physical monographs and/or ebooks involving technology infrastructure (e.g., such a system may have virtual records in a library catalog, which a patron can request the library acquire)	1.00	9.00	6.05	2.42	22
Use of RFID (e.g., for tracking / circulating monographs and/or other library assets)	1.00	9.00	4.62	2.58	21
Use of digital signage/ wayfinding within your library (displaying items such as library maps, schedules, daily events, special notices, etc.)	1.00	8.00	4.50	2.30	22
Use of an online e-commerce system, accepting payments (e.g., credit card, PayPal) for one or more services / functions at your library (e.g., payment of fines; payment for photo reproductions; etc.)	0.00	10.00	4.27	2.91	22
Use of smartboard technology in some area of the library (e.g., group study room; meeting room; instruction room), which allows students or librarians to interact with onscreen information in different ways (e.g., mark up documents to show other members in a group)	1.00	10.00	4.48	2.63	23
Extensive integration of library related information / resources into an enterprise course/learning management system	2.00	9.00	4.91	2.48	23
Use of video conferencing for purposes such as virtual committee meetings, interactions with vendors, patron instruction sessions, etc. (e.g., Cisco Webex; Skype; etc.)	0.00	10.00	4.57	2.57	23
Implementation and use of VoIP and the capabilities it provides (e.g., voicemail forwarded to email accounts; collapsing the traditional phone network into the single data network; etc.)	0.00	10.00	5.14	2.95	22
Use of tablets / iPads among library staff, in support of library operations / other work related productivity	2.00	10.00	4.91	2.56	23

Figure 3.5 (continued)
Responses to question 6 of the survey

Answer	Min Value	Max Value	Average Value	Standard Deviation	Responses
Extensive use of web analytics to better understand how patrons are using and interacting with the library website, and to inform future website design	2.00	10.00	5.77	2.43	22
Use of data visualization software tools (above and beyond Microsoft Excel) to help analyze and display data or to show relationships between data (e.g., library statistics, library transaction data, etc.).	1.00	10.00	6.05	2.52	21
Use of recommendation capabilities/features which library patrons interact with to help inform other users of the same system. Example: allowing library patrons to rank / recommend items found in library discovery systems (e.g., library catalog, library digital collections system)	1.00	9.00	5.43	2.52	23

- "Data visualization software—new way of looking at the world or data web analytics—user based assessment tool publishing assistance—we are in the business of knowledge creation in partnership with our patrons."
- "Augmented reality, data visualization, and data analytics strike me as the most innovative. They focus on the use of data/information by library users as well as by the library."
- "Using web analytics to understand what users want is ideal. We can think up all kinds of cool innovations, but if it isn't useful to the user, what is the value? User expectations continue to rise, particularly in the digital environment. Products are becoming more and more customized for the user. In this environment, we need to continually develop expertise in understanding what the user wants and delivering that experience as it continually changes."
- "I don't think of most of these things as innovative—they've been done, and for years now, at many libraries (including mine). I do think that the use of web analytics (and other assessment techniques such as ethnographic research) that help us deeply understand user behavior and needs (and I'm not talking about LibQUAL and that sort of thing) are important innovations and really underutilized at most libraries."
- "Open access in all its iterations will be a big part of our innovative future."
- "Items related to engagement with new kinds of scholarship and publication are fundamentally innovative for libraries. They represent new roles within universities."
- "I have ranked highest those innovations that have delivered greater access and flexibility to clients."
- "I realize that I have assigned higher importance on the scale to things we are in the process of doing, rather than things we already have in place—interesting to understand one's own definitions. In a year, I will probably assign things we are in the process of doing a lesser value on an innovation scale."
- "The items I rated highly are game changers and provide us with capabilities going forward that can influence the way we work and serve our various clientele."
- "Significant innovations tend to allow new ways of interacting with users, and new ways of discovering and/or interacting with information resources. For research libraries, in my view, innovation is still driven by saving the time of the user, and making the right materials available to users at the point of need—investments in innovation should be tied to mission as opposed to technologies themselves."
- "There are things we do fairly traditionally, in other environments, that Librarians seem to think are innovative, but really are not new in higher ed. We seem to be 'throwing spaghetti at the wall, and looking to see what sticks.' I want my innovation to be more directed. This colored my responses. I want our innovations to be user driven, most especially from my faculty."
- "Innovative should be considered innovative by the general university community, not just by libraries and librarians. I selected the three which I felt would resonate best with the general university community."

Question 8 asks about the other end of the spectrum—seeking insights on items that the respondent thinks are not innovative:

> **Question 8**. Some items from the previous question you may consider NOT to be innovative, regardless of whether you feel they may

or may not be of value. If there are any items above which you feel are not innovative or only marginally innovative, could you please choose up to three of the items and provide a few thoughts as to why you think the items are not "innovative."

Several directors responded, offering both specific technology examples, as well as sharing some further additional thoughts about innovation. Specific technologies referenced in the free text comments included

- QR codes (2 mentions)
- videoconferencing/online reference and chat (2)
- web-based multimedia instruction (2)
- Wi-Fi (2)
- Espresso Book Machine (1)
- laptop/mobile device circulation (1)
- mobile device use by staff (1)
- Second Life–type projects [virtual worlds] (1)
- RFID (1)
- use of open source software (1)
- VoIP (1)

It's interesting to note that chat reference, Wi-Fi, and the Espresso Book Machine appear in both lists—the first asking for technologies deemed innovative; the second asking for technologies not deemed innovative. This helps highlight the diversity in opinion. Once again, for this question asking about technologies not deemed innovative, there are additional perspectives shared about innovation above and beyond particular technologies. Some of these comments, in some cases paraphrased, are provided below:

- "QR codes are easy to use. They strike me as ugly and trendy. I don't see young people using them a great deal, but they are so easy to create that it is worth using them. If they go out of style in a couple of years, there is no huge investment lost."
- "QR codes, wireless, RFID."
- "Many of the items listed, including the use of web 2.0, apps, QR codes, and RFID would have been innovative a few years ago, but are now pretty obvious necessities for a library to operate. They are operational now in many libraries."
- "Second Life type projects, white elephants such as Espresso book machines and the circulation of laptops or mobile devices are better scene [sic] as transitional or passing fancies."
- "There is nothing innovative about using VoIP and videoconferencing in libraries. The application of these technologies in libraries is no different than it is in any other institutional context. The same goes for creating web-based multimedia instruction. All of the above are bandwagons onto which libraries jumped after others built them—and there's absolutely nothing wrong with that."
- "I gave lower rankings to things we have already done, such as giving our staff an array of mobile devices to work with several years ago."
- "Library instructional videos and online reference/chat. These are not innovative, have been around a long time."
- "Open-source software for web sites—we've been doing 'open source' since computers were new in 1975, it just wasn't called that. Wireless networks—we had to do them, and they are more convenient than wired networks, but the impact is not all that different in actual services. It just costs less to cover a wider area."
- "Use of existing technologies in a library setting is not very innovative."
- "Many of the items are not innovative—they've been repeatedly done."
- "Some items refer to technologies that libraries only use because they have become commonplace. They are no more innovative than any mechanical tool that is improved over time."
- "I rank the use of technology to make our current services and activities easier and more efficient as less innovative. Efficiency is good but it is not the same as innovation."

A few common themes are apparent from the comments. One is the concept of "newness." The first question on the survey—asking respondents which words and phrases they felt captured the essence of innovation—had several words or phrases tangentially if not directly related to this concept—*ahead of its time/before its time*, *cutting-edge*, *first*, *new/novel*, and perhaps a few others. That said, with the exception of *ahead of its time*, most of these words and phrases connoting "new" weren't selected as often as several of the other choices. Bell notes, "I had considered writing a post to question if academic libraries are actually innovative at all. Yes, we harness a number of relatively new technologies to deliver a new service, but does that qualify as innovation? Perhaps we are confusing something new with something innovative. . . . Perhaps arguing over whether a new library service is truly innovative or simply something new sounds like splitting hairs. After all, what's the difference between the two. If you introduce something new in your library, wouldn't we all agree that is what innovation is all about?"[31] In much of the literature as well as within the survey comments, the concept of "newness" seems significant. As noted by Deiss, "Rather than being defined as something 'new to us,' innovation in the public sector must be about facilitating the work of our primary constituents in ways that are new and useful *to them.* It does not matter how innovative libraries are in creating their organizations if they do not produce innovative services, processes,

and products for their clientele—library users."[32] Jantz remarks that in his research, one ARL library leader (of six interviewed) "defined innovation as the making of something new, at least to the institution, and said that innovation needs what he called 'private space' to flourish. Individual characteristics that were cited as important included the creation and sharing of new knowledge, being entrepreneurial, and trying to penetrate new markets."[33] Rogers notes, "It matters little, so far as human behavior is concerned, whether or not an idea is 'objectively' new as measured by the lapse of time since first use or discovery. The perceived newness of the idea for the individual determines his or her reaction to it. If an idea seems new to the individual, it is an innovation."[34]

As noted by Dewar and Dutton (citing earlier researchers), "We define an innovation as an idea, practice, or material artifact perceived to be new by the relevant unit of adoption."[35] As Rowley notes, "Successful innovation is dependent upon making an effective link between both the innovation process and its outcomes that is appropriate for the organization at a specific point in time."[36] Indeed, the term *innovativeness* can be defined as "the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than other members of a system."[37] Today's students—"Net Gen" or whichever label one wishes to apply—keep things interesting: "For the Net Generation, technology is 'what's new,' and the time between new and old can be quite brief when viewed from a perspective other than the Net Generation's."[38] That said, the author had to smile during a recent walk in the library, when he overheard a conversation between two students huddled around a MacBook Pro: "I think this is one feature where Apple is too advanced."

Another theme apparent from responses to question 8 as well as to several other questions is the concept of disruptive (or radical) versus incremental innovations. In innovation theory, these words are often used. As noted by Rowley, "In terms of newness, a common differentiation is that between incremental innovations and radical innovations."[39] At least in the minds of some respondents, judging from their comments, incremental innovations—improvements on existing technologies—should not be considered examples of innovation. By design, the author did not use these words ("incremental" and "disruptive" / "radical") in phrasing the questions, though question 6 did use the categorizations of "major" and "minor." In defining radical and incremental innovations, and citing earlier researchers, Dewey and Dutton note:

> Radical and incremental describe different types of technological process innovations. Radical innovations are fundamental changes that represent revolutionary changes in technology. They represent clear departures from existing practice (Duchesneau, Cohn and Dutton 1979; Ettlie 1983). In contrast, incremental innovations are minor improvements or simple adjustments in current technology (Munson and Pelz 1979). The major difference captured by the labels radical and incremental is the degree of novel technological process content embodied in the innovation and hence, the degree of new knowledge embedded in the innovation. . . . Although radical and incremental pertain to distinctions along a theoretical continuum of the level of new knowledge embedded in an innovation, the middle values of this continuum are difficult to interpret. . . . The distinction between radical and incremental innovations is easier to intuit than to define or measure.[40]

Jantz notes, "Radical innovations represent a clear departure from existing practice whereas incremental innovations are more routine and support existing practice,"[41] and, touching on some particular technologies (or services with a strong technology backbone), further reflects:

> Within the last few years, instant messaging and mobile technology have been embraced by research libraries to augment reference service and to deliver Web services on the technology platforms that students prefer. A variety of similar incremental innovations have been launched to take advantage of mobile technology. For example, a student can use her smartphone to scan QR (quick response) codes, resulting in a transfer to special library services. From these early incremental innovations, we are likely to see the cycle progressing to more radical innovations in which digital books from the library collection are delivered on modern platforms using iPADs and similar devices.[42]

In looking back over significant technologies of the past forty years, Michael Eisenberg and Sean Fullerton note the following: the 8-bit microprocessor, Atari video game system, TCP/IP, World Wide Web, Wi-Fi, Google, iPod, Facebook, YouTube, Twitter, iPhone, iPad, and Kinect, stating "These and related technologies have profoundly affected the nature of human interaction, productivity, commerce, creativity, and recreation."[43] This quote sounds like a very accessible definition of radical technological innovation.

A recent introduction to a *Computers in Libraries* issue on innovation posted the question, "Does innovation mean incrementally changing systems or services to be better than they were? Or does it mean really doing things differently, fundamentally changing our products

or operations?"[44] As Abram notes, "All innovations can be important, but there's a big difference between those that merely improve a current process and those that are transformational."[45] Maloney et al. note, "Libraries have been effective at embracing sustaining technologies (technologies that enable us to do the same things for the same users) but are more challenged by disruptive technologies (technologies that do very new things and for new users)."[46] Reflecting on his discussions with ARL library leaders, Jantz notes, "These library leaders have a good grasp of the innovation process, and it appears that incremental innovation is ongoing, frequently through a process of bringing in new concepts from other organizations and institutions,"[47] and later notes, "The university librarians see most innovation as incremental, not radical, and innovation as occurring with respect to existing systems, and thus having a high degree of compatibility with products and processes that are already in place."[48]

Still, while the concepts of newness and radical versus incremental changes were mentioned within some of the free-text comments as helping gauge something as innovative, if considering just the data collected by this single survey alone, they aren't generalizable truths that can be presumed across the entire set of participants or even a majority of participants. An additional set of finely tuned questions would be needed to better address the significance of newness as it relates to the perception of innovation. Additional questions could also home in on the degree to which a "radical" change associated with a new item may be perceived as more innovative, compared to another item categorized as representing more of an incremental change.

Question 9 asked for any additional items that respondents thought were especially innovative:

> **Question 9**. Are there any ADDITIONAL items, not included in the list, that you consider especially innovative, or hold great promise. If so, could you please list a few such items and provide a few reasons why you feel these are especially innovative. Note, such items could be something introduced years ago and broadly implemented; or it could be a new technology or service that you feel is on the horizon and especially worth watching. A different way of phrasing this question could be "What are projects, either current or historic, within an academic library that you consider innovative? What are the characteristics that make these projects innovative?" (Jantz, Ronald. "Innovation in Academic Libraries: An Analysis of University Librarians' Perspectives." Library and Information Science Research, Vol 34:1, 2012, p11.)

Several respondents offered additional ideas and, in some cases, thoughts on why they felt these ideas were innovative:

- "Projects which invite the public to contribute to the accessibility of archival records by transcribing handwritten documents, tagging digital copies, and much more—using new tools to not only reach out to the public, but inviting them to engage with archival records—is innovative. It is a marriage between the archival content and the technical delivery."
- "Again, an interesting question, as we haven't been particularly out of the box, and are beginning to understand as a group that 'emerging technology plan' is probably an oxymoron."
- "The projects that I am most excited about are those related to copyright and fair use, e.g., the Google settlement, the Georgia State University course reserves settlement, and the public policy initiatives in Washington that address unfettered access to and the preservation of federally-funded research."
- "The digitization and mass promulgation of Special Collections materials is both new and innovative. It flips the traditional model of Special Collections (which was built on severe access restrictions)."
- "Shibboleth; shared services among multiple libraries."
- "Learning Commons concept—truly groundbreaking and continuing to evolve in the decade of the commons concept existence."
- "Citation tools, but they are still too hard to use"
- "Most of our innovation centers around going to patron driven purchases, for both electronic and print."
- "Stretching the range of services offered in academic libraries in new directions: hosting tutoring, advising, reading-writing centers, active and expert technology instruction and support"
- "The key shift is from the library as the source of all knowledge, to the library as a partner with patrons, assisting them in their research and helping them to explore information. This means opening up the internal work of the organization, through blogs and other social media, often packaged into a 'labs' site (e.g., NYPL Labs or British Library Labs). It also means inviting researchers in to help the library shape its offerings and experiment with new capabilities."

Question 10

The last question for this survey asked ARL library leaders how they support innovation at their libraries and in this way differed from the focus of previous questions. This question harkens back somewhat to question

4, asking about particular factors considered when deciding to pursue an idea; this final question focused on infrastructure and support elements to facilitate the discovery of such ideas in the first place. It provided thirteen examples and allowed respondents to list additional methods of support practiced at their library. While the question differs from the main thrust and purpose of the survey, it's an interesting question, and since the author had the attention of two dozen ARL leaders, it proved a nice final question to gather perspective on.

As noted by Rowley, "Innovation in practice, then, involves both specific project management to select, design and implement a specific innovation, and also the promotion of an organizational culture that encourages and facilitates innovation."[49] Dysart (quoting a presentation by Charlene Li) noted, "Leaders must let go of control but not relinquish command, create sandbox covenants to allow risk taking, create a culture of sharing and model it. . . . Enterprises must allow all units to pilot new technologies and processes, design process scenarios around user roles, invest in innovation."[50] Patterson et al. note, "Leadership capability, organizational culture, and organizational values are among the most important organizational factors and initiatives that enhance innovative working. . . . Organizations that actively promote and reward innovation are most effective at bringing about innovation."[51] In a report, the researchers noted several practices and conditions conducive to innovation in an organization:

- Managers provide practical support for new ideas and their application.
- There is a "we are in it together" attitude.
- We strive for a reputation for being innovative.
- The general management style is participative and collaborative.
- The organizational goals are directly aligned with innovation.
- Management practices actively enhance innovation.
- There is a "no blame" culture—mistakes are talked about freely so that other people can learn from them.
- Resources and facilities are readily available for use in testing out new ideas.
- Personal development objectives explicitly related to innovation are set.
- Job assignments ensure that there is enough time and scope for trying out new ideas.
- The appraisal system is directly linked to rewarding creativity and innovation.[52]

Deiss suggests the following factors can help focus innovation practices:

- Organizational assessment (develop an organizational baseline)
- Develop a dialogue about innovation and strategy
- Invest in organizational learning and teach staff to be innovative strategic thinkers
- Develop organizational systems that support the work of innovators and strategic thinkers throughout the organization[53]

As noted in chapter 2, the word *innovation* often appears in strategic plans. One possible response for this final question was "Innovation (with a technological component or inference) is mentioned in our Libraries' strategic plan, annual report, or other significant document." Two choices entailed support for staff travel and professional development; one choice focused on library venues, the other on nonlibrary venues. One ARL library leader in Jantz's research noted, "The more I can get people out of the building, out in the library community, out going to conferences . . . the more likely it is they are going to come back with great ideas."[54] Cervone notes,

> Fostering a culture of innovation takes serious effort. Perhaps one of the most important things a librarian can do to foster innovation within their library or organization is to look outside the walls of the library. Librarians should investigate what commercial organizations are doing with technology to see where the technology is going and what others are trying to do. Applying the lessons learned from the commercial sector to the library is wise because the expectations of our users are being set in the commercial sector not in our libraries. Facebook, Twitter, and iPhone apps are driving the wants and needs of our patrons, not our OPACs.[55]

Reflected on earlier, recognizing trends can be an important component of innovation strategy. Two possible responses for this final question included "a staff position(s) at the library has as a 'major' job responsibility a focus on technology based innovation (e.g., conducting environmental scans; trendspotting; leading library projects that could be considered innovative; leading library discussion on innovation; etc.)" and "the library has a library committee, working group, or organizational department who has as a primary focus the research into and/or recommendation of technologies that could be considered Innovative." Suggesting casting the net widely, Cervone notes:

> Trendspotting is a decisive factor in a successful innovation effort. Staying on top of emerging technologies means stretching out beyond traditional or safe information sources. For example, while library technology blogs can be useful, truly innovative ideas for your library will more likely originate from things

Answer		Response	%
Innovation (with a technological component or inference) is mentioned in our Libraries' strategic plan, annual report, or other significant document.		20	83%
A staff position(s) at the library has as a 'major' job responsibility a focus on technology based Innovation (e.g., conducting environmental scans; trendspotting; leading library projects that could be considered innovative; leading library discussion on innovation; etc.)		12	50%
The library has a library committee, working group, or organizational department who has as a primary focus the research into and/or recommendation of technologies that could be considered Innovative.		10	42%
The library has funded one or more staff travel to primarily library-related conferences or external events related to technology, innovation, etc. (e.g., American Library Association Annual Conference; LITA National Forum; Internet Librarian)		20	83%
The library has funded one or more staff travel to conferences or external events primarily related to technology, innovation, etc., but which are not primarily library focused (e.g., Consumer Electronics Show; Apple Worldwide Developers Conference; another industry event not primarily with a library focus).		15	63%
The library has funded hardware and/or software purchases that you considered to be innovative		21	88%
The library has held a meeting open to library staff to talk about Innovation (e.g., a scheduled meeting; a retreat; a brown bag lunch; etc.)		14	58%
The library currently has an annual, or otherwise regularly occurring, staff award or project award recognizing innovation (e.g., "an innovative solutions award"; an award for the most innovative library project of the past year; etc.)		6	25%
The library has applied for external grant funding to support a service or project with a strong technology innovation component.		16	67%
The library provides funding for online webinars, etc. that at times speak to technologies that could be considered innovative.		21	88%
One or more library staff have taken an organizational development / personality / trait assessment test to better understand such things as their leadership style, level of risk taking comfort, etc.		9	38%
Staff have been given research time or a temporary reassignment of job duties to pursue a project related to technology innovation.		16	67%
Other		3	13%

Figure 3.6
Responses to question 10 of the survey

you read in information sources that deal with other types of industries. This is not a slam against library technology blogs. It is just a fact of how innovation diffuses that broader networks of information provide more varied source of information. It is through the bridging from other disciplines that new ideas enter a discipline's ecosystem. Along the same line, librarians should consider going to non-library conferences to gain new and different perspectives. Furthermore, if people working in an academic environment should go to a conference geared to the commercial sector, and vice versa, to develop new perspectives.[56]

In his discussions with ARL library leaders, Jantz noted, "Several saw innovation as a synthesis that develops by looking externally, seeing what's out there, analyzing the pieces, and bringing these pieces back together in new and different ways. One respondent used a particularly apt phrase for this process of bringing something new in from an external organization by describing the library culture as one of being 'fast followers,' which suggests a process in which the organization examines and evaluates innovations before adoption."[57]

Question 10. Below are examples of how a library might support or encourage innovation

among staff. Are any of these statements currently true at your library? Please mark all that apply. An "Other" box is also provided at the bottom of the list, to add any additional comments.

For this last question, the top responses selected—by twenty or more respondents each—were

- The library has funded hardware and/or software purchases that you considered to be innovative (21)
- The library provides funding for online webinars, etc. that at times speak to technologies that could be considered innovative (21)
- Innovation (with a technological component or inference) is mentioned in our Libraries' strategic plan, annual report, or other significant document (20)
- The library has funded one or more staff travel to primarily library-related conferences or external events related to technology, innovation, etc. (e.g., American Library Association Annual Conference; LITA National Forum; Internet Librarian) (20)

Less frequently cited examples of support—selected ten or fewer times—were

- The library currently has an annual, or otherwise regularly occurring, staff award or project award recognizing innovation (e.g., an "innovative solutions award"; an award for the most innovative library project of the past year; etc.) (6)
- One or more library staff have taken an organizational development/personality/trait assessment test to better understand such things as their leadership style, level of risk taking comfort, etc. (9)
- The library has a library committee, working group, or organizational department who has as a primary focus the research into and/or recommendation of technologies that could be considered Innovative (10)

Complete results are provided in figure 3.6. Several other comments were provided about how an organization might encourage innovation, including "establishing an endowed chair for innovative technologies" and "funding of open innovative ideas through an idea process." In relation to funding, Jantz notes, "Doing small-scale experiments was another useful approach, although only two of the six [ARL library leader] respondents indicated that part of the annual library budget was set aside for exploratory projects."[58]

Notes

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