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Effects of Technology on Libraries

For decades, libraries have been a cornerstone of communities and the custodian of knowledge for all. But times are changing. How has technological advancement affected libraries and the way they serve their patrons? Arguments have been made regarding libraries becoming obsolete due to technological advancement. However, libraries have often been at the forefront of technology by offering internet access to the community at an early stage. Early on, they began providing websites to offer services over the internet. They later expanded to include research and support services via the internet. Later, eBooks became another major technological advancement that libraries adopted. Libraries continued to evolve by providing learning centers and personal services such as job search, resume, and interview support to patrons. Often this expansion of services has required libraries to reallocate space in order to provide these new services. The library has always had a special place in my heart as a retreat where I could go if I needed a little quiet to work on a project or read a book. I have been able to see the changes first hand. The advancement of technology has required libraries to make extensive changes, in essence reinventing themselves, in order to stay relevant in the digital age and meet their patron's needs.

To begin, it is short-sighted to believe libraries have become obsolete due to technology. In a report by the BBC, they cited thousands of jobs lost and hundreds of libraries closed across the UK ("Libraries "Facing Greatest Crisis"") while a follow-up piece by John McTernan states that "Libraries are less and less popular every year." Some people may agree with the premise that libraries are changing and shifting in the

face of economic struggle. Also, there may be a need for libraries to close or consolidate to better pool resources. This consolidation can be the catalyst in order to make the changes necessary to meet the newly expanded needs of their patrons. However, both articles look at the libraries as being only about books. In fact, per the BBC article "… 343 libraries closed. Of Those 132 were mobile services…" ("Libraries "Facing Greatest Crisis""). These largely dealt with limited services such as book distribution. If one looks solely at that aspect, it is easy to understand why some would come to the conclusion that libraries are obsolete. It is possible to believe that technology negatively impacts libraries with eBooks and online services. However, a study of American library habits shows

> Some 65% of all those ages 16 and older say that closing their local public library would have a major impact on their community; another 24% say it would have a minor impact. In addition, 32% say that closing their local public library would have a major impact on them or their family; another 33% say it would have a minor impact. (Horrigan 6)

To reconcile this discrepancy, people must look past libraries being book depositories and investigate deeper into the services they offer today and aspire to offer in the future.

The first major disruption to libraries was the internet itself. In fact, this was the start that has led most of the advancement moving forward. In the early days, the library was the only way for users to gain access to the internet as libraries provided not only this access but also the computers needed to get online. As time progressed from the early days of the internet the libraries kept pace, increasing access speeds and capabilities. Later, they invested in infrastructure to allow patrons to bring their own computers in and ultimately started providing wifi which allowed people to use the library's internet even when closed (Horrigan 17). Today a patron can walk into some town libraries and be

loaned a wifi hotspot that they can take home or even with them on a trip. This hotspot will provide free internet access to them and their family at no charge. A high percentage of Americans surveyed "… say free access to computers and the internet is a "very important" service of libraries" ("Library Services in the Digital Age" 1). This internet access, while an early trend that was easily integrated into the current library of the time, set up libraries for greater things to come.

Libraries started building websites and mobile applications to provide general information to patrons such as hours and event calendars. Slowly, they added services such as the ability to look through the book catalog and reserve or renew books online. Later that expanded to more services such as the ability to access some research portals or ask the librarians questions online. The library website has now become the virtual interface to the library allowing a whole host of services, some of which will be covered later in this report. This has turned out to be a valuable resource as "… 22% of those ages 16 and older visited a library website or used a library mobile app in the previous 12 months" (Horrigan 14). As library usefulness is considered people cannot just count the numbers of patrons that come through the physical doors but must also count those that come through the virtual ones.

The library has always been a place for research and discovery, and library staff has always been a willing part of that process. But as technology allowed, libraries opened their databases of high-quality information for all to see and use. However, with online search engines such as Google and Bing becoming popular people started using them as their sole research tool. A 2013 study showed that more than 2/3 of library patrons would likely use a service "allowing patrons to pose questions and get answers from librarians" ("Library Services in the Digital Age" 1). Libraries once again pivoted,

becoming a sounding board and virtual search assistant. By now most people know not all the information returned by these search engines is reliable, accurate, or relevant. Also, so many results are returned that they may be inundated manually trying to find those tiny fragments of information required to properly satisfy the question. Libraries and staff continue to assist by teaching patrons how to narrow searches and identify the reliable information from the rest. They also assist by suggesting other research engines that may have more reliable information.

The second major disruption and a true inflection point for most libraries have been the introduction of eBooks. This introduction is also what caused many people to think libraries were going to go the way of music stores when digital music was introduced. Libraries have been trying for more than a decade to properly integrate eBooks within their offerings and often times fighting with a publishing industry trying to hold on to their antiquated process and thinking. According to Françoise Benhamou "The development of an eBook market leads to disintegration in the publishing value chain" (125). Unfortunately, eBooks have only become a small part of library users with "66% of those who visited a library in the past 12 months say they borrowed print books" (Horrigan 16). This may be due to the complexities of Digital Right Management that publishers have placed on their books. For most people the challenge of using eBook readers is not the act of reading the book; it is getting the book on the reader.

Moreover, eBooks and technological advancement had another effect on libraries which was the library becoming a learning center for digital technology. With some adults not familiar with the technology, they turned to libraries for help. Of Americans surveyed, 95% say providing programs and classes was either "important or very important" to them ("Library Services in the Digital Age" 4). The greatest need came

from assistance with eBooks and digital readers but expanded into other areas such as smartphone and tablet use, social media use, and digital audio and music. They have taken on the task of digital literacy with classes in general computer use and common office applications such as the Microsoft or Google suite. Libraries continued this with basic capabilities such as e-mail and social media classes where patrons can be taught how to set up an online presence and connect with others.

A further expansion of services that technology helped bring about was using the library as a job search and employment resources center. In the study of "those who had visited libraries in the past 12 months … 36% say they looked for jobs or applied for jobs online" ("Library Services in the Digital Age" 4). This has opened up yet another service to the community for which libraries serve. Libraries are now assisting with resume and cover letter writing, job search, and completing online applications. Some libraries continue to expand this effort with interview preparation classes including mock interviews.

This shift in services often required libraries to reevaluate how space was allocated. Some of the newer, more modern libraries have reallocated or expanded to include digital learning and media centers. They also continue to expand their teaching abilities and facilities to include digital publishing, videography and 3d printing ("Library Services in the Digital Age" 6). However, this space was not able to be reallocated from the stacks as libraries are still holding on to their physical media even in light of growing support to reduce them from their patrons. A recent report by Pew Reseach Center found "30% of those ages 16 and over think libraries should "definitely" move some print books and stacks out of public locations to free up more space for such things as tech centers, reading rooms, meeting rooms and cultural events; 40% say libraries should

"maybe" do that" (Horrigan 4). A single purchase of one ebook can cover three different needs, regular print, large print, and audio thus saving significant space at libraries allowing them to enhance capabilities and offerings without the need to physically expand.

For as long as there has been technology, libraries have been studying and adopting how to put this technology to work in order to better serve their patrons and their community as a whole. Libraries continue to fight against the decay of literacy in America, and they will use technology as a new tool in their arsenal. From the early adoption of the internet and creating websites so they could provide online research and research support, they have shifted to embrace this new paradigm. Later they adopted eBook technology and built learning centers to provide more services to the community. Most recently they began providing personalized services such as job and employment services. All the time, libraries have been taking into consideration the precious space they have and making modifications as needed to embrace the new technologies and the needs of the community. While sometimes technological advancement will mean that drastic changes may occur, such as the eventual elimination of the adult stacks, it does not mean their core purpose will go away. In fact, libraries will continue to reinvent themselves in the service of their patrons and the communities in which they serve.

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