Post-Print

Social software in academic libraries for internal communication and knowledge

management: A comparison of two reference blog implementations

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Abstract

This article investigates the adoption of new innovations for internal reference desk communication and knowledge management in academic libraries, specifically the use of social software tools. Actual implementations of the free blog software Wordpress from two university libraries are described including charts detailing advantages and disadvantages of the methods. In the context of the diffusion of innovation and organizational lag theories, the analyzed outcomes confirm that while social software tools are being used, relatively few institutions have exploited them for improving in-house processes. Without clearly articulated long-term gains, adoption of administrative innovations will follow the pattern of organizational lag.

Keywords: blogs, knowledge management, diffusion of innovation, organizational lag, Wordpress

Introduction

The reference desk is the frontline for face-to-face knowledge dissemination in a library. Its staff is responsible for dispensing an assortment of information that is continually shifting in nature. In the past, this may have been manageable by relying on a few workers to hold these vital bits of knowledge in their head. In today's information rich society, this is no longer practical or possible nor the best means for providing quality service or assuring sustainable institutional practice.

Most academic libraries have myriad staff working the reference desk, including librarians, students, interns, clerical technical staff, and part-timers. Often-times the only face-to-face contact between all of these staff members is at departmental or special meetings. Sometimes these members never all meet at the same time. Due to this diffusion, institutions likely have established methods of communication between reference desk workers, such as white board notices, binders, digital announcements sent through email messages, bulletins boards, wikis, and blogs.

Traditional methods for disseminating information, even those that incorporate digital technology such as email, are primarily one-way conversations. Someone has a bit of information to convey, so she passes it along to the other interested parties. Web 1.0 took analog communication ideas and digitized them, making distribution simpler and quicker. The development of the Web 2.0 technologies and social software brought the casual user the ability to easily conduct a discussion among many people so the conversation is no longer one-sided. Social software is loosely defined as "software which supports, extends, or derives added value from, human social behavior" (Coates, 2005).

Rather than simply passing along information, Web 2.0 technologies allow for that information to be placed into a forum on which others can build and contribute, with the added benefit of bringing together the combined intelligence of all participants and organizing this knowledge in a way that can be shared, searched, and passed on to new workers. Meredith Farkas, author of the *American Libraries* column "Information Technology/Technology in Practice" argues for the use of Web 2.0 social software tools for internal communication in her November 2007 column, "Who moved my email?" Farkas (2007) emphasizes the broader benefits of these new tools that reach beyond simply sharing timely information to facilitating the distribution and collecting of organizational knowledge.

Capturing and managing collective intelligence is a challenge for all kinds of organizations, particularly for those that deal primarily with information--information that is constantly changing, exponentially growing and morphing in nature. Seen as the "art of creating value from an organization's knowledge assets," Townley (2001) defines knowledge management as "a set of processes that create and share knowledge across an organization to optimize the use of judgment in the attainment of mission and goals" (p. 45). Academic libraries proficiently manage information about their operations, collections, and specific subject areas of expertise. Less frequently do libraries focus on gathering and preserving organizational knowledge, that which is created and stored in the heads of individual workers, or that which results from working teams. Capturing information which represents the collective intelligence of the organization and using it to improve library operation is critical for advancing the library's mission and succeeding in an environment that it rapidly changing. Applying the knowledge management

framework to libraries, Jantz (2001) argues that "organizing and providing access to intangible resources that help librarians and administrators carry out their tasks more effectively and efficiently" will greatly improve the productivity and efficiency of the library (p. 33).

The use of technological innovation to gather organizational information has been exploited by businesses and libraries for years. For instances, many libraries have shifted from using spreadsheets for managing digital collections to employing powerful electronic resources management systems (ERM). New technological solutions often deploy proprietary software, such as database programs or coding languages, that frequently are clunky to use and quite complicated to engineer. Beyond the mere technical hurdles involved with implementing a knowledge management system are the very real issues of beginning a new or additional work flow process, one that strives to capture individual intelligence, which is so often intangible.

Introducing new innovations into the workplace can be a challenge. Even when the innovations are relatively minor or easy to adopt, transition is not always guaranteed. A popular theoretical framework for gauging an innovation's acceptance is Rogers' Innovation Diffusion theory (2003). Rogers defines innovation as "an idea, practice or object that is perceived as new by the individual or other unit of adoption" (p. 12) and diffusion as a "process by which an innovation is communicated through certain channels over time among the members of a social system" (p. 5). Five different attributes group an innovation's characteristics that influence its acceptance: Attribute one: *Relative advantage* relates to users' perception of the new tool being better than the previously used method. Attribute two: *Compatibility* weighs the consistency of the new idea with

the values and needs of the users. Attribute three: *Complexity* takes into account user's

perception of how difficult the new innovation is to understand or use. Attribute four:

Triability considers the users' ability to test the new innovation so they may learn from

doing. Attribute five: *Observability* considers the degree to which the results of the

innovation are easily recognized by the users and others (Rogers, 2003). Based on

individual user's perceptions, these attributes can either inhibit or aid the rate and success

of the adoption and the diffusion of the innovation.

Libraries in general have conflicting reputations regarding their adoption rate of

new technologies. Even when major influencing factors do not adversely affect an

innovation's diffusion, other elements may contribute to less than successful

implementations. Acceptance of technical innovations in a workplace does not always

translate into acceptance of administrative innovations. The lack of acceptance for either

will result in organizational lag. Organizational lag as defined by Evans (1966) is "a

discrepancy in the rate at which new technical and administrative ideas are implemented

in an organization" (p. 52). This notion is based on the premise that the "administrative

innovations in organizations tend to lag behind technical innovations" because benefits

from technical innovations are more tangible, with obvious pay-offs, whereas

administrative innovations often take more time and effort to demonstrate their positive

affects (Evans, 1966, p.51).

This article explores the adoption of new innovations for internal reference desk

communication and knowledge management. Two actual implementations are described

and outcomes are analyzed by considering the diffusion of innovation theory and

organizational lag concepts. A survey of related literature is reviewed to support the

recommendations presented for introducing technological and administrative innovations into the workplace.

Implementing change - Transitioning workflow processes

Although some librarians like to think of themselves as change agents on the forefront of the technology shift, the actual rate of change within academic libraries often appears to move at a glacier pace. Libraries were early adopters of technology, quickly shifting card catalogs to OPACs and providing Internet and other electronic services to patrons; however, when it comes to internal operations, most are "stuck in a pre-postmodernist age while our world had become post-postmodernist" (Herring, 2001, p. 42). Libraries are famous for their processes--the intricate ways of operating that have, in a sense, been the added value to the collections and services. As institutions move to incorporate new technologies to enhance patron services, such as providing instant messaging (IM), chat reference and adding tag clouds in the catalog, they have been less quick to incorporate or exploit these new tools for internal operations: "we continue to do everything pretty much the same way it was done by those who preceded us" (Herring, 2001, p. 42).

Outside forces significantly impact libraries as a whole, creating a dramatic effect on the perceived role of the academic library, on budgets, and workflow processes that reach all aspects of the institution (Wood, Miller & Knapp, 2007, p. 1). Libraries' responses to these forces of change demand far greater fixes than can be resolved by adding a new piece of equipment or technological tool. While recognition is the first step, fostering the change can be a very complex endeavor. In any structured work

environment, efforts to implement change to basic operations and processes are often met with resistance or outright hostility.

Many organizations prescribe to the notion that they must manage or control all aspects of change. Yet, because "change defies management," Tennant argues that "the best we can do is to manage our response to change, by creating organizations that foster it and help staff make it part of their lives" (2002, p. 28). Incorporating small, easy to implement changes is one method for shifting organizational culture (Tennant, 2002). Incremental modifications eventually add up to the inevitable reality that "change is constant and therefore, our response must be as well" (Tennant, 2002, p. 28).

Making use of social networking tools--such as blog software or wikis to share reference desk collective knowledge and news-- is easy change. Shifting how reference desk staff communicate and share information from a one-way announcements to a community forum has benefits beyond the technical capability enhancement. For example, reference desk staff who may not be familiar with Web 2.0 tools are provided an easy, non-threatening introduction to social software. Acceptance of these small shifts to basic operations may have positive impact on the climate for change and lessen anxiety that change brings. Ultimately, all reference desk staff share the mission to best serve the patrons; when new innovations can be demonstrated to positively affect this mission, then acceptance of the change will follow.

Knowledge management: Use of social software

Businesses and large corporations have always struggled with managing institutional knowledge and transferring information from retiring employees to new hires: "One of the biggest, most difficult issues facing organizations over the next decade

is knowledge transfer" (Kapp, 2007, p. 22). Companies are now realizing that methods that worked in the past may no longer be efficient or effective. To accommodate the younger generation of employees now entering the workforce, many of the country's largest corporations are utilizing a variety of new techniques and technology tools that support diverse learning styles in an effort to stay competitive in a rapidly changing marketplace (Kapp, 2007). Detailing workers' different knowledge transfer perceptions based on their generational group, Kapp (2007) describes how different technologies such as employing blogs for informal learning or using IM for groups of workers to exchange ideas are being used. He predicts that if businesses do not find new ways to quickly transfer knowledge between workers they will struggle to remain competitive with their competition.

DaimlerChrysler, Dr. Pepper/7 UP, and Verizon are just a few companies who are implementing internal blogs on a large scale to share information across the entire organization and scattered around the globe. They are creating "a vast store of knowledge that is used by new and experienced employees alike" (Kapp, 2007, p. 28). These blogs provide a means for dispersed employees to discuss production problems or design ideas and for storage of solutions for future retrieval. In Kapp's view, "the availability of this information has helped to streamline processes and make information more accessible…" (p. 28). Corporations are attracted to the new social networking tools' enhanced features which surpass the traditional knowledge management systems by providing greater flexibility, accommodating diverse learning styles and offering a huge step forward in user experience design. These technologies allow for people to not only connect with information but also with other people (Lamont, 2008).

Libraries, even though they are organizations experienced with connecting people with information, have not historically invested much energy on capturing, preserving, or even transferring institutional knowledge. Like large corporations, academic libraries need to remain relevant in today's dynamic and competitive information marketplace. These simple solutions to advance worker skills and enhance knowledge sharing can be easily adapted to meet the needs of academic librarians.

The reference desk is an academic library's face-to-face portal for knowledge sharing and information dissemination. Freely available open source software tools for building knowledge management systems and sharing the institution's collective intelligence may offer a simple method for managing both internal and external information dissemination: "One of the best uses for some of the popular social tools out there is knowledge management" (Farkas, 2007, p. 30). Tools such as blogs can offer enhanced methods of organizing information--from searching to categorizing, to updating, to responding to, to embellishing with added links, to uploading files and preserving the information for future use and retrieval. According to Farkas (2007) the use of new social software tools to meet these goals looks beyond the technical benefits of the tools and humanizes the advantages by imagining "if the reference desk staff shared the resources they use to help patrons with certain assignments, it would be like having your colleagues beside you whenever you answer a question" (p. 30). Librarians are accustomed to collaborating with colleagues for subject specific needs. What better way to capitalize on the expertise and knowledge of all staff than by building a shared repository of knowledge that will allow a forum between colleagues even when the colleagues are away or no longer affiliated with the institution?

The majority of the literature on library blog use focuses on the implications for opening up two way communication with patrons, how best to market a library blog, and the possible additional uses for blogs in the educational setting (Draper & Turnage, 2008; Swanson, 2006; Zhuo 2006). There has been far less discussion about internal uses of blogs and their simple but powerful ability to be utilized for "internal knowledge sharing" (Farkas, 2007, p. 30). In *Social Software in Libraries: Building Collaboration, Communication, and Community Online*, Farkas (2007) devotes two chapters to blogs, yet only three paragraphs discuss the internal use of blogs in the academic library. Swanson (2006) claims that "blog technology presents an important development in the future of reference tools" (p. 57); yet, like most implementations, he refers to blogs only as external communication tools.

Many libraries, particularly public libraries, quickly embraced the use of blogs for communicating directly with their patrons and for adding a new twist to standard marketing methods. Academic libraries incorporate blogs more as personal journals developed by subject specialist academics or as newsletter type publications. More recently there has been discussion about using blogs for shared reference work as "a tool through which communities of information-seekers and information-providers can collaborate" (Pomerantz & Stutzman, 2006, p.204). Seen as an appropriate tool to facilitate asynchronous discussions, Pomerantz and Stutzman (2006) argue for the use of blogs in collaborative reference work, detailing how the features of the technology appropriately permit the "blog author and information consumer the ability to create a running, public thread of malleable conversation" (p. 203).

The focus of the collaborations in these studies is limited to communication among the librarians, or organizations, and the patron/users. Perhaps because internal operations and workflow processes are far less intriguing topics, it is quite difficult to find much evidence in the literature of internal uses of blog software to assist with institutional knowledge management. Since most of these implementations are also protected behind security log-ins, the breadth of this sort of practice may be is difficult to gauge.

One such study is McIntyre and Nicolles' (2008) case study of the University of Canterbury's Library in which they describe how internal blogs can be used for communication in academic libraries, noting four advantages: convenience, cost benefit, capture best practice, and collaboration and communication. Whereas the cost, convenience, and collaboration benefits might all seem obvious, the ability to capture best practices has often been overlooked. These internal blogs become a "repository of institutional knowledge" (McIntyre & Nicolles, 2008, p. 685), incorporating information not retained by analog and other digital communication methods. The sharing of best practices by staff results in the development of a knowledge management system. This data records the institution's collective memory (McIntyre & Nicolles, 2008), which ultimately strengthens communication among reference desk workers and supports the goal of providing the best possible customer service to the patron.

A 2006 study of blog use in academic libraries by Draper and Turnage revealed that of the 265 academic libraries that responded to their survey about their blog use, 86.1 percent (174 respondents) use blogs for communicating events/news, new resources, etc. The second largest use, 70 percent (142 respondents), was for marketing the library. The

use of blogs for internal communication fell in the last group, 17.3 percent (35 respondents), and was combined with other uses such as general communication, article sharing and citation management (Draper & Turnage, 2008). The benefit of utilizing social software to affect internal processes appears to be overlooked by not only non-users but also by those that already utilizing blogs for some other purpose.

Employing blog software for internal communication:

Two Scenarios – Different Implementations

Between fall 2007 and spring 2009, the author of this paper was the primary initiator of a new workflow process to utilize a social software tool for reference desk communication and knowledge management at two different institutions. The new innovation was both technical and administrative in nature. The technical innovation involved transitioning to a new method of communication by utilizing a different tool. The administrative innovation exploited this technology to develop a knowledge base of institutional intelligence and a repository for operational practices.

Both institutions were non-research classified libraries in four-year primarily undergraduate universities with enrollments between 13,000-19,000 students. The primary purpose of investigating new technologies at both institutions was to discover methods that would better facilitate knowledge sharing between reference desk workers. Both university libraries selected the same free blogware (blogging software), Wordpress; yet, the technology was implemented in different ways to meet their specific needs. One institution chose to use the web hosted option while the other chose to host the software locally. The specific needs and concerns of each institution contributed to its method of implementation and the overall success of the innovation's adoption.

The Tool: Wordpress blog.

Blogware is software that enables any user to develop a self-published web log or personally themed webpage. Data posted on the site becomes part of a content management system for data storage and retrieval. As such "Blogging is simply a technology; it's a medium. The software does not define the content that goes into it" (Farkas, 2007, p. 12). Wordpress is free, open source blogware that can be implemented either as a web hosted application or downloaded and hosted locally. Wordpress utilizes MySQL, an open source relational database management system combined with PHP, an HTML embedded scripting language for customization. Wordpress was chosen by both institutions in this study because it is free, easy to use, and has a desirable level of privacy settings along with a huge support network of users. The Wordpress online community continually develops free plug-ins (widgets) and themes (skins) that extend and enhance the functionality of the blogware. The web version of Wordpress can be accessed at Wordpress.com (http://wordpress.com/), while the free open source downloadable application is available at Wordpress.org (www. http://wordpress.org).

Two Different Approaches – Web Hosted or Locally Hosted

The decision about which option would be best for a particular institution depends on a number of factors. These factors differ depending on whether the blog will be web hosted or hosted locally. **(See Table 1: *Factors influencing implementation choice*)**

Web hosted implementation.

➢ **Time:** Requires very little time to set-up and maintain. All of the upgrades are handled by the host.

➢ **Effort:** The amount of effort put into designing and monitoring the environment is determined by the blog administrator. Only requires a bare minimum of effort to get started.

- ➢ **Access:** The blog administrator decides how users access and interact with the blog. Most likely the privacy setting for an internal blog would restrict search engines from indexing the blog. Blog developers do not need access to a server.

- ➢ **Control:** The options are more limited for personalizing the look and feel and adding plug-ins for a web hosted blog. Yet, those options are sufficient to accommodate most users. Blog administrators have the same ability to monitor and control the postings and comments in both implementations.

- ➢ **Influence:** If the blog initiator's sphere of influence to affect workflow changes is relatively minimal then web hosting would be a better option, because it requires much less of an investment.

Locally hosted implementation.

- ➢ **Time:** Requires more time for set-up, downloading, and configuring, depending on the blog administrator's expertise and knowledge. Upgrades must be maintained by the hosting institution. Since much of the customization relies on plug-ins, there is always a possibility that upgrades will break some of the features.

- ➢ **Effort:** The blog administrator determines how much effort is put into the management of the environment since local hosting provides full access to the code that makes up Wordpress. The tendency is to spend more time tweaking the system on features that are easily handled on the web-hosted version.

- ➢ **Access:** Requires access to a MySQL database and PHP enabled server. There is complete administrative control to decide how users access and interact with the blog. The privacy settings options are greater for local hosting. For instance, blog access can be IP restricted or individual posts can be password protected.

- ➢ **Control:** There are limitless options for personalizing the look and feel and adding functional enhancement plug-ins for the locally hosted blog.

- ➢ **Influence:** If initiators are fairly confident that the blog will be adopted and will be received as an enhancement to workflow processes and even potentially spark other uses, then investing time and effort in the locally hosted option would be worthwhile.

There are advantages and disadvantages for either implementation. The following chart provides a quick overview of the two implementation options. **(Table 2:** *Advantages and disadvantages of web hosted and locally hosted blogs***)**

Installations, Outcomes and Lessons Learned

Location One

The reference desk at location one employed a total of twelve different desk workers who included full-time librarians, part-time librarians, and a library associate who answered an average of 500 face to face/phone reference and informational questions and an additional 75 chat questions per month. The traditional method of internal communication among staff was email messaging. Additionally workers were in the habit of printing out documents and leaving them at the desk and using the "Red Binder" for an undeclared classification of materials. By the end of the semester, a stack of papers would be piled by the reference desk computers. The binder was not often updated or weeded.

These legacy practices did not easily efficiently support staffs' capacity to share organizational knowledge or individual intelligence gained from past experiences. Information was difficult to retrieve when needed with emails often getting lost in email land. With a group of new reference desk workers all starting at about the same time, there was a desire to record and preserve the knowledge gained and to share the information with each other. As well, workers were interested in having greater ability to organize and search for information about repeat assignments and facilitate better communication with part-time staff who rarely interacted with the full-time staff. There

was consensus about starting fresh and building the knowledge base without mining old emails or systems to migrate data.

Location one chose to implement a web hosted Wordpress blog. This decision was reached because the staff developing the blog did not have access to a MySQL database or local server and had limited technical skills. They were interested in getting started quickly with little effort and only minor time commitments. The web hosted blog option provided adequate privacy settings and enough customization to personalize the environment. The distribution of the website address was limited to reference desk workers and bookmarked in the browsers of the reference desk computers. The blog's privacy settings masked it from search engines. The blog initiators, who also became the system administrators, developed basic guidelines that outlined scope and appropriate content for posts; these were displayed on the front page of the blog. They also jointly established eight basic categories for posts, including an "Intellectual Librarian" area, which was a light-hearted attempt to encourage sharing and discussion of library-related literature and topics. While the purpose of the blog was practical, effort was made to develop a space that was also friendly and fun, such as the inclusion of an image header that changed with the seasons and a witty tagline along with an animated meowing kitty image.

The new blog was formally introduced and demonstrated at a reference meeting, and instructional handouts were made available. Initial reaction to the innovation was very positive although the actual adoption of the new system was slow. The staff implementing the blog experienced some difficulty in getting a few librarians to establish Wordpress accounts, which is a requirement of the web-hosted option. There was also

reluctance by some to author posts because published items on the blog were perceived to be more public than email messages. Only a few participants actively posted; after the first semester there was a gradual return to leaving print-outs at the desk. More than a year after implementation, posts are still being made but the blog is not checked on a regular basis by users, and its social features are not being used. The blog remains primarily a one-way communication tool with individuals pushing out information to the group.

The lessons learned at location one were that changing deeply ingrained workflow processes even if the new method is quite painless, can still be a challenge. While new technological innovations may be implemented, users may not be ready or willing to embrace the enhanced capabilities. Blog initiators learned they needed to be more proactive about getting participants to post items and to join in a discussion. However, even if the technology is not fully utilized, the effort was not wasted. Blog initiators gained experience with setting up social networking software and developed insight into constructive ways to implement workflow changes while the system users were exposed to new technologies and ideas that they may not had otherwise encountered.

Location Two

Location two employed fourteen different reference desk workers, which included librarians, part-time staff, and professional staff and interns to the work the reference desk. In 2008, the staff answered an average of 1,300 face to face reference and informational questions and an additional 71 chat/email questions per month. The traditional method of internal communication among staff was a locally designed ColdFusion database system. An email was sent out to anyone subscribed to the reference

email list every time a new note (RefNote) was posted. The system offered limited ability

to search for old notes and no organizational structure or categories for the archived data.

Some operational information was also stored in a reference manual, on internal websites,

and in the reference desk filing drawers. There was a growing desire to phase out use of

proprietary software like ColdFusion. Reference desk workers sought greater ability to

organize and search for RefNotes, to provide keyword access to all information, and to

collocate information in one place. They felt strongly about not losing old content and

requested it be included in the new knowledge base.

Location two chose to implement a library hosted blog. Blog initiators made this

decision based on feedback from an informal discussion at a reference meeting about

employing new technology to replace the legacy system. The locally hosted option

provided enhanced features and controls, which were desired by the reference desk

workers and blog administrators. For example, the majority of potential contributors

wanted to continue to receive information via email. The locally hosted option allowed

for a plug-in to be installed that sends out an email to all subscribers when a new post is

made. This option also had advanced privacy settings that permitted post-level password

protection and the ability to restrict access to the blog based on IP recognition. Users

voiced a strong desire for the old data to be retained and transferred into the new system

to start the knowledge base. The locally hosted option provided for several different data

import options. Most importantly, there was significant IT support in the library for

implementing a hosted environment.

The initial install of the software took about a half-hour to complete after the

Digital Services Librarian was given access to the server. Blog initiators, who became the

blog administrators, personalized the look and feel of the site, keeping it simple,

professional, and practical. The site design was less playful than that used at location one

and did not include any specific guidelines or an introductory page. The data was

transferred over from the previous RefNotes system using an RSS feed import. Much of

the content was no longer relevant but was useful in developing the general post

categories. Blog administrators also established accounts for all users, setting basic

preferences which simplified the visual layout of the users' dashboard (their personalized

blog view). Shortly after launch, Wordpress released an updated version of the software.

Blog administrators decided to wait until the end of the semester before installing the

update, concerned that the changes would affect the customization and plug-ins. The

update was done manually by following an easy step-by-step process. It took about half-

hour and went as smoothly as the initial install. The plug-ins, which were deactivated for

the update, all reactivated with set preferences intact.

The blog was formally introduced at a reference meeting and step-by-step

handouts were provided with basic instructions. Although the initial reaction to the

innovation was guarded or skeptical, transition to the new system happened quickly after

launch. The immediately positive feedback included interest in implementing additional

blogs for other uses. To date communication on the blog is primarily one-way, with users

preferring to receive email notices about new posts, mimicking the functionality of the

legacy system. There has not been any further engagement, neither discussion nor adding

comments to other posts. Operational information remains dislocated in several locations.

The lessons learned at location two were that good support from knowledgeable

colleagues made for an easier introduction of the innovation and greater acceptance by

users. Knowing users' needs and introducing the change with these in mind will

positively influence the diffusion of the new technology. Collocation of all important

information will not necessarily happen automatically. Blog initiators promoted the easily

tangible benefits of the new technology but did not articulate the administrative

innovation goals of building a knowledge base. There needed to be a more proactive plan

to encourage the transition and adoption of the new system, including the use of

enhanced features and migration of important operational data. Hosting and customizing

is far less scary than one might think, but it requires some expertise and patience.

Analysis

In both scenarios the workflow transition to using a reference blog for desk

communication and knowledge management can be seen as successful yet incomplete.

In the context of Roger's Innovation Diffusion Theory (2003) all but one of the attributes

of the innovation weighed favorably toward adoption. Users could easily see the

(*relative) advantage* of a switching to the new tool which aligned with their values

(*compatibility*) and even provided enhanced methods for meeting their needs. The

complexity of the technology was minimal and allowed for users to interact (*triability)*

without high levels of anxiety.

These four attributes speak to the technological innovation -- using the new social

software for reference desk communication, which was adopted; but only so far as it

mimics the capabilities of the legacy system it was replacing. The administrative

innovation aspects of using the new technology for knowledge management to record,

organize and preserve individual and organizational intelligence, group knowledge

sharing and community building were not realized. Users may not have been ready to

engage in the advanced features, either because they did not fully comprehend the purpose or could not see the value, resulting in the innovation having poor *observability*, which weighed negatively on adoption.

Discrepancy in the adoption process follows the pattern of organizational lag. The benefits of utilizing the blog to achieve better communication among reference desk workers was easily understood and widely accepted while the goal to more broadly employ the technology for knowledge management remained vague, and, thus, not achieved. The perceived reason for this disconnect was the failure of the initiators to clearly articulate the broader administrative objectives and to demonstrate the value of implementing both the tool and the new workflow process. Aligning the goals would have eliminated the negative impact on the innovation's *observability*.

Looking further at Evan's (1996) model, ambiguity about the administrative innovation was probably the biggest contributing factor to the psychological resistance since "individuals with low tolerance for ambiguity are unlikely to espouse new ideas" (Evans, 1966, p. 52). No measure was conducted to gauge the users' level of tolerance other than informal discussion; however, without clear rationale that specified the long-term gains of the administrative innovation, users cannot be expected to visualize these benefits. Further, participants' could potentially have ingrained acceptance of organizational lag, either due to apathy or through the coping mechanisms that allow them to circumvent organizational policies (Evans, 1966). Determining the organizational climate, learning about local innovation history and addressing any issues before implementation would further guarantee success.

For both instances, more precise discussion about knowledge management and greater encouragement by blog initiators to further interact and contribute to the new system may have resulted in more active and engaged participation by users. These findings mirror those reported by McIntyre and Nicolle (2008) who suggest that regular posting and active encouragement are key to moving from the email distribution list model and to the successful adoption of a new system. They also suggested creating additional areas of engagement such as a "professional reading category" (2008, p. 686) that would spur excitement and conversation. Yet, simply creating the space may not be enough; making time to facilitate deliberate discussions and even developing a plan to transfer specific knowledge are advised.

Recommendations

Four recommendations should guide institutions as they consider implementing new technologies or transitions from legacy systems to new workflow processes.

Recommendation One: Align your objectives and articulate these clearly to those users who will be implementing the innovation.

- o Do not create barriers for adoption by failing to communicate the broader objectives of the innovation and/or the long term and short term returns.
- o Determine your participants' acceptance and apathy for organizational lag beforehand. Combat this with a clear implementation plan.

Recommendation Two: Know the climate for change within the library and department, but do not let colleagues' expectations and reactions deter efforts.

- o Have an exploratory conversation with users beforehand. Use this information to better inform the introduction of the idea and the reasons to

make the switch to the new process. Topics discussed should determine

the method chosen to launch the system.

o Take the pain and anxiety of transitioning out of the equation. Set up

users' accounts for them, pre-set preferences, etc. Advanced users can

then customize their individual accounts if they so desire.

o If the goal is for the new tool to facilitate discussions be prepared to

actively engage users directly and encourage them to make use of these

"social" features and demonstrate how they can be helpful.

Recommendation Three: Understand users' needs and implement a system that best

meets these needs.

o Customize to accommodate demands but within reasonable time and effort

parameters.

o Provide users with multiple methods to learn about and experiment with

the new system.

Recommendation Four: Know the technical abilities of the potential system

administrator and those of the library support staff. Exceeding these can result in a faulty

or failed implementation.

o Limited customization will not affect actual function or the purpose for

implementation. Stay focused on the primary purpose.

o Know the library's IT support staff capabilities, time restraints, level of

access to servers, etc., and take every opportunity to express appreciation

to them for their assistance.

Conclusion

Open source social software to facilitate institutional communication and knowledge sharing, as well as knowledge preservation, is relatively simple to implement and does not require a great investment. While many academic libraries have embraced the use of social software tools for external communication, relatively few have also chosen to exploit the same tools for improving and enhancing in-house processes. The McIntyre and Nicolle (2008) study that examined academic library use of blogs validates the compelling advantages of using these simple tools, which furnish the library with a "searchable archive"… that becomes a "valuable knowledge resource which preserves information about an institution and makes it available at point of need" (p. 688).

Even if librarians switch to using new communication methods, they are not necessarily embracing the added value of social networking; instead of utilizing the tool to increase dynamic dialogue and collaboration, communication remains primarily one-way. Adoption of a new method does not automatically imply that it will be employed in innovative ways or exploited for greater benefits. The lesson learned is that these types of transformative uses must be encouraged and nurtured. Academic libraries need to recognize where legacy workflow patterns no longer are truly sustainable to fully provide exceptional services and consider implementing new systems. The risk of organizational lag is a real concern because the "greater amount of organizational lag, the lower is the rate of organizational growth" (Evans, 1966, p. 52). In today's rapidly changing environment, libraries must remain on the forefront of innovation.

Cutting edge practices may already be taking place within the library but have been overlooked as methods for facilitating internal processes. As demonstrated in

McIntyre and Nicolles' (2008) case study, even causal use of the blog contributes toward

developing a knowledge base and building the organization's long term institutional

knowledge, which is perhaps the greatest benefit of the transition. Librarians can easily

implement simple changes that use innovation to transform the work place and ultimately

better serve the patron and continue the tradition of being change agents and pioneers.

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