Multi-Million Dollar Museum with a Declining Visitorship

By:

Jillian R. Green
B.A. Concordia University Chicago, 2013

Thesis

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Defense Committee:
Therese Quinn, Chair and Advisor
Claudine Ise, Museum and Exhibition Studies
David Settje, Concordia University Chicago

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Acknowledgements

In 2005, the Abraham Lincoln Presidential Library and Museum (ALPLM) was willing to build a multi-million dollar theatre, known as Holavision, featuring holograms to educate and entertain their museum audience. There are only two theatres of this kind in the United States, as of 2015, and the museum staff believed that its uniqueness would draw in visitors; however, their statistics have shown a continuous drop in their museum and theatre attendance over the past years. Despite interviews from ALPLM guests discussing that they truly enjoy their experience and would like to see another Holavision Theatre, or something similar, in other museums, data show that the exhibit does not create a consistent or growing museum audience. This paper will discuss the evolution of the use of digital and mobile devices in museums, along with the advantages and disadvantages of creating technology--heavy exhibits in museums. When writing about both technology and interactive exhibits, I am talking about exhibitions that use iPads, digital surveys, audio tours, video recordings, the use of social media and much more. Authors such as Nina Simon, Beverly Serrell, Loi Tallon and John Terrell are used throughout this paper to help understand the positive and negative influences interactive technology plays within today's museums. Through a close look at the Abraham Lincoln Presidential Library using annual reports, personal statements and other documents, my research will conclude that advanced technology within exhibits, such as holograms, may interest the individual museum visitor more, but it does not necessarily create a larger museum audience throughout time. After taking an in-depth look at ALPLM, the paper will then talk about the newest technology created and developed by the University of Southern California's Shoah Foundation and their project, *New Dimensions in Testimony*. This innovative exhibit turns a living Holocaust survivor into an interactive hologram. The Shoah Foundation believes that this type of technology could continue the survivor's stories once they pass away. This exhibit, however, has not yet been

introduced to museums but the Foundation said that it should be presented in museums in the Spring or Summer of 2015. After researching both of these institutions, I have come to conclude that interactive exhibits should be studied thoroughly before being implemented to ensure the museum understands the advantages and possible disadvantages, monetarily and otherwise, of their decision. If museums and institutions put more time and effort into finding out what their museum guests would want to see within their exhibits and truly understand the cost and maintenance that will have to go into keeping their exhibits up to date, perhaps interactive exhibits will be more common in the future.

Technology Today

Americans are engrossed with smart phones and other types of digital technologies. The use, cost and dependency on these devices has impacted the world, especially in social settings. Public places such as restaurants, coffee shops, libraries, and many others are offering free Wi-Fi to attract customers. People can be seen on their phones in numerous public places checking their e-mails, consulting social media such as Facebook, Twitter and Instagram. People are using their cell phones so often, that it led 14 states to have passed legislation to "prohibit all drivers from using hand-held cell phones while driving."[1] Despite the dangers mobile devices may cause, in some settings, many public places are also using complimentary Wi-Fi to attract more customers. "Two separate surveys confirmed that smartphone penetration has not only passed half of all mobile subscribers, but has gone well beyond 50% of adult Americans for the

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[1] "Distracted Driving Laws." State Distracted Driving Driving Laws. January 1, 2015. Accessed March 1, 2015. http://www.ghsa.org/html/stateinfo/laws/cellphone_laws.html.

first time."[2] Smart phones, as stated, are becoming more popular within the United States. This could be a prime opportunity for museums to use smart phones to attract the people of all ages into their institutions.

Museums are among these public places that are attempting to use technology, mobile applications and free WiFi to create a larger audience. Nina Simon, the author of The Participatory Museum, who helped to establish 'participation' as a primary mission of museums, states "Over the last twenty years, audiences for museums, galleries, and performing art institutions have decreased."[3]

Even though museum audiences have declined in the past twenty years, museums and other institutions are slowly implementing more technology within their exhibits to create more engagement within their exhibits. For example, *Nazi Propaganda* is a traveling exhibit created by the United States Holocaust Memorial Museum (USHMM) which uses smart phones to enhance their audiences' experience. There are images in the exhibit that can be photographed and the guest will receive more information about that image from the USHMM website. Another very interesting technological aspect is that a museum guest can receive pre-made text messages from a Holocaust survivor. The guest calls a number and will receive text messages asking if they are at a certain part of the exhibit and the Holocaust survivor will then explain, through text, more about the image being seen and a story from her personal experience living in Nazi Germany. While being trained for this exhibit, a representative from the USHMM acknowledged that the technology they are using, text messages, engages the guest more and they are in the exhibit longer than those who did not use the text message tour. According to

[2] Rogowsky, Mark. "More Than Half Of Us Have Smartphones, Giving Apple And Google Much To Smile About." Forbes. June 16, 2013. Accessed March 6, 2015. http://www.forbes.com/sites/markrogowsky/2013/06/06/more-than-half-of-us-have-smartphones-giving-apple-and-google-much-to-smile-about/.
[3] Simon, Nina. *The Participatory Museum*. Santa Cruz, Calif.: Museum 2.0, 2010. i

Beverly Serrell, author of <u>Writing for Exhibitions</u> and <u>Paying Attention: Visitors and Museum Exhibitions</u> writes, "By knowing more about the current trends of visitors' time and use of exhibitions, museum practitioners can better predict or anticipate patterns and make better decisions in the future."[4] By observing museum visitors walking throughout the exhibit, museum staff can take note of what makes the visitor slow down, what are they reading, which technology are they using: their mobile device or the devices provided by the museum, and use all of this information towards creating a more immersive exhibit.

Since smart phones and other digital devices, such as iPads, are becoming more popular, this creates many challenges for museum workers including questions about what the museum staffs can create or change that will create a larger museum audience and "What can museums do to become a vital part of the people they don't serve now?"[5] There cannot be one simple answer to these questions because no two museums are the same nor do they attract the same audience; however, many museums now use innovative exhibits by using technology, such as holograms, in attempt to create a larger audience. Using these types of digital exhibits provides many advantages for museums such as, "variety of interpretation, engagement of visitors, outreach to new audiences, support for orientation, and flexibility with content distribution."[6] These digital exhibits include technologies such as: iPads, digital surveys, video recordings, the use of social media and much more. Nina Simon states that "Interactive exhibits, when successfully executed, promote learning experiences that are unique and specific to the two-way nature of their

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[4] Serrell, Beverly. *Paying Attention: Visitors and Museum Exhibitions.* Washington, D.C." American Association of Museums, 1998. 3.

[5] Farrell, Betty, and Maria Medvedeva. "Demographic Transformation and the Future of Museums." *American Association of Museums*, 2010, 5. Accessed December 9, 2014. http://www.aam-us.org/docs/center-for-the-future-of-museums/demotransaam2010.pdf.

[6] Tallon, Loi. *Digital Technologies and the Museum Experience: Handheld Guides and Other Media*. Lanham: AltaMira Press, 2008. 81.

design."[7] This two-way nature not only benefits the museum, but the guest as well. The technology that will be discussed in this thesis includes smart phones, touch screens (such as iPads) and holograms that are used within museum exhibits to create a unique experience for their guest. The following section will indicate that many museums do not use mobile technology even though they claim to be enthusiastic about the potential for mobile technology. There are many reasons, particularly monetarily, that hinder museums from implementing interactive exhibits and mobile technology.

2010 American Association of Museums Mobile Technology Survey

Do museums use mobile technologies, why or why not? In 2010, The American Association of Museums (AAM) took the initiative and sent out an e-mail survey to all of its members regarding the use of technology in the members' museums. 2,285 members responded and every state was represented in the research. In addition, two members outside of the United States were included.[8] The question in the e-mail read as follows: "What mobile technologies does your museum currently provide its visitors? (Mobile technologies include handheld devices provided by the museum or visitors' personal devices, such as cell phones, which enable access to the museum, its collections, or other forms of engagement.)"[9] The results discussed the type of devices that that were used and the percentage of museums that used:

- museum- provided device, audio-tour only, 20%
- cell phone guided audio tours, 16%
- smartphone applications (i.e., apps), 5%
- museum provided device, multimedia tour, 4%;

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[7] Simon, *The Participatory Museum,* 5.
[8] "2011 Mobile Technology Survey." *American Association of Museums*, 2011, 3. Accessed December 7, 2014. http://www.aam-us.org/docs/center-for-the-future-of-museums/aam_mobile_technology_survey.pdf?sfvrsn=0.
[9] Ibid, 10.

- text message reminders/alerts, 4%
- QR codes, 3%; Mobile activity/game applications, 3%. [10]

The results showed that one in every twenty museums used smartphone applications or other multimedia tours.[11] (See Figure 1.1 for chart). These statistics show that the majority of museums that responded to this survey mainly used audio tours within their institutions. However, other tour options included some type of technological device, such as cell phones, smartphone applications and QR (quick response) code. Less than 1% of the museums interviewed used smartphone applications or different types of multimedia tours in 2010.

As AAM stated, digital and mobile experiences are not just fads, and "museums are enthusiastic about the potential of mobile technology."[12] However, if museums are so enthusiastic about its potential, why do only one out of twenty museums use different forms of multimedia tours? AAM asked those who participated in their survey, "What are the primary reason(s) why your organization does not offer or use mobile technologies?"[13] The answers, starting from most common to least common, are as follows:

- no dedicated budget for mobile
- too many other demands or internal resources
- insufficient staff time
- lack of visitor demand/not sure of visitor demand
- too expensive, mobile is not an institution priority
- insufficient staff training
- insufficient knowledge potential revenue
- insufficient knowledge mobile products
- not sure how to evaluate effectiveness
- no field wide standards or best practices

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[10] Ibid, 10.
[11] Ibid, 10.
[12] Ibid, 4.
[13] Ibid, 11.

- don't want visitors using mobile device and mobile technology is too trendy. [14]

Even though it seems that the AAM museums are enthusiastic about mobile technology and understand that it mobile and digital technologies are not simply a trend, not all museums can afford to keep up with the changing technology. All museums surveyed by the AAM mentioned that funding, including the cost and maintenance of these devices was a major hindrance in their decision to include this type of experience within their exhibits. This is extremely important to note. Museums cannot simply buy some type of technological device and implement it into their exhibits. They need to program the device, have it charged during museums hours, pay for maintenance, and, perhaps, hire someone who is in charge of all of the digital technologies throughout their institution. For this reason, implementing digital technologies in every single museum across America is simply not feasible.

Evolution of Technology in Museums

I will begin the discussion of technology in museums with the creation of audio tours and, later, digital applications on mobile devices and holographic images.

> From the early days of linear tours replete with end-of-stop bleets and classical 'traveling music', to direct access machines with multiple options, to non-museum-sanctioned podcasts, the audio tour has become a common part of the museum experience.[15]

Even though the concept of the audio-tour has changed significantly with the advancement of technology, the essential idea of the audio tour has not changed: "information is orally presented to the visitor via electronic device."[16] Previous studies, in both art and non-art museums, statistics and interviews demonstrate that museum visitors do not always enter a museum

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[14] Ibid, 11.
[15]Tallon, *Digital Technologies,* 63.
[16] Ibid, 63.

knowing what they want to see. They look to the museum for structure and an audio tour is a part of this structure; "the information provided by audio tours enhances the museum experience more than other presentation formats."[17]

After the creation of the audio tours, the next big changes in museums were the creation of participatory exhibits and the use of devices, or "mobile multimedia."[18] The introduction of mobile multimedia began in the late 1990's and early 2000's. Most of the work written about mobile multimedia, especially from organizations such as the Museum Association and AAM, were written during between the late 1990's and early 2000's. Mobile multimedia devices can include: handheld devices, personal digital assistants or PDA's, iPods, mobile phones, and touchscreens.[19] These types of multimedia can be used in various ways depending on the museum. Some museums may use these technologies in group tours; other museums have these devices available to guests so they can create their own personal tour at a leisurely pace. However, the more recent technologies, such as iPads and touch screens, "are used for more complex interactions, including individual and group games."[20] Before 2005, using these technologies in museums was considered experimental; but, post-2005 these technologies were commonly used in both permanent and traveling exhibits. According to Tallon,

> Since 2005, the number of multimedia pilots and projects has further increased, including museums that have completely replaced their audio offerings with multimedia for both temporary exhibitions and permanent collections. At a time when a growing number of museums, especially in Europe, are moving away from simply experimenting with this technology to making it commercially available in their institutions…[21]

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[17] Ibid, 75.
[18] Ibid, 79.
[19] Ibid, 79.
[20] Ibid, 80.
[21] Ibid, 80.

When creating more technologically advanced and participatory exhibits, the goals, according to Nina Simon, include: "To attract new audiences, to collect and preserve visitor-contributed content, to provide educational experience for visitors, to produce appealing marketing campaigns, to display locally relevant exhibitions, and to become a town square for conversation."[22] Simon, through her research as an independent-experience designer with expertise in participatory design, gaming and social technology, believes that the project should not only benefit the institution, but also connect the value of the exhibit to the mission statement of the museum.

Smartphones and mobile technology are very prevalent throughout today's society. Even though excessive use of technology can cause harm to people, such as texting and driving, the use of smartphones can be beneficial as well. According to AAM, "overwhelmingly, museums agree that social platforms are important to visitor strategy and that mobile technology is here to stay, with less than 5% of respondents agreeing that mobile technology is a 'fad'."[23] However, in spite of agreement that technology is an important platform, there are many challenges museums face when it comes to using technology including funding and knowledge.[24] Museum staff members do not always have the ability to implement digital and advanced devices within their museum because they are unsure of how they work.[25] In this specific case, museums could be hiring the wrong people to be in charge of the mobile multimedia within their institutions who are not as familiar or experienced with technology as compared to younger people. Another possibility is museums are buying technology that is too new and complicated, making it

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[22] Simon, *The Participatory Museum*, 16.
[23] "2011 Mobile Technology Survey." *American Association of Museums*, 2011, 4. Accessed December 7, 2014. http://www.aam-us.org/docs/center-for-the-future-of-museums/aam_mobile_technology_survey.pdf?sfvrsn=0. 4.
[24] Ibid, 4.
[25] Ibid, 4.

difficult to implement and maintain. I do believe, though, when a museum purchases a type of digital technology to be used throughout their institution, every employee should go through a training which should include how it works, why it is being used in that specific exhibit, how the technology is beneficial in that exhibit and how to fix problems that commonly happen, such as the screen freezing or device turning off from over-heating.

The lack of knowledge about the technological device was one of the many reasons given by museums in the AAM survey for not using digital devices discussed earlier in this paper. Without the proper knowledge of each device, including the device's operation, maintenance and how to use it in the best way to enhance the exhibit, museums face many other obstacles when it comes to the possible installation of digital devices in their institution. The following section discusses both the benefits and challenges involved in using these technologies within museum settings.

Benefits of Museum Interactive Multimedia Technology

First and foremost, the use of technology in museums should be to benefit the museum visitors' learning processes.[26] Education in a museum is extremely important and can be seen in every single museum's mission statement. According to the AAM, there are three required elements when creating an institution's mission statement:

- educational in scope
- the institution's unique purpose/focus/role
- is approved by the governing authority.[27]

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[26] Tallon, *Digital Technologies*, 81.
[27] "Developing a Mission Statement." American Alliance of Museums. 2012. Accessed May 20, 2015. http://www.aam-us.org/docs/continuum/developing-a-mission-statement-final.pdf?sfvrsn=2. 1.

It is important to create a mission statement that truly represents the museum and what it is about, "It articulates the museum's educational focus and purpose and its role and responsibility to the public and its collections… These are different but related guiding documents for the museum: mission is purpose; vision is future; and values are beliefs."[28] The technology implemented by the museum should be beneficial for the institution; but, also support their already existent educational process.

According to a survey by the AAM in 2013, museums use technology to target five specific audiences:

- Visitors wanting an 'in-depth' experience (45%)
- Young adults (18-35 YO) (42%)
- All visitors (42%)
- 'Tech-Savvy' visitors (41%)
- Visitors that like audio guide (38%)[29]

With a simple swipe of a finger on the digital devices, visitors can listen to an artist discuss and explain their art piece, they can play a game that helps them understand the engineering and use of the object in the glass case, they can highlight certain artifacts and paintings and choose which one they are interested in learning about the objet more in-depth. "By providing an in-depth and varied level of interpretation, such multi-media tours can be of great support to the visitor's learning process."[30] Since there are various types of multi-media, such as smartphones, iPads, audio and visual tours, these technologies can support visitors different learning styles, whether the audiences learns better through audio-recordings, written wall labels, or oral conversation through previously recorded curators' and artists' videos.

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[28] Ibid, 1.

[29] Tallon, Loïc. Mobile Strategy in 2013: An Analysis of the Annual Museums & Mobile survey. (March 2013: Pocket-Proof), published at http://www.museums-mobile.org/survey. 7.

[30] Tallon, *Digital Technologies,* 81.

Videos within museums also have closed captioning for guests with hearing impairments.

Research, "data seems to confirm that visitors using multimedia tours have more extensive

learning experiences, demonstrate a deeper level of understanding and critical thinking, make

more connections to their own history and background, and engage in greater personal

learning."[31] The use of multimedia offers these guests the unique options to "choose and control

what she or he wishes to listen to or view."[32]

As I will address next, digital technology can broaden the accessibility for those with

disabilities. Interactive multimedia technology is also inviting to audiences who would not

usually feel comfortable or chose to go to a museum on their own. For example: people who are

hearing impaired and younger children. With the help of video recorders and large screens,

museums such as Versailles, Tate Modern and Museum of Science in Boston, utilize

commentaries featuring art work and artifact that have been recorded in sign language and offer

the option of subtitles as well.[33] Ellen Giuisti, the author of *Improving Visitor Access*, an article

that can be found in Digital Technologies, studies how to develop accessible exhibits for visitors

with disabilities including people who are blind or who have low vision and people with hearing

impairments. Through her research, she found "deaf visitors…appreciated not having to rely on

companions to guide them."[34] One of the visitors she interviewed stated,

> The [American Sign Language] ASL Tour let me go at my own pace and explore topics
> of interest at greater depth like any other visitor."[35] After experiencing the ASL tour,
> "deaf and blind visitors wanted access extended to the rest of the museum…Participants
> thought it would be amazing if all museums had an ASL tour.[36]

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[31] Ibid, 82.
[32] Ibid, 81.
[33] Ibid, 82.
[34] Ibid, 106.
[35] Ibid, 106.
[36] Ibid, 107.

Giuisti's research with visually and audibly disabled museum guests demonstrated that digital

devices and advanced applications can truly benefit museum audiences with disabilities.

Museum guests with disabilities are not the only visitors who can benefit from digital

devices and mobile applications. According to the research provided by Silvia Filippini-Fantoni

and Johnathan A. Bowen, authors of *Mobile Multimedia: Reflections from Ten Years of Practice*,

an excerpt from Digital Technologies, verifies that children can both learn from and enjoy their

experiences with technology as well. Museums do not use technology to simply entertain

children; rather, they use the technology to "encourage young people to explore cultural artifacts

in a more dynamic and participatory way."[37] Adults may be able to immediately identify what

the object is and what it was used for or they may read the object label. However, children may

not be able to look at an artifact and understand what it is or what it was used for in day to day

life. If a museum has the child engage with the object through technology, they may be more

likely to understand the artifact and its importance. Even though many of these technologies are

set up in game style, they are used to educate children in a unique way that is designed to be

more engaging than reading wall labels. Filippni-Fantoni and Bowen continue by saying,

> further data from this evaluation [children and technology] show not only that interactive content (such as games, quizzes and opinion polls) is by far the most popular educational material with students but also that multimedia guides were successful in increasing students' engagement with objects. The questions prompted the students to find objects and study them in detail, enabling greater retention of information and a sense of ownership.[38]

Digital technology and mobile multimedia can be used to help enhance the educational

experience of each museum guest, no matter their age. Interactive technologies have also proved

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[37] Ibid, 82.
[38] Ibid, 83.

to be extremely beneficial for those with disability, making the museum a much more accessible institution than it was in previous years. Both adults and children will experience these technologies differently based on their previous knowledge of the device(s) used and any prior information known about the topic. Using digital technology to engage with both adults and children according to the research done by Ellen Giuisti, Silvia Filippini-Fantoni and Johnathan A. Bowen, is valuable for the museum audience. Technology can be used for every type of learning process, oral, visual and writing. Museums can use technology in a variety of ways to create a unique experience to all types of learners, an accessible environment for those with disabilities and an overall distinctive museum experience.

Problems with Interactive Multimedia Technology

As stated in beginning of the paper, AAM sent out a survey to over 2,000 museums to see if museums use technology, what type of digital devices or advanced media they use, and if they did not use these digital experiences, what deterred them. Participants were given these choices and on average, "4.1 reasons were given for why museums currently do not offer mobile technology."[39] (See Figure 1.2 for chart). The top four reasons are the following:

- no dedicated budget for mobile
- too many other demands or internal resources
- insufficient staff time
- lack of visitor demand/not sure of visitor demand.[40]

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[39] "2011 Mobile Technology Survey." *American Association of Museums*, 11.
[40] Ibid, 10.

Even though multimedia technology in museums can be beneficial, there are certainly some issues, such as funding, complicated software, maintenance and upkeep, and outside barriers like a lack of cell phone service within a museum, which must be considered.

The number one reason offered by 59% of the survey respondents for not using mobile technology was funding.[41] Mobile devices, especially those with touch screens, are extremely expensive and special software is necessary. Most museums use iPads within their exhibits, which range from over $1,000 to $400, depending on the amount of data purchased. This does not include the accessories such as iPad covers, screen covers and extra charging devices. In addition to those costs, museums would need to purchase "life-long batteries, charging systems and carrying cases."[42] Hardware issues also create problems for the museum, especially delicate devices such as iPads. Some additional challenges include videos freezing and continuing to keep the device up to date, which includes coverage fees. Another consideration in regard to hardware issues is that staff spends more time explaining to guests how to use the device than the guest actually interacting with the exhibit, which "hinders the natural flow of visitors."[43] Also, technology is continuously changing, so the technology that they purchased becomes obsolete very quickly. Many companies, particularly Apple, try to provide new devices every year.[44]

Not only are the technical aspects and upkeep of the devices in museums an obstacle, in some cases, "technology-fatigue" also needs to be factored into this situation.[45] According to Silvia Filippini-Fantoni and Jonathan P. Bowen, both quoted earlier, not everyone enjoys advanced technology in museums; in fact, many people are turned off by multimedia tours due to

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[41] Ibid, 11.

[42] Tallon, *Digital Technologies*, 86.

[43] Ibid, 87.

[44] "7 Years of the IPhone: An Interactive Timeline." Time. June 27, 2014. Accessed May 20, 2015. http://time.com/2934526/apple-iphone-timeline/

[45]Tallon, *Digital Technologies,* 87.

the weight of the device and it being too "cumbersome to carry around…visitors run into problems holding a device, and sometimes a stylus, while handling other things such as cameras, maps, or children, not to mention interaction with installations."[46] Older generations may also find it difficult to use and understand this type of technology. They did not grow up with this technology and their vision is weakening making it more difficult to read the images and words presented on the device. Most technical devices, particularly mobile devices, have a home screen, as do many devices used in a museum. Older generations may struggle with the concept of the home screen, may find it difficult to use or even start the mobile device and may have difficulty reading the information due to the small lettering.

Despite these limitations, mobile devices in museums can be used to help visitors find their way around the museum by offering navigation around the museum and small icons on the screen. However, this use of mobile technology has not been very popular. The Metropolitan Museum of Art, in 2005, created an application that could help museum guests roam through the museum and recommend artifacts or pieces of art that might interest the visitor by depicting a small icon of the object on the screen; however, Filippini-Fantoni and Bowen's research into this application showed that "visitors reported difficulty with all of these modes, but particularly with maps. The reasons included the small size, the difficulty of interpreting symbols and signs, and the impossibility of telling exactly how to orient the map."[47] It seems that some museums believe that this type of location technology could be beneficial for them to introduce despite the negative feedback from the Met's experience in 2005. However, possible solutions for these complications are very expensive and hard to implement due to budgetary constraints and the lack of reliable wireless service throughout museums. Another concern is that wireless service

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[46] Ibid, 87.
[47] Ibid, 88.

can be inconsistent throughout museums; guests' mobile devices may freeze causing delays in navigation. It is possible that the visitors will have to resubmit the information required to continue their personalized tours. Again, this takes focus off of the exhibit and forces audiences instead to focus on learning the technological device.

Despite research that supports mobile technology in museums as beneficial, there are some types of technologies, such as the personalized maps I just described, that are not beneficial to either the guest or the museum. In the case of personalized maps, visitors are receiving too much information that they do not necessarily find useful or beneficial to their experience. When using the mobile application or device, visitors can be given too much information regarding each artifact. This can frustrate a visitor if he or she is not particularly interested in that object. There is a way to fix this problem: a personalized tour created on a mobile app; but, not all museums have the funding to create such technology. Another common concern is the notion of the "'lure of the screen,' [or] the fear that screen-based devices distract visitors from looking at the exhibits."[48] In regards to the 'lure of the screen,' looking at the screen can be both beneficial and harmful to guests. By looking at the screen, some guests may be able to absorb more information and understand the exhibit more thoroughly than others; however, some guests may look only at the screen throughout the exhibit instead of looking up at the exhibit itself. The screen, however, is not the most beneficial form of technology because it excludes those who are visually impaired. Watching a screen does not create dialogue among museum members either. They are so focused on what the screen is depicting and explaining to them, that they are not necessarily thinking for themselves or noticing the actual artifacts around them. For these

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[48]Ibid, 89.

reasons, using screens as the sole form of technology in a museum is a poor decision that could

negatively impact the visitors' experience and learning.

There are clearly pros and cons when it comes to the use of digital experiences in

museums. In a positive light, some digital devices such as touch screens have become cheaper,

lighter and faster, making it more plausible for museums to create a digital experience within

their exhibits. However, the continuous changes in technology, such as new innovations in touch

screens, smart phones, iPads and more, demand the creation of an available and flexible budget,

consistent upkeep and possible evolving replacement of expensive hardware. This is a real

challenge for most museums. Though there are challenges to implementing both digital devices

and mobile applications in museums, especially in regards to their expense, museums can

experiment with technology by

> taking a more gradual approach…to start with very simple solutions (locally stored, with
> manual content access, basic interfaces, and so forth), to test them adequately with the
> public and then progressively add new features and services as confidence and enterprise
> is gained.[49]

However, "in the long term, services offered on visitors' personal devices including audio, text,

and multimedia content, will become more prominent allowing museums to save on distribution

and hardware costs."[50] Creating a unique and educational experience is a goal for most museums

and, perhaps, implementing digital devices and mobile applications could create this type of

experience; however, museums need to ask themselves if the implementation will create a unique

enough experience for visitors to return to their museum and if museums that are interested have

the budget to purchase and maintain their interactive multimedia technology. In the next section

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[49] Ibid, 90.
[50] Ibid, 92.

of thesis, I will offer a case study of the Abraham Lincoln Presidential Library and Museum and their use of new technology.

Abraham Lincoln Presidential Library and Museum

Springfield, Illinois was the birthplace of America's sixteenth president, Abraham Lincoln. It is home to many Lincoln artifacts, his grave, and many statues of the President, all reasons for visitors to make the trip to the city. But, in 2005 Springfield decided to introduce a new technology to attract a larger audience for their Lincoln collection at the Abraham Lincoln Presidential Library and Museum (ALPLM). Julie Cellini, the creator ALPLM, wanted to depict Lincoln's life through story-telling and she decided that in order to do that she had to hire "the best storytellers….Disney 'imagineers.'"[51] A Disney Imagineer is equivalent to an engineer, "a person who devises and implements a new or highly imaginative concept or technology, in particular one who devises the attractions in Walt Disney theme parks."[52] This process of hiring imagineers was not an easy one, according to Cellini "

> We simply could not have sold this project --to anybody--politicians, Lincoln people, scholars--if it had been a quote-unquote Disney project. People in the scholarly community were already referring to 'the D word,' as though Disney was something horrible and unmentionable.[53]

For this reason, Cellini kept her involvement with Disney imagineers quiet. However, Disney imagineers lost the contract to the BRC Imagination Arts, headed by Bob Rogers.

Author of <u>Land of Lincoln: Adventures in Abe's America</u>, Andrew Ferguson was able to interview both Mrs. Cellini and Mr. Bob Rogers regarding the use of both a Disney-esque

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[51] Ferguson, Andrew. *Land of Lincoln: Adventures in Abe's America*. New York, NY: Grove Press, 2007. 99.
[52] "Google: Disney Imangineer." Google. Accessed May 20, 2015.
https://www.google.com/?gws_rd=ssl#q=definition+of+imagineers&spell=1.
[53] Ferguson, 99.

method and the types of advanced technology used in the Abraham Lincoln Presidential Library

and Museum. Disney-esque is defined as, "resembling or suggestive of the films, television

productions, or amusement parks made by Walt Disney or his organization."[54] One of the first

questions Ferguson asked Mr. Rogers was, "Weren't you ever worried about dumbing Lincoln

down?"[55] Mr. Rogers responded the following,

> I don't understand that 'dumbing down'…We were totally committed to the idea that we
> wouldn't do anything that wasn't true. We would never sacrifice accuracy for
> storytelling. We were going to charm the socks off your seventh grader. Yet we weren't
> going to totally offend the scholar. Every date will be correct, every figure would be
> correct down to their eye color, the clothes would be true to the period, the hair.
> Everything.[56]

As Rogers said, his goal was to charm the socks off a seventh grader, because according to him

they are the "toughest crowd."[57] Rogers and Cellini wanted to create an experience that would be

unforgettable and unique to their museum.

> [The museum] would constitute an 'immersive visitor experience.' From the first,
> *immersive* was a crucial word for the museum's boosters, replacing *interactive* as the
> reigning cliché. Immersive is interactive only more so—interactive squared….total
> immersion, emotionally engineered, is the answer: exhibits that overpower you, displays
> you walk through and participate in, filled with music and sound to alter your mood, lit in
> ways to startle or soothe, studded with objects you can reach out and fondle.[58]

There are numerous types of advanced technology used in ALPLM including holograms and

immersive exhibits.

Lincoln's Eyes is a show within the Abraham Lincoln Presidential Library and Museum

that depicts Lincoln's changing life through images and re-created scenes.

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[54] "Definition of Disneyesque." Merriam-Webster. Accessed May 20, 2015. http://www.merriam-webster.com/dictionary/disneyesque.
[55] Ferguson, 101.
[56] Ibid, 103.
[57] Ibid, 102.
[58] Ibid, 105.

Some multimedia effect or another is never more than a few moments away. When rains drench the prairie, a cool breeze emerges from hidden vents. The narrator mentions that young Abe was once kicked by a mule, and suddenly the seats jump with a deafening thud. The Civil War begins and the side walls open up and a cannon barrels dart out, belching sparks and real smoke rings toward the audience. Seats quake with every blast.[59]

Another exhibit, called *Ghosts of the Library,* uses holograms from "Holavision" to depict the Civil War.[60] "Holavision is a proprietary BRC [Bob Rogers Company] Imagination Arts-owned technology that allows a live, on-stage actor to appear to control smoke and vapors around him or her, causing the vapors to condense and form images that seem to interact with and respond to the actor."[61] This exhibit is filled with artifacts used by Civil War soldiers and Abraham Lincoln himself. The actor explains to the audience why museums keep such artifacts and their importance. As he is explaining the importance, ghostly images of Lincoln and Civil War soldiers begin to appear and talk to the actor (See Figure 1.5 and 1.6). The main purpose of the exhibit *Ghosts of the Library* is to explain "why we save original objects from history because they connect us to the people and events of history and make them real. They help tell us who we are as a country and as a people. History also whispers a hint of who we will become."[62]

Both negative and positive opinions of Lincoln are expressed in the show including the opinions of Americans at that time which involved calling President Lincoln a racist and war criminal. Rogers explained that he wanted everyone to appreciate this museum, including those who identify themselves as Neo-Confederates. Rogers and historians also included modern discussions and revisions regarding slavery throughout the museum; which included: Lincoln not being the Great Emancipator that everyone thought him to be, the concept that Blacks freed

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[59]Ibid, 106.

[60] "WHAT'S INSIDE . . . The Abraham Lincoln Presidential Museum." Ghosts of the Library Special Effects Theater with Holavision®. July 7, 2009. Accessed December 4, 2014. http://www.lincolnlibraryandmuseum.com/ghosts.htm.

[61] Ibid.

[62] Ibid.

Blacks, not President Lincoln and so on.[63] Mr. Rogers continued by saying, "And here's the thing: it's completely one hundred percent historically accurate. Oh, maybe we pushed it a little in terms of the dramatic moment."[64]

Even though some of the points were 'pushed a little for dramatic purposes' the story of Abraham Lincoln can be experienced in a unique way at the Abraham Lincoln Presidential Library and Museum. "You want to get kids interested in history--that's what we're about, right? That's the whole point of the museum."[65] After the opening ceremony, a nine-year-old boy was asked about his experience in the museum and he said "loved it…absolutely loved it. It's great! So much fun! I didn't have to read anything!"[66]

Interview Methodology

Before interviewing Mr. Cooper, the Technical Director/Systems Manager, and museum guests, I e-mailed the Abraham Lincoln Presidential Library and Museum to inform them of my research and that I would be very interested in interviewing someone who has worked directly with *Ghosts of the Library*. Within a few days, Sam Cooper e-mailed me and said that he would be willing to assist me with anything I needed and suggested that I visit the museum to experience the exhibit first hand. Before visiting, I had ten research questions prepared to ask Mr. Cooperand I was also prepared to craft questions in reference to his answers using the open-ended interview method. I started the interview with ten questions, but I ended it with nearly twenty.

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[63]Ferguson, *Land of Lincoln,* 110.
[64] Ibid, 111.
[65] Ibid, 113.
[66] Ibid, 116.

However, I did not use the open-ended interview method with museum guests. I had five questions I wanted to ask and I did not want to take time away from their museum visit. Each question pertained to the guests' opinions about the benefits of the technology seen in *Ghosts of the Library* for other museums.

Interview with Sam Cooper of the Abraham Lincoln Presidential Library

Sam H. Cooper is the Technical Director/Systems Manager for the Abraham Lincoln Presidential Library since its grand opening in 2005. He controls every technical aspect, including *Ghosts of the Library*. The first question I asked Mr. Cooper was, why did you choose to use holograms in your museum? He responded, "The holograms we use at the Abraham Lincoln Presidential Library and Museum is actually called "Holavision" which is trademarked by the Bob Rogers Company, or BRC. Holavision first made its appearance at Knott's Berry Farm, an amusement park in California. Originally, *Ghosts of the Library* was going to be in the actual library, but due to funding we made its own exhibit. The main focus is to tell a story. I've seen people walk out of Ghosts of the library in tears!"[67] I followed his answer by asking why the museum does not use actors. Mr. Cooper said, "We still use actors. We have Abraham Lincoln come in during the summer; we have also have a Mary Todd Lincoln and Civil War soldiers come. We believe in theatre here, so we have both technology and actors throughout the museum. We also put on plays, pretty often, as well."[68]

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[67] Cooper, Sam, 2015, Interviewed by Jillian Green, Springfield, Illinois, February 7, 2015.
[68] Ibid.

Telling a story within the ALPLM is a very important concept in Sam's point of view. I was curious what kind of experience he was trying to create for the visitors.

> We want to tell the story of Abraham Lincoln's legacy; as Bob Rogers said, 'scholarship; showmanship'. We could solely have artifacts under a glass case but that is not telling the story. Out of the 40,000 square feet in this museum, 4,000 of it is dedicated to artifacts. Guests cannot touch or interact with artifacts. We want to touch our guests. We are telling Lincoln's story beginning with his boyhood and ending with his assassination. We want to highlight what people know and expand on it.[69]

I asked Mr. Cooper if he was influenced by anything, anyone, or anyplace to use holograms. He responded,

> In 1862 there was a show called 'Pepper's Ghost'. This was the first time the technique was used since then it has been widely expanded on to be used in live stage plays, theme parks and museums. There are only four Holavision theatres in the world--two in the United States. However, the Lincoln Museum is the only museum with both a Holavision Theatre and a Special Effects theatre. In regards to influences, every museum I visit has an influence on what happens in this museum. I think the sharing of ideas with other facilities can only make both facilities better, no one by any means has the corner on creativity.[70]

For reference, 'Pepper's Ghost' "is a special effects technique for creating transparent ghostly images. It works by reflecting the image of a ghost off of a sheet of Plexiglas."[71] John Henry Pepper is the inventor of this technology which is widely used today in haunted houses, dark rides and theatre performances. Most recently it has been used to make images of the late singers Michael Jackson and Tupac.

Continuing to the interview, I then asked, do you think other museums could benefit from Holavision?

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[69] Ibid.
[70] Ibid.
[71] "The Pepper's Ghost Illusion." Instructables.com. Accessed May 20, 2015. http://www.instructables.com/id/The-Peppers-Ghost-Illusion/.

I think some museums should stay away from Holavision, it's not for every facility. It is a multi-million dollar project and the museum is stuck telling the same story for a long time due to the expenses that follow the changes in technology. Unless the story is solid and you have a need to tell the same story and your visitor ship warrants the same story, it could be a tough sell because of the cost. It would be a multi-million dollar project to make the changes.[72]

If a museum is dedicated to one person or one particularly event in history, the use of Holavision may benefit them if they can afford to implement and maintain the technology.

I then asked whether or not the holograms have created a more diverse museum audience, particularly in relation to age.

I believe the biggest draw is our hologram and special effect theatres. When we opened we were in the media quite often because of the use of technical styles to tell the story of Lincoln and immerse the visitor in the museum experience. People, of all ages, come here just to see these theatres because of the unique experience. Younger audiences seem to appreciate the technology more.[73]

Following his response, I asked Mr. Cooper if he considered the use of holograms beneficial and if so, to whom and if the holograms support the museum's mission, which is

The Abraham Lincoln Presidential Library Foundation supports the educational and cultural programming of the Abraham Lincoln Presidential Library and Museum; fosters Lincoln scholarship through the acquisition and publication of documentary materials relating to Lincoln and his era; and promotes a greater appreciation of history through exhibits, conferences, publications, online services, and other activities designed to promote historical literacy.

Mr. Cooper's response was,

It most definitely supports our mission. It tells the story of Lincoln's life, parts of the Civil War and why artifacts are kept. When people come to a museum they need to be engaged and I believe that we engage guests of all ages. We encourage our guests to walk around after they see the shows. We are currently working on a cell phone app. We believe this will be more beneficial for children rather than adults because of the use of smart phone technology.[74]

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[72] Cooper, Sam, 2015, Interviewed by Jillian Green, Springfield, Illinois, February 7, 2015.
[73] Ibid.
[74] Ibid.

As stated previously in my research, screens often distract museum guests from the actual exhibit themselves, the 'lure of the screen'. I asked Mr. Cooper if this was a fear he had with the upcoming cell phone app.

> We do fear that the kids will engage more with their phone that the exhibit. But it is a different generation; kids learn differently than we did when we were younger. We don't really address social media in this museum, although we try to use it to promote Lincoln, Illinois history and the museum. We are thinking about changing one of our exhibits to show how social media is used today in regards to politics compared to how it could have been used in the 1860's. Kids are the future of museums and one of the best ways we can engage them is through technology.[75]

I then asked whether or not he considered the holograms to be edutainment, "entertainment (such as through games, films, or shows) that is designed to teach something", and why he believed what he did, "I think Ghosts of the Library is and is not edutainment at the same time. We are telling the story of the importance of artifacts and history. Museums should follow the trends in using edutainment as a part of their museum experience."[76][77]

Moving away from his personal opinion, I began to focus on the technical aspects of the exhibit. I started by asking if there were any technical failures regarding the holograms

> Yes. Within the first year of the museum opening, Lincoln's ghost appeared too early during *Ghosts of the Library*. There has been no outcry from the public in regards to our exhibits. They always have a unique experience. The way I see it is people come here every day and pay the same price. Everyone should experience the same thing, so I want to make sure that the exhibits work properly. I certainly feel that all guests that come through the door should have the same opportunity to experience the museum. It is a personal thing with me.[78]

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[75] Ibid.

[76] "Definition of Edutainment." Marriam-Webster. Accessed May 20, 2015.http://www.merriam-webster.com/dictionary/edutainment.

[77] Ibid.

[78] Ibid.

I then asked if people, particularly historians, complain about the Disney-esque manner of the museum.

> Yes, some historians are still upset to this day that the museum is too Disney-like. Some people really like the old school types of museums where people need to be quiet. We don't want that experience here. We really want to engage with people by using the Lincoln story. We want people to leave being more interested in Lincoln and his story. If people leave more interested, we did our jobs correctly.[79]

I followed the question by asking if he believed that other museums should use Holavision, and if so, which type of museum would benefit the most. "I don't know if natural history museums could really benefit from the use of a Holavision theatre. I am not saying it is impossible, just less likely. Museums that focus on one person's story or one event could certainly use this type of technology."[80]

After researching the use of audio-animatronics in a museum, I asked Mr. Cooper if he would ever use an audio-animatronic of President Lincoln,

> We may be receiving a traveling audio-animatronic of Lincoln. I personally do not think they are done that well. The technology has come a long way but I think with the use of CG animation in movies [animation that is created by using computer graphics] that the public really wants everything they see if it's not real to be real. For me, it's a believability factor.[81]

I followed his question by asking if that is why the museum does not use audio-animatronics, "It is just very pricey and there is quite a bit of maintenance surround the animatronic. I am not convinced the attraction outweighs the cost."[82]

Mr. Cooper did not give me an exact price on how much the Holavision exhibit cost the museum, but he did emphasize that it was "a multi-million dollar project" to build and it would

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[79] Ibid.
[80] Ibid.
[81] Ibid.
[82] Ibid.

cost nearly the same to change the exhibit, as well. This raises questions of financing. Should other similarly sized and funded museums choose to implement holograms? And, by extension, incorporate other costly and complex technologies into their museums? As Mr. Cooper also noted, museums that choose to use this technology need to have focus on one story line. This may be possible for presidential museums or specific history museums, but it does not seem to be applicable to other types of museums that continuously change their exhibits. Not only is the focus on one story not applicable for the majority of museums, but the amount of funding that would be necessary is also a major consideration. He also iterated that people enjoy this experience and come back to the museum to see the exhibit again.

Mr. Cooper raised a few issues that are relevant to the future of museums as they consider choosing and investing in emerging technologies. Three issues he brought up were:

1. emerging technology, such as Holavison, is extremely expensive
2. Holavision can only tell one story
3. The importance of creating of a unique experience for guests.

If museums are interested in adding emerging technology, particularly Holavision, they need to understand that it is a multi-million dollar project, which includes maintenance. If the museum wanted to change the story line, and they were using Holavision, it would cost them millions of dollars as well. Cooper emphasized that the Lincoln Museum takes pride in their unique experiences, particularly *Ghosts of the Library.* Cooper and other museum staff believed that this experience would create a larger museum audience because of its uniqueness. However, statistics will later show that the ALPLM's attendance has been slowly dropping since 2009. Cooper's interview suggests that museums that plan on implementing any type of expensive technology should study how visitors react and interact with the digital technology and if the devices will bring a consistent amount of visitors to their museum. Guests at the Abraham Lincoln

Presidential Library were willing to share their experiences at *Ghosts of the Library* and if they wanted to see this type of digital technology used in more museums. The next section of this thesis discusses some museum visitors' experience during *Ghosts of the Library* and their opinion of Holavision possibly being used in other museums.

Interviews with Museum Guests at Abraham Lincoln Presidential Library and Museum

My interview process was very simple: I stood outside of the exhibit and waited for people to exit. Once they were done with the exhibit, I asked one guest every 20 minutes, for 2 hours, if they would like to participate in my research as anonymous museum guests. I began each interview by explaining who I am, where I am from and what I am studying. Once I received permission to ask the guests questions, I interviewed them for five minutes. The first question I asked each guest was what was learned from this particular exhibit that you did not necessarily know before. Most answers given by guests stated that they learned something from the exhibit that they did not learn from history books such as flags from the Civil War still existed to this day and the importance of keeping historical artifacts. One guest exclaimed, "I learn a lot each time and I visit very often. I always have different questions that I'm thinking about and it seems like this exhibit is able to answer it each time I go!"[83] However, not all guests had the same experience. One guest stated "I did not actually learn a lot about Lincoln himself, which is what I expected. However, I did learn why it is important to learn about history. I think

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[83] Anonymous, 2015, Interviewed by Jillian Green, Springfield, Illinois, February 7, 2015.

it created a great explanation and as a teacher, it is helpful to have this type of explanation for my students."[84]

My next question was whether or not the guest thought their experience was educational, entertaining or both and why. One guest said, "It was more entertaining for me than it was educational. There were not a lot of names given, dates or actual history. I felt it was more of a show, rather than exhibit presenting actual facts."[85] Other guests I interviewed believed that their experience was edutaining, which includes both being entertained and educated. One guest stated,

> I believe I experienced both entertainment and education. We should really learn how to preserve and take care of history. Usually history lessons are given through lectures and people do not find them interesting, that is why most people don't like history. However, this exhibit made history fun and made me want to learn more.[86]

The last guest I interviewed said "Both. The presentation was highly engaging and there are numerous memorable moments that help me remember parts of history! The show moves quickly and, in reality, people's attention spans are getting shorter and shorter; so, this is great to learn."[87]

Continuing with the interviews, I asked the guests whether or not they believe that technology is an important part of museum exhibitions and if they would like to see more museums use holograms within their exhibits. Every guest that I interviewed believed that interactive digital technology was beneficial for museums and would like to see it more "Absolutely. Technology needs to be used more! Other museums are too dry and boring."[88] "Oh,

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[84] Visitor 2, 2015, Interviewed by Jillian Green, Springfield, Illinois, February 7, 2015.
[85] Visitor 3, 2015, Interviewed by Jillian Green, Springfield, Illinois, February 7, 2015.
[86] Visitor 4, 2015, Interviewed by Jillian Green, Springfield, Illinois, February 7, 2015.
[87] Visitor 5, 2015, Interviewed by Jillian Green, Springfield, Illinois, February 7, 2015.
[88] Visitor 6, 2015, Interviewed by Jillian Green, Springfield, Illinois, February 7, 2015.

most definitely. Technology would attract younger people to museums. It would also engage them more than other museums that don't use technology."[89]

Lastly, I asked if museums, such as presidential libraries, history and natural history museums could benefit from the use of holograms and why the guest believed it would be beneficial. "Each of those museums could benefit from the use of holograms. It would certainly engage younger learners."[90] "Absolutely! It would attract younger audiences. The younger generations barely go to museums as it is now, so this would be a definite reason to visit a museum. It is also a new and great way to present information. I am not just simply reading words off of a label; this technology brings history to life."[91]

It is clear from the interviews conducted, that the museum guests did enjoy their experience in the Holavision Theatre. However, it is important to note that most of the people interviewed enjoyed it because it was easier than reading a long wall label; it was more entertaining than a traditional exhibit, filled with artifacts and short descriptions, and guests were able to learn a lot in a short period of time while being entertained. The majority of people agreed that they did learn something new from *Ghosts of the Library* and would want to see this type of technology implemented in other museums. These interviews showed that some museum visitors are more interested in interactive digital exhibits than the traditional wall text exhibits. Even though this interview took place in a specific museum, the opinions expressed by the guests could represent the coming changes in museum guests' interests and desires. Despite the great reviews given, the number of people attending the museum and the Holavision Theatre has slowly decreased in the past few years.

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[89] Visitor 7, 2015, Interviewed by Jillian Green, Springfield, Illinois, February 7, 2015.
[90] Visitor 8, 2015, Interviewed by Jillian Green, Springfield, Illinois, February 7, 2015.
[91] Visitor 9, 2015, Interviewed by Jillian Green, Springfield, Illinois, February 7, 2015.

Museum Statistics

The statistics given to me by Mr. Cooper begin in 2009 and end in 2014. All of the statistics, including museum and theatre audience, clearly indicate a slow decline of Abraham Lincoln Presidential Library and Museum's audience. Even though Mr. Cooper believes people do come to the museum to see the exhibit and museum guests claim they do enjoy *Ghosts of the Library* and holograms presented, the statistics show that the theatre attendance has dropped by 65% in the past six years. When Mr. Cooper discussed the decline in museum attendance, I asked him if he knew why people were no longer attending the museum. He mentioned that Springfield is a small town and not necessarily the easiest place to visit, which could be one of the factors for low attendance. Cooper also mentioned that most visitors are school groups.

Cooper also stated that the museum was receiving bad publicity, but he did not explain why specifically. Exploring this topic, I found a few articles: one created by CBS Chicago News and another by the State Journal Register. The article created by CBS Chicago News was written by John Cody, a veteran reporter, in October of 2013. According to the article entitled, *Lawmakers Debate Overhaul of Lincoln Library and Museum,* "Problems with the current governance of the facility has led to squabbles between the museum advisory board and the IHPA [Illinois Historic Preservation Agency] board, and significant debt for the private fundraising foundation….the split would cost an extra $2 million a year."

The article published by the State Journal Register was written in 2014. This article, written by Chris Dettro, discussed the problem more at length: "When legislation was introduced in the House in May to separate the library from the museum for IHPA…the [museum's] board was 'blindsided'…The hope is for the betterment of the institution and the development of

common ground to address issues that have divided the two boards."[92] It seems that there are

many internal struggles within the museum that may be affecting the public's view of the

museum and thus, leading to a smaller museum attendance.

The attendance in the Holavision Theatre in the past years follows:

2009: 353,774

2010: 274,989

2011: 252,436

2012: 253,435

2013: 264,712

2014: 231,544 [93]

The number of visitors going to the exhibit has consistently decreased at a rate of almost

10,000 people a year. This trend can also be seen in the museum's general attendance. In 2009,

the total number of visitors was 423, 680 (this number also includes rentals and special events

that occurred in the museum). In 2014, the number of visitors dropped to 289, 019, which also

includes rentals and special events. (See Figure 1.4). Knowing exactly why the museum and

theatre attendance is diminishing is hard to determine; but, it is clear that the multi-million dollar

Holavison Theatre did not create the audience the museum had hoped to generate. However, it

could be possible that the declination of the museum's audience could have been much more

dramatic without their unique theatres.

One institution that has developed a new technology and plans on testing it in the near

future is the University of Southern California's Shoah Foundation. Unlike the ALPLM, Shoah

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[92] Dettro, Chris. "Boards Mull Oversight of Presidential Library." The State Journal. September 14, 2014. Accessed March 3, 2015. http://www.sj-r.com/article/20140914/News/140919713.

[93] Statistics received from Sam H. Cooper on February 4, 2015

plans on testing their technology before making it a part of their permanent exhibit. The new technology is called *New Dimensions in Testimony*.

New Dimensions in Testimony: University of Southern California's Shoah Foundation

The University of Southern California established the Shoah Foundation in 1994. Shoah is "The Hebrew word meaning 'catastrophe,' denoting the catastrophic destruction during WWII."[94] In the creation of the movie *Schindler's List,* hundreds of interviews were recorded and videotaped; these were the basis of the Shoah Foundation. Today, the foundation is home to over 52,000 eyewitness interviews from the Holocaust and recently has expanded to include Rwandan genocide survivors. One of Shoah's many goals is to educate younger generations about genocide and to stop it from reoccurring. Their newest innovation to keep the oral history of survivors alive is through the use of holograms.

Steven Smith, the Executive Director of the USC Shoah Foundation, began to wonder how he could preserve the stories of survivors in a more advanced form than audio-tapes and video-recordings. This idea sparked the initiative "USC Shoah Foundation: *New Dimensions in Testimony.*"[95] With the great concern that the conversation between children and survivors would be lost forever once survivors passed away, staff at the Shoah foundation rushed to find a way to preserve these stories in an interactive manner, the solution: holograms. Heather Maio was in

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[94] "Definition of Shoah." Definition of Shoah. Accessed March 6, 2015. http://fcit.coedu.usf.edu/holocaust/DEFN/shoah.htm.
[95] "Bringing New Dimensions Testimony." USC Shoah Foundation: The Institute for Visual History and Education. Accessed January 2, 2015. https://sfi.usc.edu/content/bringing-new-dimensions-testimony.

charge of this project and she demanded that the "content must be natural language video technology" the first and only survivor to be interviewed was 83-year-old Pinchas Gutter.[96]

Pinchas was "surrounded by bright green fabric under the glare of several thousand LED lights, 53 cameras capturing his every move."[97] (See Figure 1.5). During a weeklong interview, Pinchas was asked over 400 questions including: Did you ever find your sister? Do you feel hatred or the need for revenge? Do you believe in a God? How do you feel when you see genocide happening to others? [98] Every survivor will be asked different questions based on their personal story; but, every "interviewee does provide a life history. They also provide a five minute, 15-minute and 40-minute summary for use with different future audiences."[99] Not only does the interviewee answer questions and create numerous summaries, they also provide smaller comments such as: "I am sorry, can you repeat that? Let's stick to the topic, shall we? I am really pleased to have shared my thoughts with you." [100] In the near future, this holographic Holocaust survivor will be seen in selected museums in the United States. Guests will be able to ask the hologram questions about their past and what their opinions are on current day issues and receive relevant answers based on their questions (See Figure 1.6).

Karen Jungblut, the Shoah Foundation's Director of Research and Documentation, was very willing and excited to discuss the project *New Dimensions in Testimony*. However, she wanted to make sure the focus of the Foundation's project was on the ability to tell a story in a different way rather than the technology itself. To emphasize this point, I would like repeat that

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[96] Ibid.
[97] Ibid.
[98] Ibid.
[99] Ibid.
[100] Ibid.

New Dimensions in Testimony is a project that focuses on the continuation of survivors stories

throughout generations and should not solely be looked at as advancement in today's technology.

Very similar to the way I conducted research at Lincoln Museum, I e-mailed the Shoah

Foundation about my thesis and asked if I could speak to someone about their project. I spoke

with Ms. Jungblut's assistant for a few weeks and set up an interview. I had twelve questions

prepared for my interview which revolved around *New Dimensions in Testimony;* I again used

the open-ended interview method.

I began the interview by asking why the Shoah Foundation decided to use holograms

instead of previous video or audio recordings from the survivors to tell their stories. Karen

Jungblut responded,

> *New Dimensions in Testimony* is one of our newest research projects. The idea of using
> this type of new and interactive technology originated from our Education department.
> By interviewing survivors and documenting their response, museum visitors are able to
> have an interactive conversation. It is certainly possible to create an exhibit from this type
> of technology, but I want people to know that we are not replacing the survivors. This is a
> different way of taking a survivor's testimony, it is much more interactive.[101]

I then asked Ms. Jungblut whether or not she believes other museums could benefit from this

type of technology. She responded by saying,

> There is definitely potential that this type of technology could benefit other museums.
> This is a totally new idea--we have created a virtual docent. It is also a way to continually
> tell the survivors story in an interactive manner by using this technology. It will be great
> to see how students and museum visitors respond. As new as it is now, in twenty years,
> museum audiences will see this and think of it as something normal, like how we see
> television today.[102]

 Lastly, I asked if she believed that technology is an important aspect in museums, why or why

not. "I think technology helps drive the content forward. Using technology helps museums tell

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[101] Jungblut, Karen, 2015, Interviewed by Jillian Green, Los Angeles, California, February 1, 2015.
[102] Ibid.

the story. Technology is part of the process but it is not the main idea behind a museum."[103] Ms. Jungblut's statement is different from Sam Coopers' from the Lincoln Museum. Cooper believed that people solely came to the Lincoln Museum to see and engage with their technology, that Holavision was the main idea behind the museum. These are the only two institutions within the United States using the concept of holograms in their museum, but the idea behind both exhibits is significantly different. Since the Shoah Foundation's exhibit is not open, there is no data to show if their exhibit creates a larger audience for the museum housing New Dimensions in Testimony.

Conclusion

The Abraham Lincoln Presidential Library and Museum is one specific example of a museum that implemented expensive digital technology in hopes of creating a larger audience but did not meet their goal. Their goal may not have been met, but the visitors who attend the Lincoln Museum do enjoy their experience during *Ghosts of the Library*. This one case study should not deter other museums to invest in emerging technologies. Museums need to make sure that they are properly funded to house such an expensive project and to maintain it; also, museums should test their new digital technologies to see if visitors enjoy their experience before making them a part of a permanent exhibit.

However, there is a very noteworthy difference between the Abraham Lincoln Museum and the Shoah Foundation. The entire Lincoln Museum is based on the use of innovative exhibits and the Holavision Theatre; the Shoah Foundation is not solely focused on their holographic Holocaust survivor--for them it is one exhibit, rather than an entire museum. These differences

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[103] Ibid.

most likely impacts the amount of money spent by both institutions in regards to the creation and

maintenance of each technology. It will be interesting to see how *New Dimensions in Testimony*

affects the attendance of the museum that it is housed in. The exhibit may create a larger

audience because it is a rotating exhibit and will be available for a short period of time. If this is

the case, perhaps the Lincoln Museum may learn that the same story repeated for ten years does

not continuously attract an audience.

Earlier in the thesis, the importance of education in a museum and a museum's mission

statement was discussed. An important question to be posed is whether or not Holavision

supports the ALPLM's mission statement, which is:

> The Abraham Lincoln Presidential Library Foundation supports the educational and
> cultural programming of the Abraham Lincoln Presidential Library and Museum; fosters
> Lincoln scholarship through the acquisition and publication of documentary materials
> relating to Lincoln and his era; and promotes a greater appreciation of history through
> exhibits, conferences, publications, online services, and other activities designed to
> promote historical literacy [104]

I can conclude, from both my research and personal experience of *Ghosts of the Library*, that

Holavision fully supports the Abraham Lincoln Presidential Library and Museum's mission

statement. *Ghosts of the Library* thoroughly discusses the numerous acquisitions within the

Museum's collection, why they are important and how they are being used today to help study

Lincoln, his presidency and his family in ways that were not possible previously. The exhibit

also promotes a greater appreciation of history. This can be seen through the interviews I

conduced with museum guests. Some visitors may not have learned something new about

President Lincoln, but they did learn something new about history and museum collections. The

ALPLM as a whole promotes historical literacy and interest in America's sixteenth president

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[104] "Our Mission." Abraham Lincoln Presidential Library Foundation. 2005. Accessed May 20, 2015.
http://www.alplm.org/AboutUs/OurMission.aspx.

through their artifacts; however, the use of Holavision to promote Lincoln, history and museum collections is a unique way to engage their visitors and also uphold their mission statement.

In the beginning of my research, I discussed some of the benefits of interactive exhibits and digital technologies within museums. Some of the benefits included: deeper understanding of the material, engaging with personal learning, a connection to their own history and background. *Ghosts of the Library*, according to my interviews, engages with guests in regards to personal learning and creates a deeper understanding of why museums keep and study artifacts. Even though *Ghosts of the Library* creates a beneficial experience for some guests, it may not for others. If a person has difficulty seeing, they would not be able to properly experience Holavision Theatre. There is no way to recreate the holographic experience for the visually impaired. Also, if a person was hard of hearing, they would visually understand *Ghosts of the Library*, but not necessarily understand the main purpose of the exhibit. For those who are blind, visually impaired or have a hearing impairment, I would consider *Ghosts of the Library* a hindrance to their museum visit, due to the fact they cannot experience Holavision in its truest form.

Another benefit, for some museums using technology, is that it encourages children to explore cultural artifacts in a more interactive manner. Based on the interview with Mr. Cooper and museum guests, it seems that *Ghosts of the Library* does encourage children to be more exploratory in the topic of history. This exhibit teaches them the importance of why museums collect and preserve artifacts and why history is important to this day. The teacher I interviewed in the museum explained that she would like her students to experience that exhibit because she believed it would be beneficial and they would actually enjoy it, rather than going to a traditional museum and reading all of the wall labels. As Mr. Cooper said, "When people come to a

museum they need to be engaged and I believe that we engage guests of all ages. We encourage our guests to walk around after they see the shows."[105]

Holavision is directly beneficial in two ways: museum guests do not have to operate this technology in order for it to work and museum guests are not distracted by touch screens or other forms of interactive technology--the exhibit is the interactive technology. As stated previously, some museum guests find it bothersome when they have to operate the digital devices in an exhibit because some of them are unsure of how it works and find carrying around a large device distracting and inconvenient. During *Ghosts of the Library* guests walk into the exhibit, sit down and wait for it to begin. This creates a distraction--free atmosphere for the visitor to engage with the exhibit, an experience that guests seem to enjoy.

According *Disneyland and the Future of Museum Anthropology* written by the curator of anthropology at the Field Museum of Natural History in Chicago, John Terrell, "'museum visitors' [get] what they want, when they want it and how they want it."[106] Education, in particular, wants the museum guests to become engaged with the exhibits and artifacts and the education staff will find a way to bring more visitors through the door. Terrell said that in 1985 the Field Museum was worried "that not enough museum visitors were coming through our [Field Museum's] door, possibly because we were not keeping up with Disneyland and other contemporary forms of popular entertainment."[107] Mr. Terrell continued to say, "I think, therefore, in a few more years, the heyday of museums-as-Disneyland-and the exhibit-developer approach will be over."[108] Terrell's article was written and published in 1991. Unfortunately, for

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[105] Cooper, Samuel.
[106] Terrell, John. "Disneyland and the Future of Museum Anthropology." *American Anthropologist* 93, no. 1 (1991): 149-53. Accessed May 20, 2015. http://www.jstor.org/stable/681479. 149.
[107] Ibid, 149.
[108] Terrell 152

Terrell, I do not believe that "museums-as-Disneyland" is over; in fact, I think it is becoming more acceptable for museums to use entertainment as a form of education. The ALPLM admitted that their style was Disney-esque. Terrell also stated in 1986, "[the] crew of new exhibits people [said] that visitors to Field Museum will never again have to read a label that isn't catchy, fun, and just meaty enough to delight without a trace of boredom."[109] Even though Terrell solely focused on the Field Museum, I believe that his last statement regarding labels is true and can be seen throughout museums today. Many museums, including the Field Museum and John G. Shedd Aquarium, both in Chicago, are beginning to use iPads in addition to their traditional labels. These iPads, however, present more information and create an interactive engagement with the guest and exhibit. The use of iPads and other digital technologies seem to be taking the place of traditional wall labels in order for guests to be more engaged. Perhaps in the future, traditional, typed wall labels will no longer exists and touch screens will be the new traditional wall labels.

This case study focused on the Abraham Lincoln Presidential Library and Museum due to their unique exhibit *Ghosts of the Library* and their declining museum audiences. The ALPLM believed that their one-of-a-kind technology would create a larger audience, but as statistics show, their audience has gradually declined. The story of the Lincoln Museum's interactive exhibit is beneficial for museums that plan on implementing emerging digital technologies in the future. Museums now know that creating interactive digital technologies within exhibits is a daunting task, particularly in regards to financing and upkeep. Museums will now also know that Holavision may only be beneficial to institutions that have the ability to focus on one story for a long period of time. The Shoah Foundation's implementation of their holographic Holocaust survivor is different than the Lincoln Museum's implementation of their Holavision Theatre. The

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[109] Terrell 151

Shoah Foundation has created one holographic survivor and is going to be tested in select

museums in the near future. Instead of creating numerous holographic survivors and spending

millions of dollars, the Foundation created one and is going to test it before furthering their

technology. If *New Dimensions in Testimony* is successful in creating a larger audience for the

institution housing it, it could be a lesson valuable for the future of museums. By testing the new

technology before making it a permanent part of their museum, the museum has a chance to see

how visitors react to the technology, determine what they learn and if they are likely to return to

the museum. Beverly Serrell, in Paying Attention, suggested the "51% solution [which] seemed

reasonable because it represented a simple majority, and if left ample room for accommodating

the diversity of visitor's demographic and physchograhic (sic) profiles." This solution has three

criteria, one of which can be directly related to both Holavision and *New Dimensions in*

Testimony:

1. Do 51% of the visitors move at a rate of less than 300 square feet per minute?
2. Do 51% or more of the visitors stop at 51% or more of the exhibit elements?
3. Can 51% of a random sample of cued visitors, immediately after viewing the exhibition, express (in questionnaire feedback) general or specific attitudes or concepts that are related to the exhibitions content objectives?[110]

The first two criteria cannot apply to either *Ghosts of the Library* or *New Dimensions in*

Testsimony because neither of these exhibits are traditional nor hold artifacts for guests to stop

and view. However, the third criteria would be most beneficial to both of these exhibits. This

way the museum staff can discover what people are learning and focusing on in the exhibit and

expand that interest more throughout their institution. This can be an effective way of knowing

how the museum visitors react to exhibits with new and immersive technology.

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[110] Serrell, *Paying Attention*, 2.

As the AAM survey stated earlier in this paper said, technology is not just a fad. Museums, with the proper funding, can build interactive digital technologies to create a unique experience for their guests; however, museums need to see if museum guests can engage with the technology by testing it, before completely integrating the technology into their exhibits permanently. In conclusion, digital immersive technologies can benefit both the museum and their guests if the technology is implemented correctly throughout the museum and exhibit and is accessible for all guests.

Appendix

Mobile Technology in Place (II): The most common mobile technologies in museums are audio-only tours on devices provided by museums and cell phone guided tours. Only about one in twenty museums currently have smartphone apps and/or multimedia tours.
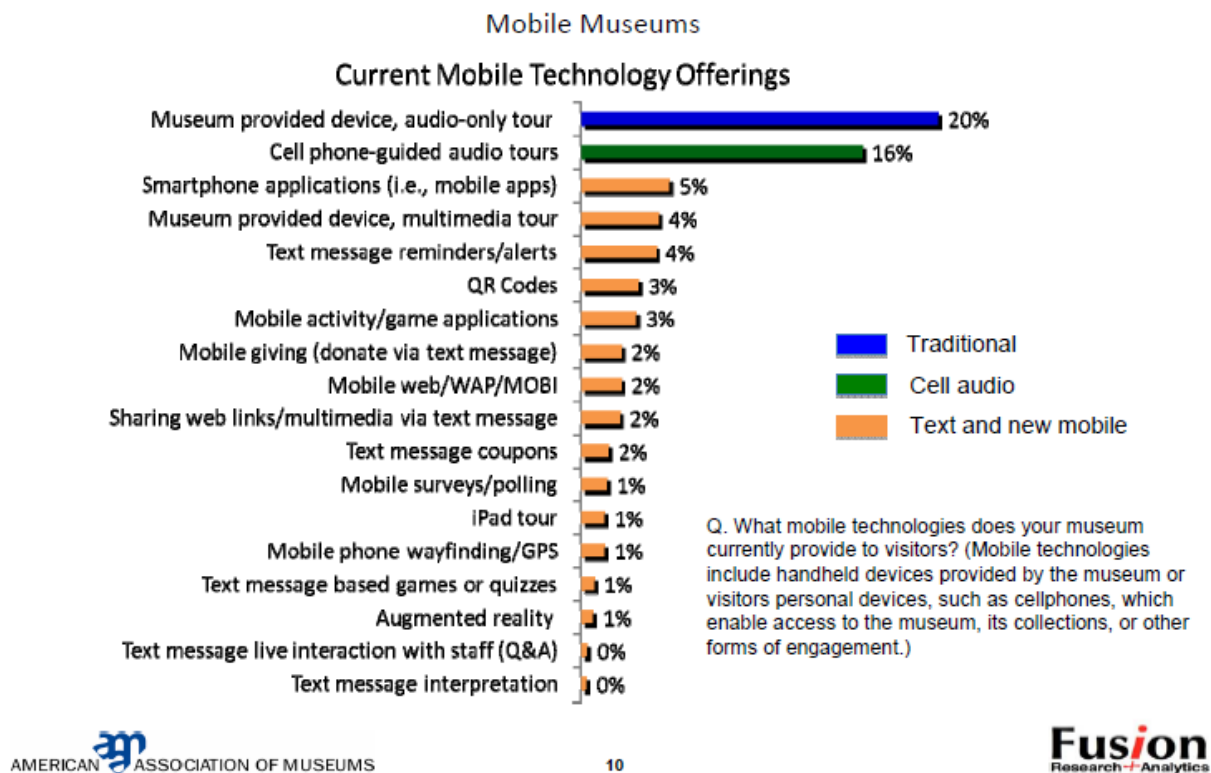
Mobile Museums

Current Mobile Technology Offerings

Technology	Percentage
Museum provided device, audio-only tour	20%
Cell phone-guided audio tours	16%
Smartphone applications (i.e., mobile apps)	5%
Museum provided device, multimedia tour	4%
Text message reminders/alerts	4%
QR Codes	3%
Mobile activity/game applications	3%
Mobile giving (donate via text message)	2%
Mobile web/WAP/MOBI	2%
Sharing web links/multimedia via text message	2%
Text message coupons	2%
Mobile surveys/polling	1%
iPad tour	1%
Mobile phone wayfinding/GPS	1%
Text message based games or quizzes	1%
Augmented reality	1%
Text message live interaction with staff (Q&A)	0%
Text message interpretation	0%

Legend:
- Traditional
- Cell audio
- Text and new mobile

Q. What mobile technologies does your museum currently provide to visitors? (Mobile technologies include handheld devices provided by the museum or visitors personal devices, such as cellphones, which enable access to the museum, its collections, or other forms of engagement.)

AMERICAN ASSOCIATION OF MUSEUMS   10   Fusion Research + Analytics

Figure 1.1 American Association of Museum's chart discussing the numerous types of

mobile technologies used in the museums they surveyed [111]

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[111] "2011 Mobile Technology Survey." *American Association of Museums*, 2011, 3. Accessed December 7, 2014. http://www.aam-us.org/docs/center-for-the-future-of-museums/aam_mobile_technology_survey.pdf?sfvrsn=0.

Barriers: Budget and staff resources top the reasons why museums don't provide mobile technology experiences for visitors. Secondary reasons include a lack of knowledge about technology products, uncertainty about potential revenue, and insufficient staff training.
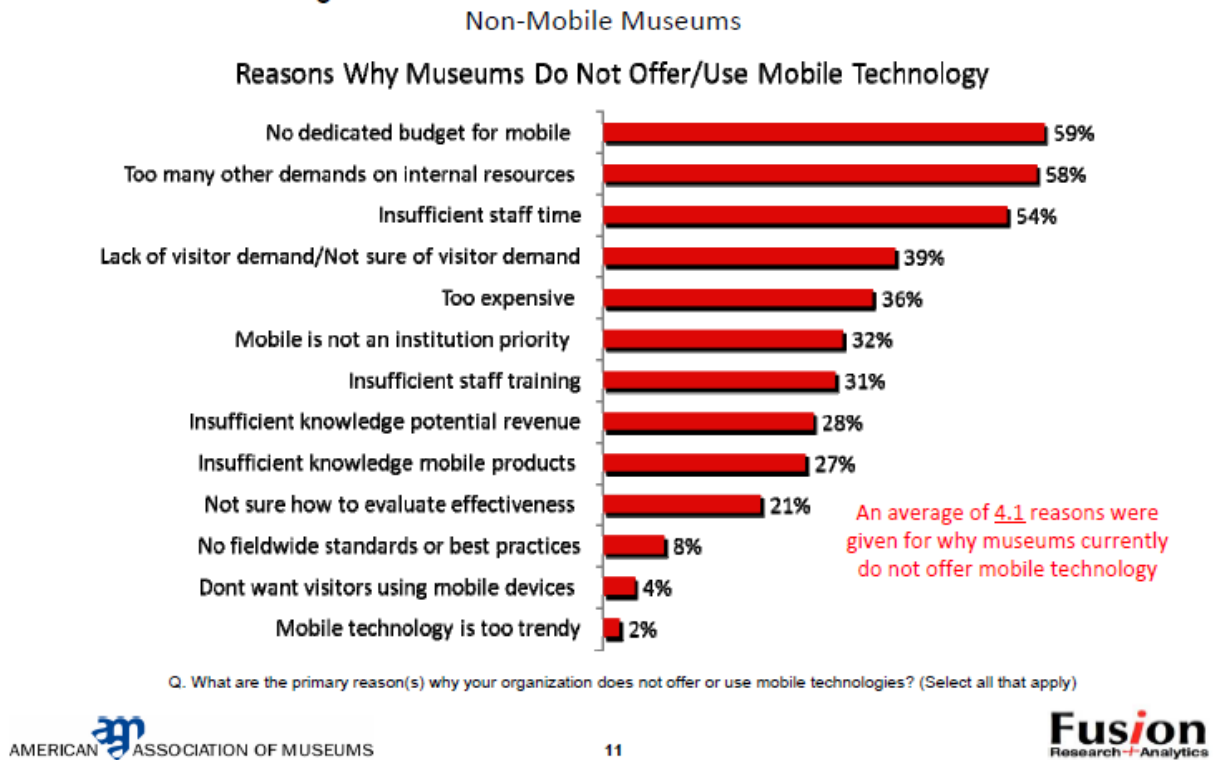
Non-Mobile Museums

Reasons Why Museums Do Not Offer/Use Mobile Technology

Reason	Percentage
No dedicated budget for mobile	59%
Too many other demands on internal resources	58%
Insufficient staff time	54%
Lack of visitor demand/Not sure of visitor demand	39%
Too expensive	36%
Mobile is not an institution priority	32%
Insufficient staff training	31%
Insufficient knowledge potential revenue	28%
Insufficient knowledge mobile products	27%
Not sure how to evaluate effectiveness	21%
No fieldwide standards or best practices	8%
Dont want visitors using mobile devices	4%
Mobile technology is too trendy	2%

An average of 4.1 reasons were given for why museums currently do not offer mobile technology

Q. What are the primary reason(s) why your organization does not offer or use mobile technologies? (Select all that apply)

AMERICAN ASSOCIATION OF MUSEUMS   11   **Fusion** Research + Analytics

Figure 1.2 American Association of Museum's chart showing the numerous reasons why museums do not offer or use mobile technology[112]

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[112] "2011 Mobile Technology Survey." *American Association of Museums*, 2011, 11.. Accessed December 7, 2014. http://www.aam-us.org/docs/center-for-the-future-of-museums/aam_mobile_technology_survey.pdf?sfvrsn=0.

Figure 1.3 Ghosts of Civil War soldiers emerge from an historic diary[113]

Figure 1.4 Ghostly apparition of Abraham Lincoln interacting with the actor on stage[114]

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[113] "WHAT'S INSIDE . . . The Abraham Lincoln Presidential Museum." Ghosts of the Library Special Effects Theater with Holavision®. July 7, 2009. Accessed December 4, 2014. http://www.lincolnlibraryandmuseum.com/ghosts.htm.
[114] Ibid.

(Admissions, Rentals, and Special Events)

	2009	2010	2011	2012	2013	2014
January	11,546	7,159	7,573	7,204	11,453	6,866
February	27,153	14,762	13,130	16,899	16,597	11,943
March	41,352	32,859	27,679	26,910	30,361	24,107
April	50,634	39,365	36,924	35,740	37,338	36,041
May	50,724	40,881	39,427	39,690	45,251	40,076
June	44,517	35,865	30,743	30,251	33,678	30,161
July	61,115	42,959	40,539	37,675	41,140	38,055
August	45,787	30,818	27,630	26,413	30,077	28,885
September	26,544	20,754	22,120	23,380	22,815	19,098
October	34,191	28,454	27,830	26,834	26,507	28,749
November	20,250	18,251	17,726	20,344	18,751	15,575
December	10,047	9,655	9,685	12,047	7,103	9,463
Total	423,860	321,782	301,006	303,387	321,071	289,019

(From 2005-2011 some rental numbers are estimated due to the fact that total campus attendance was not regularly tracked)

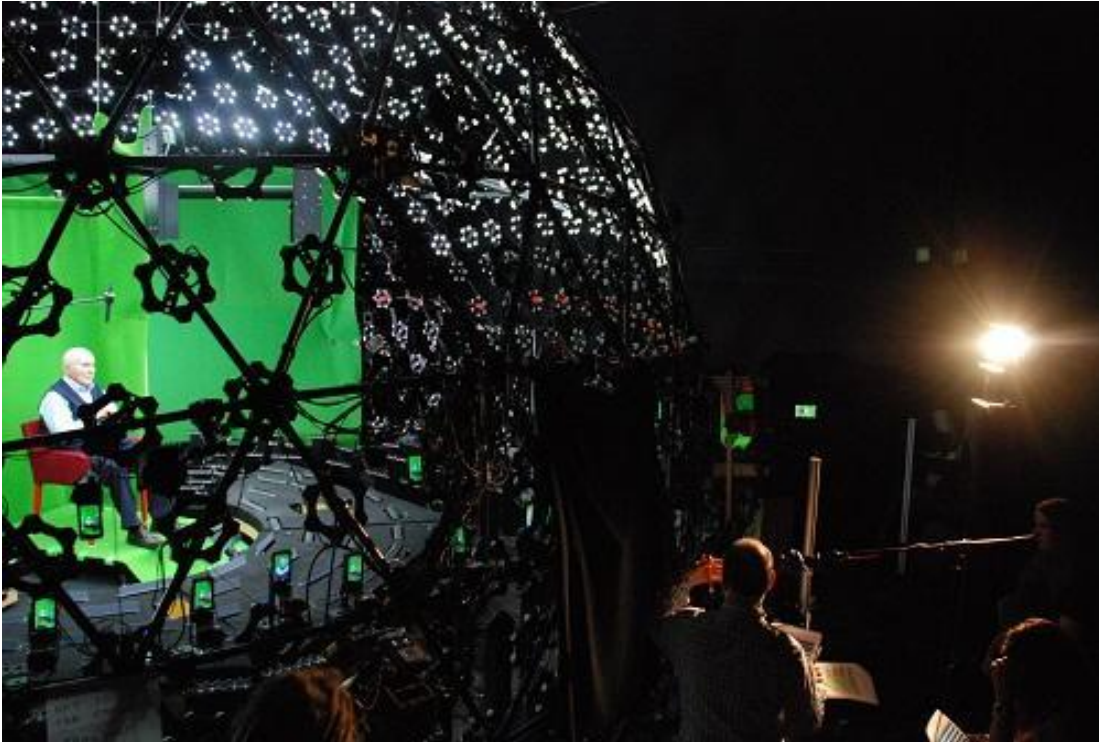Figure 1.5 Statistics provided by Sam Cooper discussing the museum attendance since 2009

Figure 1.6 Mr. Pinchas Gutter being interviewed while every single one of his motions is being recorded[115]

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[115] "Bringing New Dimensions Testimony." USC Shoah Foundation: The Institute for Visual History and Education. Accessed January 2, 2015. https://sfi.usc.edu/content/bringing-new-dimensions-testimony.

Figure 1.7 The end-result hologram of Pinchas Gutter being used in a classroom.

Students are able to ask questions about Mr. Gutter's past and opinion on current day genocide

and his hologram will answer with an appropriate response[116]

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[116] Ibid.

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Vita

Jillian R Green

926 Cromwell Westchester, IL 60154

708-921-3598

jrgreen29@gmail.com

Curriculum Vitae

Education

2015	**University of Illinois at Chicago** Chicago, IL
	M.A in Museum and Exhibition Studies (In-Progress)
2013	**Concordia University Chicago** River Forest, IL
	B.A. in History
	Dean's List 2009-2013 *Honors College, GPA of 3.5 or higher*

Professional Experience

June 2015-Present	**Chicago Architecture Foundation**
	Education Facilitator
	Facilitate summer camps, meetings, parties and Open Studio in the ArcelorMittal Design Studio. Create and continually update the Code of Conduct for the space and those working in it. Create and update Excel documents relating to visitors who enter the Design Studio. Educate guests from all over the world about the Chicago Architecture Foundation's exhibits and city model.
August 2014-August 2015	**District 92.5 and Divine Infant School**
	Substitute Teacher

Conduct classroom activities for grades K-8. Create and implement lesson plans based on the age and how the children learned. Taught children from various backgrounds, including Special Education.

January 2014- May 2014	**Illinois Holocaust Museum and Education Center**

Collections Intern

Clean and maintain the Museum's permanent exhibits. Proficiently learn KE EMU by accessioning and deaccessioning collections. Handle fragile documents, photographs and textiles from World War II.

June 2010- June 2014	**Field Museum of Natural History**

Part-Time Education Staff

Create and implement public programming for the event called "Dozin' with the Dinos". Register 800+ guests for Dozin with the Dinos and answer any questions they had about the event and the museum. Handle and maintain certain collections. Camp Counselor for 4 years for the program, "Summer World's Tour" which visits the Field Museum, John G. Shedd Aquarium and Adler Planetarium.