Foley Library Scholarship

Foley Center Library

2017

Early Adoption, Early Abandonment: Parallel Problems in Promoting New Technology

Caitlin Bagley
Gonzaga University, bagley@gonzaga.edu

Recommended Citation

Bagley, Caitlin. "Early Adoption, Early Abandonment: Parallel Problems in Promoting New Technology." In The LITA Leadership Guide: The Librarian as Entrepreneur, Leader, and Technologist, edited by Carl Antonucci and Sharon Clapp, 95–108. Washington, DC: Rowman & Littlefield, 2017.

Gonzaga University Institutional Repository

Faculty Research and Publications/Foley Center Library

This paper is NOT THE PUBLISHED VERSION.
Access the published version via the link in the citation below.

Early Adoption, Early Abandonment: Parallel Problems in Promoting New Technology

Caitlin A. Bagley

Gonzaga University

INTRODUCTION

As traditional library services shift, academic libraries have found themselves increasingly trying to balance the needs of students who lie at both extremes of use particularly within an information literacy lens, we can deal with students who have already been exposed to higher levels of information literacy, and those who are completed unexposed. Those who will not stray from printed material and those who are willing to try anything once. Both of these users need the help of the library, but trying to find the right approach without scaring off the other can be frustrating. The Foley Library at Gonzaga University has approached this from different angles by adopting a series of differing technologies to varying levels of success. Although there have been many technologies that have been adopted successfully without much hindrance, it is also important to seriously examine why certain adopted technologies fail to flourish when others did so easily. This chapter aims to look at two technologies that the library attempted to adopt and in particular what aided or hindered their total adoption by library staff and by students by looking at the literature of technology adoption and abandonment.

APPROACHES TO ADOPTION

As a masters level, midsize university, the Foley library at Gonzaga consists of 10 faculty librarians and over 25 staff members. The library had the flexibility to try new things without risk of major fallout so long as things were brought out on a small scale so that innovations could be approached slowly. Indeed there is a spirit of trial and error at the library where new ideas and projects are frequently brought up and tried, but along with this comes the necessary function that not everything makes the final cut towards continued and long term use. The library serves over 7,000 FTE undergraduate and graduate students both in person and online. This private liberal arts school has focused on educating the whole person, and with that mission, the library has tended towards collections and technologies that students use and will need for their direct education. Although the IT department is housed primarily within the library building itself, there has been a clear bifurcation of the two units, and this has been reflected in how some technologies have been supported through their adoption at the library. Without total support from both departments, many technologies have been adopted by both sides, but few have succeeded completely across both departments. This chapter will highlight the software technologies Jing and Piktochart to show what worked and did not in their adoption. Both of these resources were brought into the library through similar means, but they were received entirely differently. Jing was seen in a confused light by many staff members, and was ultimately abandoned in no small part because of this confusion, whereas Piktochart was ultimately adopted due in part by staff anticipation of its uses and reception.

LITERATURE REVIEW

As the literature was reviewed about technology adoption and abandonment, one of the most common notions to recur throughout was the "diffusion of innovations theory" (Rogers, 2003) which focuses on the lifecycle of how an innovation technology embraced and entered into the lifecycle of an institution. Many noted that their particular institutions followed the natural life cycle of adoption: knowledge, persuasion, decision, implementation, and confirmation. Another way of looking at it is that there is the innovation itself, there are varying communication channels, time, and the social system that the innovation will be applied towards. Working in conjunction, these elements will eventually filter together to make However, as Heidi Blackburn stated, "IT implementation is often the most difficult, not only because of varying technological skills, but because each librarian may not have fully been made aware of the changes" (2011) as will be mentioned later, this became a common issue with some of the technology implemented by the Foley library. It is important to note that although this focuses primarily on technology, the innovation can apply to anything adopted into a culture. Abby Johnson gave the wise advice to "Know why you're making changes, and inform your staff so that they can relay the message to patrons" (2016), when a technological service suddenly disappears, patrons can feel left out of the loop. Even if only a few were using the service, those can sometimes be the most vocal. Another important factor that determines the success of any change relies on who implements the change, and what kind of change is being brought about. Oguz notes that "technological innovations are generally more observable, have higher triability, and are perceived to be more beneficial, simpler, and easier to implement than administrative innovations (2016), administrative innovations in relation to technological ones tend to be more focused on organization structure and strategic documentation. Again and again, ease of use was stressed throughout the literature, boiled down by Kulviwat, Bruner, and Neelankavil as, "Given that perceived ease-of-use is defined in terms of effort, individuals generally perceive a technology to require less effort to use as they gain more knowledge and confidence through direct experience with the technology" (2014). The literature seemed to hold that although there was a general pattern in place for all adoption, there were crucial moments where it could go wrong depending how it was supported, in particular pain points tended to focus on a lack of clarity in directions or assumptions of readiness. Technology that was abandoned tended to be brought in rapidly or without much research on user support for a product.

Critically many parts of adoption rest on the shoulders of collaboration and multiple skillsets. As Macdonald and Martinez-Uribe pointed out, "These strategies require multidisciplinary skills … the alignment of specialists from the aforementioned backgrounds is an important step on the route to a cohesive infrastructure to support researchers" (2010). In order to ensure the success of a technology adoption it is better to have many voices involved including those that will be using the product in any tangible way. In part this often relies on learning how users interact with a product or what they require from a service point, also known as the user experience(UX). Sometimes this will involve a lot of pre-testing with students and others who will use the end product. In the case of Piktochart, there was an initial training session to work out the flaws in how it was taught. During the planning portion it is worthwhile to think broadly about who might be involved with a technologies' use. Kolod and Unger (2016) discussed how their collaborative work started out small, but grew to include others as their work grew. Perhaps obviously only in retrospect, their work thrived because they responded to the feedback they received about changes. Technology changes are often reliant on user tested improvements and involve many different hands, and are rarely ready out of the box, Schmidt, Roy, et al. liken it to, "Today's applications often reach outside the organization and their development involves numerous parties and complicated organizational structures" (2001). Leadership literature focuses primarily on receiving

feedback about new technology, but in particular Marco stresses, "when I discarded secondhand information, I sometimes found myself working with no information at all" (2015) Secondhand information in this case referring specifically to what others may have heard about a product or observed indirectly, but few with direct knowledge of how a product may actually work. Administration must overcome the challenges of listening to multiple streams of how technology is perceived, used, and desired by their staff without seeming to ignore or disregard the voices of those who might fear approaching administration either because of a sense that administration will not listen to their concerns or because of how much money has already been put towards the product.

PIKTOCHART: EARLY ADOPTION

At the start of the fall semester in 2013, one librarian prepared to teach a series of one-shot instruction courses using infographics as a basis for explaining statistics and census data. At the time, the librarians were working of the ACRL Information Literacy Standards, and were hoping to teach towards Standard Three, "The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system" (2000). There were many software options available at the time for students to generate infographics. And it was hoped that by incorporating a technology like infographic generation, they students would learn ways of filtering and incorporating information from multiple locations. As with many choices to adopt new technologies in the library, this choice came down to price and ease of use. Piktochart, a freemium website open to the public was chosen as the best of many infographic generators by the librarian leading the infographic instruction. Freemium resources differ from free open source software in that they usually only offer a portion of their services for free, with a hook or other options that give more than the free model that need to be purchased later. A famous example is that of Dropbox, which gives free limited storage, but for a paid subscription will give more storage and more data protection. The top reasons it was chosen were based on the fact that it was a free resource for students that they could all access, the facets and filters were all clearly labeled, and it seemed to be the most approachable of others compared. At the time this included easel.ly and infogr.am, though many more have sprung up in the time since. In later years, the arrival of more generators would create more confusion for students and staff about which generator they were supposed to use. The generator was chosen in part because it was a free resource for the majority of what students would need. Although it had templates that only paid users could access, it had easy to start free templates that could be quickly jumped into for those who had never used the software before. Another positive lay in the fact that accounts could be created using email, Facebook accounts or Google accounts. This was seen as a good advantage, because student email accounts were through Google. These were all things that made it seem as though students would be able to create accounts with minimal hassle. As these would be 50 minute one-shot sessions, all time needed to be carefully used without a minute wasted, and the librarian wanted to smooth over all potential speedbumps for using the service. Prior to teaching the course, a short trial run had been done with student workers and some staff members. The trial had shown that the concept of infographic instruction worked, but that there were some parts of demonstrating Piktochart that required more instruction and advance set up. Attempts were made by the dean of the library at looking into the possibility of purchasing a site license for students, but the only way that could have been done was to create individual accounts devoted to each student. In the end there was no proxy login option, and all students were told to create an account prior to arriving to class by the librarian.

One of the downfalls of not paying for a service is that you have no control over not only the services offered, but in terms of knowing when updates will happen, or getting support when a component of the software breaks, the user can experience a lack of support or feedback on what has gone wrong. At least with paid services, the library usually has a heads up when new upgrades will be coming and there is a vendor representative that can be contacted in case of trouble. With Piktochart, the library was reliant on contacting customer service or FAQ pages for any help they may have needed. In addition to these pitfalls, Schreiner and Hess note, "Instead of charging a fee, other revenue sources can be used, such as monetizing user information by collection storing, analyzing, and even selling it" (2013). Which such massive privacy concerns, librarians are in a unique position of having to find low cost opportunities while also safe guarding and making their students knowledgeable about the inherent risks of using a tool. Before each class using Piktochart, the librarian made sure to address the class about value of understanding where this information would be disseminated, and why it was important to be accurate with their statistics and use of information. In the case of the Foley library, although there had been several trial runs of the class using staff members and student workers during the summer, there had not been a true class like scenario until the day of the first class. The prior trial runs had involved gathering those who were available during the summer time and having them create accounts, where they were highly encouraged to play and see what they could do with the service. Student workers who were on hand reported liking it, but their descriptions of any particular problems were often vague, and there was no chance to follow up on what those particular problems were. In short, trials were run quickly with little chance for thoughtful assessment. It was during this initial run that problems already began to arise. Simple problems like the timeline of how the class structure needed to be arranged were shown in clarity, because it quickly became apparent that teaching Piktochart would require a lot of technology explanation before actually using in class, but larger problems such as the fact that Piktochart does not function well in an Internet Explorer or Safari environment had not been foreseen. In part, this was because most of staff had used Firefox or Chrome, and not thought to try out other options. While this was a small oversight, it was one that resulted in significant confusion for student users and instructors for some time until it was figured out through trial and error that the cause was browser based. Adopting a freemium technology like this, opened the door to these potential problems.

As stated above, one librarian had spearheaded the adoption of this technology, and with this led to siloing of information. When questions about use came into reference, despite alerts about impending questions, there were still staff who were unaware of the product or where unsure of who to direct the question to. This was not necessarily the fault of the librarian who spearheaded its adoption, simply that with no administrative level support of a technology that would not be used by everyone, there was bound to be some confusion over just who was using which product. To have one person know the most about a product can make the technology really well supported from one side, but it also has the downfall of making the product either inaccessible or at minimum creating unneeded barriers that may prevent the user from actually using the service. Lack of communication creates the problem, as with many communication issues, the more widely it is discussed by the library as a whole, the less problems there will be down the line. With time, more librarians began to use the service, and in one notable case, a faculty member outside the library even began to use it regularly in her classes. This was a clear case of the product becoming more familiar to staff as they experienced it, but it most certainly was not a case of immediate adoption and embrace. Indeed, this adoption has flourished with time as more and more classes are exposed to it each year, and more instruction librarians become familiar with it and use it in their classes. The initial trial went well, but the adoption of Piktochart would have gone better with more trial testing, especially focused among the instruction librarians. As was experienced by the case of

California State University San Marcos, they noted quickly that "Using low cost or free software may help alleviate some of the expenditures, but the production/delivery may still be a stress factor for some librarians" (Olivas and Chan, 2013). Learning any new technology can cause stress in an environment, and it's important not to get caught into the trap of thinking that because the software is a free resource it will have an easier roll out than any other paid product.

Some things that could have been done to alleviate pain points would have been to make the library staff more aware of the Libguide, perhaps even linking to Piktochart directly from the databases page, despite the fact that it is not a classic database. This linking did not initially happen because it was a pilot project, but later it was likely more of an oversight than any specific lack of trust in the product. At the time of initial implementation, Libguides has not reached peak use at the library, and there had not been a clear directive on how they would be used from the library. One consideration that comes into play when promoting the work of another company such as Piktochart, is that the librarian is essentially performing unpaid advertising and marketing work for a company that usually has no intent to reimburse. Piktochart is a very user-friendly site that actively solicits and replies to user feedback, and while this can be a boon to a librarian looking to offer a dynamic service to students that will be responsive, it is also worth looking into the hidden costs of being the product that a company promotes. Another option for promotion would be to have a library wide demonstration of the product before it was used in a classroom setting, along with perhaps a hands-on demonstration, a virtual sandbox of sorts. This would have allowed staff to understand potential questions that might have arisen. A small version of this was done, but the focus of the demonstration was not on potential questions, but rather to focus on teaching technique and timing for the course to make sure that the actual class would run smoothly. In retrospect, this time would likely have been better spent or if at least a small portion of the time was allotted towards addressing potential questions about access that may have arisen at reference. However, the author does acknowledge that sometimes it is hard to get total staff involvement on a product that will not directly affect them in the day to day. Other possibilities would be to alert people on reference that a class is about to be taught and there may be a heightened amount of questions about Piktochart in the coming hours or days. This allows for reference staff to quickly brush up on the tool at the time of need rather than bracing for an unknown and unspecified time when a question might be asked. To refer back to the Diffusion of Innovations theory, there are often different rates of adoption based upon "perceived attributes of innovations" which include: relative advantage, compatibility, complexity, trialability, and observability. Two of these aspects are highlighted with the adoption of Piktochart, especially observability that holds that when an innovations results are easy for others to see, it will be adopted more quickly. The same for complexity, which relates to how an innovation is perceived to be difficult or easy to use. Piktochart was initially perceived by those in the library as being difficult to use, but with more exposure and observation, users began to see that the resource was something that could aid them.

Although planning and logistics problems arise as you add more people to the mix, things tend to go smoother when there is more staff buy in to a product, or as Houghton wrote, "Have the sense to realize when decisions are best left to management and when they are best made by the task force" (2007). The lack of staff buy in came both from a sense that this was an instruction tool, and not something other librarians would need to use, and likewise, the lesson plan it was used with was paired closely with statistical datasets, and there may have been an intimidation factor before librarians began to see that Piktochart could be used in other ways. In some senses, easier said than done, but usually if a committee or an administration is sensing opposition, they should start listening to the staff to get a greater sense of why. Others like Evener have focused on ways of garnering buy in by looking at structured methods, "the

best way to propose an idea to decision makers is to know your audience, plan your presentation, and make it as easy as possible for stakeholders to say yes by demonstrating the idea's importance to institutional goals and mission" (2015). This relies on institutions and librarians to be aware of these goals and missions. If there is any sense of uncertainty or lack of clarity about these things, then it becomes harder to drive people around central ideas and needs. All in all Piktochart has been a successful roll out in that it is still actively used across campus by many instructors and librarians. There are certainly those who use it more than others, but this would be the case in any technological roll out. It was not smooth, but it has migrated successful into a used application.

JING: EARLY ABANDONMENT

For those who have not yet used it, Jing is screen capturing software published by Techsmith that has been widely used by libraries and others to upload quick tutorial videos to the web. The software was first created in 2007, but did not gain wide use in libraries for a few years as it faced a slow rollout. A perfect example of this unfamiliarity was that when discussing when Jing was adopted staff members of Foley could not come to a clear consensus of when exactly the service had been implemented at the library. The rollout was so slow and done through only a few computers at a time, that many people were initially unaware of the product. Comments ranged from, "I don't know when it was added, because I never used it" to "It had to be within the last 3 years, because I know it was since I was in this position". Keeping such viewpoints in mind, it was eventually narrowed down that Jing was most likely installed on the reference computer during the summer of 2013. Through this winnowing, it was discovered that only one staff member was using the product with regularity, and the videos created tended to be for explanations to vendors and the IT department. While it was a relief to discover that the product was being used by someone, such comments reveal the problems with adding in a new technology. The Foley library is a relatively small library of about 30 staff members that is supported by the university IT support system. There is a library staff member who acts as the IT Manager and liaison who helps the university IT understand the unique needs of library technology. However, without institution wide support or at the minimum support from library administration or supervisors, staff can feel there is no reason to learn the tool or even to keep up to date on it. Staff at the Foley library also varied in how willing and capable they were to adapt to new technologies. While some were willing to learn new technology, many felt that they did not have the time to learn something new unless it was absolutely essential to their job. Few took it upon themselves to investigate what a new tool might be on their own unless they were motivated by an outside influence.

Added with the idea of making short videos to send over chat or email to distance education students among others how to navigate varying websites and databases, in practice, it became more clutter and nuisance than actual practical tool. The reasons for this focused on misunderstanding of who should use it, no overall training, and no support. There are several comparisons that can be made to the Piktochart adoption in that once again this was a technological adoption that was largely spearheaded by one person as opposed to brought on by a group or administration. The primary differences though seem to lie in the fact that there was no distinct user group or class attached to the idea. Piktochart eventually flourished after other teachers and instructors were exposed to the idea, but with the case of Jing, there was no attempt at evangelization and the product was essentially left to be used by only one person. Although technologies can be adopted organically as people notice what works and does not work, it generally takes a strong leader or voice to convince others that a particular technology should not just be adopted by one but by the entire institution. One concern brought up by Aggarwal, Cha, and Wilemon (1998) was, "Limited

data on actual product performance and limited experience with the product or product category are likely to cause consumers to experience greater uncertainty and risk." When the majority of library staff were unfamiliar with the product, they had little making them desire to learn it and stray from what they already knew how to use.

Jing quickly became clutter on the reference desktop that was more likely to be accidentally clicked on that intentionally so. Indeed, the one staff member who worked with Jing most frequently said, "The annoying thing about Jing is the 'sun' tool. It's nice because it's always easy to use it to grab a screenshot, but it seems to get in the way no matter you move it" (Spracklen 2016). Indeed it was that very sun tool which allows a user to quickly make a video without have to find and select the application, that most people were aware of it at all. It is very easy to accidentally click on and start up a video without intending to. For a while many people were confused about why a sun was appearing on the screen went they went to print or answer a chat. In practice, when the application opened up, it was usually quickly closed out by someone who was not actually looking for it. This was a design flaw that was well intentioned, but did not take into account that there would be multiple users on the same computer. One strategy that might have helped to make Jing work better, would have been to place Jing only on select computers that would be used only by one user. Although reference seems like a natural spot to place Jing, by its very nature, the reference desk deals with a constant change of hands as librarians take shifts working there. This leads to natural information loss, and the fact that each user treats individual machines and software slightly differently.

Aside from the fact that no one was fully aware of the power of Jing, another major reason for its failure to thrive was that the distance services librarian and others who were more likely to use a screen capturing software had already paid for Camtasia Studios (also by Techsmith), and were heavily invested in it. There was concern that if tutorials were offered through both Camtasia and through Jing that there would be an inconsistent message that might be confusing for some students. The two tools were designed for very different versions of screensharing, with Jing intended to be quick and granular level, and Camtasia focused on longer overviews. Perhaps some of the initial frustration came from trying to use Jing in place of Camtasia, when the product is not necessarily made for that style of production. Still if the users who are the most natural choices for adoption are not willing or do not see the reason for adoption, it will be a major uphill battle to make the product thrive. Jing has many merits, but one of its primary competitors is a product offered by its own parent company. These competing desires most likely have an effect on how products are marketed and which fields they are brought. In the screensharing world, Camtasia is a well known power house, and perhaps some of the failure to thrive by Jing was dealt by the fact that Camtasia was already so well established in the field. Likewise, Jing was adopted because one staff member was more familiar with it than with Camtasia and wanted to try it. The benefits of a small staffed library gives people the ability to adopt technology with such ease and little resistance, especially as there was an attitude that perhaps Camtasia was not the only option and it was worth exploring a new option, especially if it was free. Notably, Jing used to have a paid option called Jing Pro which was introduced in 2009, but by 2013 Techsmith had fully retired the Pro version. Techsmith has many screensharing software platforms besides Jing and Camtasia, with the Pro version now retired, it would be wise to monitor support for the product.

One of the biggest problems with any technology product brought into the library is that support may eventually disappear or die out with libraries having to maintain legacy software that may no longer be compatible with the technology of the future. Libraries, especially state and public libraries, are increasingly dealing with shrinking or stagnant budgets that are being asked to stretch further than before.

With these concerns in mind, it's only natural that a library director would be looking for a free resource that could cover perceived future needs. Free things often have hidden and unforeseen costs including the loss of staff time as they take time to learn a new technology. Any new technology would require staff to take time to learn it, but when considering total costs it's important to consider how much training would be expected. It is not always clear with free resources. In 2012, even the Information World Review, noted that ROI is frequently touted as the best way to get the financial picture of using a new technology, but there are other factors to consider including total cost of ownership (TCO), these items can get lost in the appeal of a new technology. Still they emphasize, "It is far easier and less costly to change a decision when it is still on the drawing board." The cost of frequent changes goes beyond just the cost of investing in the purchase price of a technology, it also can affect staff attitudes as things change too rapidly, making them lose confidence in administration or the technology. Some costs hidden in the TCO that people might not consider when choosing software are things Hockel and Kintner mention like, "utilities, upgrades, CE costs, training and disposal" (2014). One might ask, if all prior versions of a technology have failed to last long in an environment, why should a staff member invest labor in learning a new method that if it follows trend, will likely disappear shortly. However, one of the key points of the Diffusion of Innovation theory focus on the types of adopters that bring new technologies into their lives: early adopters, early majority, late majority, and laggards. Each role has its own decision making process and reasoning for bringing a technology into use. Perhaps the library staff members that had to deal with Jing had differing adoption styles, with the staff member who brought in Jing using it being more used to an Early Majority style, with others being more part of the Late Majority or even Laggard style. At the Foley library there is not currently a standardized technology adoption plan, and often things are adopted at the point of need sometimes by the staff at large, and sometimes things slowly filter into use from early adopters who can lead others into the new technology with skill. Ultimately, Jing did not have a planning portion for how it was implemented at the Foley library. Without such planning, there was no structure in place to help Jing find a home within the library. Reed summarized the problems with training staff on new technology as, "Self-paced training often appeals to self-directed learners who are highly motivated" (2010). While the field does tend to draw self-directed learners, there is always a struggle in trying to motivate those who lack it for whatever reason.

CONCLUSION

There will always be new innovations and technologies to be adopted within the library world, but as experience and the literature review showed, if there is not strong support for the innovation itself, there will be a struggle. Although it is not necessarily doomed to failure, the adoption rate can be hindered and significantly slowed by misunderstandings and lack of support. Likewise, if a technology is not perceived as easy to use, it can fail to thrive when users are intimidated by the product, as in the case of Jing. Strong leadership from administration or vocal staff members is not an absolute, but it can help determine attitude when training begins. Without a well thought out implementation, the adoption will succeed or fail based solely on its merits, which will be up to an individual to determine on their own without input.

Most technology adoptions can and will go well, but it should be noted that as accelerating technological change comes to libraries, better plans for adoption should be developed sooner so that future adoptions and implementations can go smoothly. If not, technology failure will be a frequent scenario until the library unilaterally decides to adopt. The Diffusions of Innovations Theory has been around for decades now, and while it is not required that a library follow the methods detailed within it for success, and indeed, it should not be seen as a prescriptive method for success, merely an observation of how many

innovations roll out, libraries should likely consider familiarizing themselves with the methods in order to help smooth over a better transition. As many libraries are focusing on new ways to bring about change in their libraries, it would serve them well to look towards the business models and theories of other fields to see how they could potentially apply in the library. Technologies in and of themselves will not make or break an adoption it is the people who bring the technologies into use.

BIBLIOGRAPHY

"Migrating to the Cloud has Hidden Costs." 2012. *Information World Review*: 3-5.

Association of College and Research Libraries. (2000). Information Literacy Competency Standards for Higher Education.

Aggarwal, P., Cha, T., & Wilemon, D. (1998). Barriers to the adoption of really-new products and the role of surrogate buyers. *The Journal of Consumer Marketing, 15*(4), 358-371.

Blackburn, Heidi. 2011. "Millennials and the Adoption of New Technologies in Libraries through the Diffusion of Innovations Process." *Library Hi Tech* 29 (4): 663-677.

Evener, Julie. 2015. "Innovation in the Library: How to Engage Employees, Cultivate Creativity, and Create Buy-in for New Ideas." *College & Undergraduate Libraries* 22 (3): 296-311.

Hockel, Dale, and Michael Kintner. "Uncovering the real total cost of ownership: The influence of clinical engineering." *Health Management Technology* 35, no. 10 (October 2014): 16-17.

Houghton-Jan, Sarah. 2007. "Staff Participation and Buy-in." *Library Technology Reports* 43 (2): 26-28.

Johnson, Abby. 2016. "Pulling the Plug." *American Libraries* 47 (5): 58-58.

Kolod, Lauren and Barbara Unger. 2016. "A Collaborative Journey the Learning Commons." *Teacher Librarian* 43 (4): 22-27.

Kulviwat, S., Bruner II, G.,C., & Neelankavil, J.,P. (2014). Self-efficacy as an antecedent of cognition and affect in technology acceptance. *The Journal of Consumer Marketing, 31*(3), 190-199.

Macdonald, Stuart and Luis Martinez-Uribe. 2010. "Collaboration to Data Curation: Harnessing Institutional Expertise." *New Review of Academic Librarianship* 16: 4-16.

Marco, Cara. 2015. "Lessons from a Leader's First Year." *Library Journal* 140 (14): 46-46.

Oguz, Fatih. 2016. *Organizational Influences in Technology Adoption Decisions: A Case Study of Digital Libraries*. Vol. 77.

Olivas, Antonia P. and Ian Chan. 2013. "Beyond the Reference Desk: A Study on the Effectiveness of Low-Cost Distance Library Services at California State University San Marcos." *Journal of Library & Information Services in Distance Learning* 7 (1): 40-52.

Reed, Lori. 2010. "When the Going Gets Tough, the Staff Needs More Training." *Computers in Libraries* 30 (3): 6-11.

Rogers, Everett M. 2003. *Diffusion of Innovations*. 5th ed. New York: Free Press.

Schmidt, Roy, et al. "Identifying Software Project Risks: An International Delphi Study." *Journal Of Management Information Systems* 17, no. 4 (Spring2001 2001): 5-36.

Schreiner, Michel and Thomas Hess. 2013. "On the Willingness to Pay for Privacy as A Freemium Model: First Empirical Evidence."*ECIS 2013 Research in Progress Paper 30*.

Spracklen, John (Interlibrary Loan Supervisor) interview by Caitlin A. Bagley, May 20, 2016, interview, transcript.