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LIS 768

Approaches to New Librarian Models

The role of the library is changing. With an ever-increasing rise in the use of technology and web integration into daily lives the library and librarian must evolve with their users and reach out to potential users. In Here Comes Everybody, Clay Shirky quickly outlines the role of a professional librarian, "In particular, when a profession has been created as a result of some scarcity, as with librarians or television programmers, the professionals are often the last ones to see it when that scarcity goes away. It is easier to understand that you face competition than obsolescence." (p. 59) It is undoubted that in this "information age" the librarian must recognize their changing role, as information is now an abundant, overwhelming good. Many librarians use digital and web presence to reach users and advertise services. This paper will discuss the importance of managing appropriate technology, beginning with the front end user experience and ending with the back end and its ecological effects.

In Library 2.0 Casey & Savastinuk state, "By putting ourselves out there amid teens and young adults, we will be better positioned to bring the library to our users, instead of always trying to bring our users to the library." (p. 92) This is a great example of the contemporary philosophical concept of librarian outreach. Digital outreach in this sense refers to any situation where a librarian creates or uses digital marketing to communicate with patrons i.e., Twitter, Facebook, library websites, or Web 2.0 tools. To maximize the effect of their outreach librarians should pay close attention to design, usability, and appropriateness in their digital presence.

The meaning of appropriate technology is very narrowly described by the U.S. Congress's Office of Technology Assessment as "...being small scale, energy efficient, environmentally sound, labor intensive, and controlled by the community." (Dorf p.101) These are all guidelines that librarians should keep in mind when selecting and implementing technology. The last rule is immensely important for the contemporary librarian; patrons should not be forced to use technology they cannot control. People are experienced with and accustomed to being able to customize and tweak technology to best meet their needs. The technology implemented in your library should have the ability of being customized by your librarians. The Social OPAC, developed and implemented by John Blyberg, is a great example of a technology that can be controlled by the community it serves. (<http://thesocialopac.net/>)

The needs of the community must be accessed as to provide the appropriate amount of technology to the patron. In the article *Appropriate Technology* written by Barrett Hazeltine, "A central concept of appropriate technology is that the technology must match both the user and the need in complexity and scale." (Dorf p. 101) For example, it might be difficult and unnecessary for a librarian to develop a Second Life outreach program when the patron base has never heard of Second Life. When researching and developing technology tools for the patron to use, librarians must keep in mind that "Introducing a new technology related to an existing one has two other advantages over a completely new technology. It is less disruptive to the social structure and it can be adapted." (Dorf p. 103) The librarian must find ways to seamlessly integrate with the technology already being used by their patron. A great example of librarians integrating with technology are those who implement SMS mobile reference at their

library. In the article *Text Messaging in an Academic Library: Integrating SMS into Digital Reference* Hill, et. al, describes the need for SMS reference, "According to a Student Monitor study, 'there is a record number of student cell phone owners' as '5.2 million or nearly nine in ten college students nationally now own a cellular telephone.'" (p. 18) Keep in mind this survey was taken in 2005 and the number of cell phone owners, as well as the percentage, has undoubtedly increased.

The need for librarians to integrate with mobile technology is undeniable. The *Text Messaging in an Academic Library* article addresses the uses for SMS technology but somehow the librarians seem to misunderstand the format and use of text messaging. The librarians advised "The reference librarian at the reference desk monitors the e-mail account, answering e-mail and text message questions as they come in, as time permits. As such, the text messaging reference service is an asynchronous service with the same turnaround time as the e-mail reference service. Patrons are advised that they should expect answers within 2- hours when the library is open." (p. 23) The text-messaging medium is meant to be quick with both parties furiously exchanging information. A student will text message you a question they need answered immediately, if they could wait 2-3 hours they would send an email. The purpose of text messaging versus email is further proven within the article when the librarians list the types of questions they receive via SMS, "...location of computer facilities...Who wrote *The Great Gatsby*?" (p. 25) I applaud the librarians for their efforts but they did not address the needs of the community or behavior of technological medium.

In the article *The Mobile iRevolution* by Karen Coombs there is a large discussion on managing library material on not just a web format but also mobile format. The author

assesses the importance for librarians to adopt mobile applications from the 2008 Horizon Report which states that within two to three years mobile broadband and devices will be key in daily technology. One of the most salient points within this article is creating iPhone applications that allow users to search the libraries catalog through OCLC. If the library does not have the material the patron is searching for, the application will then direct them to the closest library that does have the material. Karen Coombs also suggests equipping librarians with iPhones so that they can perform their daily tasks while roaming the library. Because the University she works at has Wi-Fi within the library, the reference librarian can answer emails and consult the catalog while assisting patrons within the library. Other suggestions within this article are to incorporate XHTML on your website so that it can be viewed via mobile.

This brings up an interesting dilemma encountered by the CEO of Geek Squad. In the book Wikinomics by Don Tapscott, the CEO of Geek Squad, Ross Mayfield, is interviewed concerning the development and implementation of wiki software within his company. He created a powerful wiki that could be accessed by any member of the Geek Squad around America. He was surprised to see that after several months after the launch date the wiki remained unused. Mayfield brought up concerns about teams he was rarely able to communicate with because they never used the wiki. To his surprise his colleague replied that they always spoke with those employees via an online game. Mayfield was shocked to discover that nearly 150 of his Geeks were playing online games together, in which they would often "talk shop" and trade tips. This is exactly what he had tried to establish with the wiki, but did not take into consideration how the Geeks already communicated. This is a crucial lesson that librarians should pay close attention to. It will

be difficult to implement a particular social software when your patrons, or staff, are fully entrenched in an existing social network. One of the main concerns that one must keep in mind when deciding on appropriate technology is "...whether people will accept the appropriate technology approach or the inventions designed by the appropriate technology." (Dorf p.105)

Once the librarian has decided upon an appropriate technology, development and implementation is essential in a fashion that generates the most ease of use for the patron. The study of usability in a library is extraordinarily important. When designing a library website or technological products, it is important to remember that "The difference between a good human-product interface and a great one is often a war of nanometers or nanoseconds." (Gross p. 48) This means that the ability at which one is able to easily access information can determine the popularity of a product. For example Google's home page is friendly and quite easy to use. For a library, usability is best described as, "If patrons come to your library and are able to use your services, then your library has usability. If they encounter difficulties or frustrations, then perhaps some of the 'principles of usability' need to be applied" (Davidsen p. 7) In order to provide proper usability one must directly observe the patrons and note how they interact with the library and its products.

Studying the behavior of the patron in the physical world is key to understanding how they will interact with digital outreach applications of the library. "Knowing patron tasks and workflow is crucial to the success of your website." (Davidsen p. 51) Recently the New York Public Library "Lab" department posted their usability testing project with corresponding results. The New York Public Library asked patrons visiting their website

to participate in a usability testing experiment. The patron would be prompted with a question and then need to click the appropriate answer/response on a mockup of the New York Public Library's website. This allowed the librarians to gather data on how patrons would use their new website. The information gathered allowed the librarians to tweak and modify the website so as to best meet the needs of their patrons before launch. An important fact that the New York Public Library learned was "...one big lesson is that our global navigation designs with fewer choices vastly outperform those with more."

(Lascarides) The New York Public Library is planning on incorporating a 2.0 outreach portal on their website which lists information such as blogs, iTunes, facebook groups, etc. According to Lascarides the usability testing online "garnered the most free-form responses of any question so far. We haven't cracked the Community code yet, but we're getting closer. The ability to quickly get follow-up questions (even seemingly trivial ones) in front of users is proving to be incredibly insightful." (<http://labs.nypl.org/>)

Many libraries are now interested in adding Web 2.0 unto their already existent websites. Although Web 2.0 websites can bring enhanced satisfaction and interaction from patrons planning and design must be incorporated into the implementation process. In an article published by BBC news web usability expert Jakob Neilson "warned that the rush to make webpages more dynamic often meant users were badly served." (BBC News) Libraries must make sure to edit and create the library website with usability as the key focus point. Two library websites which have integrated 2.0 technologies while still maintaining high levels of findability and usability are the Darien Public Library and the Ann Arbor Public Library. Both websites feature a Drupal CMS which has been edited to contain a prominent search bar. The libraries established granted the ability for

users to rate, comment, and establish blogs about library materials. Another recommendation given by Neilson is "Good practices include making a site easy to use, good search tools, the use of text free of jargon, usability testing and a consideration of design even before the first line of code is written. " ([BBC NEWS](#))

When designing or redesigning the library's website, it is important to keep in mind the power of simplicity. In Usability Testing for Library Web Sites authors Norlin and Winters outline this principle "The information needs of the end user are constantly subjected to change; therefore, the needs are multifarious and dynamic. Superior web designs satisfy those needs by keeping all aspects of the Web site, whether it is content or presentation, simple. And simple can be hard." (p. 12) In a recent blog post at www.walkingpaper.org, Aaron Schmidt points to the design of the Collings Wood Public Library website. This website features an enormous search box on the front of their page. This design obviously simplifies the searching process for the user and quickly allows them to direct their energy towards what they are looking for. This is exactly the difference noted previously where design methods make that nanosecond of difference result in a greater user experience. The library has equipped the search box to recommend search titles to assist the patron with navigation through often heavily loaded librarian jargon catalogs.

Another aspect of appropriate technology, as outlined, is the ability of the technology to be sustainable for the environment. In the article *Information Technology in Sustainable Development* James R Sheats describes how technology has shaped the environment, "...the ecological condition of the planet continues to worsen...One of the most ominous of recent observations is a quantitative analysis of the extent to which

humans dominate earth's ecosystems: one-third to one-half of the land surface has been transformed by human activity with both land and water supplies nearing fundamental limits." (p. 146) A feature of digitization that is not often discussed is the hardware or how it can affect the environment. The New Scientist recently featured an article stating that, "...with more than 1 billion computers on the planet, the global IT sector is responsible for about 2% of human carbon dioxide emissions each year – a similar figure to the global airline industry." As a community which relies heavily on technology and the ever-increasing demand for digital information, it is imperative that the library community pays attention to the ecological impacts of digital technology.

The rate at which data storage is growing surpasses the growth in the airline industry: "in 2006, 48% more data storage capacity was sold in the UK than in 2005, while the number of plane passengers grew by 3%." (New Scientist) This is extremely shocking to most people who would not intuitively link digitization of print media (which is stored on servers) to an affect of large amounts of carbon emissions. In addition to the actual emissions caused by servers, it is estimated that the United States alone will need more than a dozen new power plants to power all of the servers and information by the year 2011. This is a tremendous ecological concern and librarians should turn to sustainable resources for their servers and digital preservation. Librarians have the tendency to catalog and save any and all material; with the digitization of media this could become a harmful ecological practice. According to the New Scientist "The survey also revealed that considerable amounts of electricity could be saved by more efficient data storage: 60% of the departments said they were using less than half their storage capacity and 37% said they are storing data indefinitely." Many companies now offer

sustainable powered servers and hosts to store information. Phil Nail who runs a small server company has converted his entire company to solar power, which dropped the cost of electricity for the server to maintain itself to 0. (Server Farms Go Solo) As a company which is constantly expanding their server storage Google has decided to lead the way in sustainable server hosting. Google is planning on creating server barges which would float in the ocean. These barges would be solar powered and cooled by the ocean waters that surround them. This would not only create a sustainable data storage solution but also increase the amount of storage space and speed of the servers. (Google Planning Offshore Data Barges)

Wade Roush addresses this fact in the article *The Infinite Library*. Roush discusses Google's new plan to digitize huge portions of written material, "...digitize a big chunk of the 60 million volumes (counting duplicates) held by Harvard, Oxford, Stanford, the University of Michigan, and the New York Public Library in a matter of years." (p. 2) With the digitization of this much material, libraries in the UK are moving largely uncirculated material to huge warehouse complexes which are currently under construction. According to Jeffries in his article *Inside the Tomb of Tomes* these structures will house, "... 262 linear kilometers of high-density, fully automated storage in a low-oxygen environment. It will house books, journals and magazines that many of us have forgotten about or have never heard of in the first place." This immense collection seems almost ridiculous, but is justified by Rory McLeod who is interviewed by Jeffries, "It's been estimated that €3bn are lost across Europe entirely due to bad management of digital files in libraries."

In the article *Keeping Track of Green Libraries*, librarian Monike Antonelli is interviewed regarding ecologically sustainable libraries. Antonelli states “I want the library community to be able to use my web site as a place to get ideas on how [to] become green...As we enter a time of crisis brought on by energy depletion and climate change I believe that libraries are poised to play a major role in the survival of local communities.” One of the major roles for libraries will be to establish and nourish the community where they exist. Many libraries have taken the initiative to develop and implement sustainable energy and architecture projects at their library. The website Green Libraries (GreenLibraries.org) was created by Anonelli to catalog and obtain information about libraries making commitments to sustainable energy. The Hayden Library in Cambridge, for instance, uses solar powered panels on the roof to help subsidize their energy use. According to the Green Libraries web listing one of the branches of the Ann Arbor Public Library is utilizing interesting forms of sustainable technology, "The library building uses recycled material in the roof, walls, window frames, carpet, and insulation. Also incorporates locally produced low energy content concrete masonry, renewable resources, and efficient lighting. The grounds will include native plant species to assist with the restoration and management of the wetlands surrounding Malletts Creek." The Pittsfield Branch is giving back to its community in a very unique way by assisting in ecological restoration in the area.

By investing in sustainable technology the library will eventually save money. This money can then be used to invest in better outreach programs and materials allowing the library to operate competitively in the information market. According to the Green Libraries websites regarding Utah Valley State College Library, "The library is 65

percent to 90 percent more energy efficient than previously constructed buildings. It is estimated that the library will save \$100,000 per year in utility costs. The building includes high-performance glass that lets in light but cuts out heat; motion sensors that shut off lights if the space is unoccupied; a process that uses excess heat to warm other areas of the building; and panels that block light in the summer but allow for warming light in the winter." Organizations should use sustainable technology to streamline their operations and allow for competition.

Libraries must pay close attention to their community and users when developing and implementing technology, design, and architecture. These three fields are areas in which libraries have the opportunity to apply the fields of appropriate technology and usability. By listening to the user and community the librarian will be able to remain competitive, relevant, and needed at their library. Social networking, advanced technology, and environmental consciousness are trends which libraries simply cannot afford to ignore. The library must constantly assess, implement, and improve upon their business model and efficiency.

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