Interacting in the Museum: The Impact of Collaborative Exhibits

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Table of Contents:

Abstract

This paper serves to examine the gradual shift of museum exhibits from the observational model, wherein visitors and objects are detached from each other both spatially and informationally, to the participant model, in which visitors are encouraged to interact with objects and fellow visitors. Using previous research, the paper will then analyze the ways interactive and technological exhibits increase visitor understanding, connectedness, and enjoyment of the material. Specific case studies of interactive exhibits at the Exploratorium Museum, Indiana University Art Museum, and the Cleveland Museum of Art will be conducted. Lastly, interviews with museum staff will be implemented to better grasp where these specific museums see the future of interactive technology heading. I argue that investment and research of interactive exhibits will allow museums the opportunity to flourish within society, and help avoid becoming antiquated institutions.

Introduction:

In the 21st century, museums and other cultural institutions compete for the most valuable and limited resource of all—the attention of people. It is no longer enough for museums to serve as a national or state symbol of culture, pride, and progress. Individuals have access to the same amount, if not more, information at the tip of their fingertips via smart phones and tablets than a trip to a museum may offer. So besides offering a tangible connection with an object and a chance to engage in a new social setting, what can museums offer today's fast-paced society? I argue museums have an opportunity to offer an impactful experience that allows the visitor to feel important, represented, and engaged within the subject material, as well as in society itself. To achieve this, however "cultural amalgamation", the end of the great divide between low and high culture, must be come to an end, as well as an institutional shift of museums from being a site of worship and awe to a place of critical reflection and discourse to examine sensitive history and topics (Runnel, et al, 2014). As said by Museologist Kirsten Drotner (2013), 21st century museums should become "houses full of ideas, not glass cases" (p. 69).

Observational to the Participant Model in Museums:

In order to understand why interactive exhibits play such a crucial role in redefining museums, one must understand the institutional set-up museums have undergone these past few decades. Early museums belonged to wealthy and traveled individuals, containing a vast array of objects, or Wunder Kammers (room of wonders) available for a few privileged

individuals to view. Museums became public institutions during the Renaissance, where the function of democratizing culture, history, and art became necessary and wanted from society (Runnel, et. al, 2014). Additionally, the necessity to identify and collect authentic, rare, and valuable objects, as well as preserve and display them developed. The functions in the public institutions evolved, including socializing and educational aspects, resulting in increasing variability within the museums themselves (Runnel, et al, 2014). Museologist Peter van Mensch attributes the change in the second half of the 20th century to museums realizing the need to overcome departmental differences in order to start thinking of who the museum is actually serving, i.e. the community rather than the privileged few (Runnel, et al, 2014, p.39). Additionally, museums became markers that identified a nation's cultural, historical and artistic status.

This describes the organizational structure and development of museums, but the change of the perception society has had of museums also matters. Originally, the public entrusted institutions, such as museums, to be the gate-keepers of information. They were responsible for defining what was authentic, important, and above all culturally relevant. The obvious issues with this model is that the information gathered by the museum was bottlenecked; museum professionals had an abundance of information and artefacts, but could only deliver the information to the public in a condensed and reduced manner. Another issue, was the sense that visitors, in order to appreciate the exhibits, required previous knowledge and appreciation for the object on display. This not only discouraged some from attending, but created a great divide between active museum-goers, highly specialized and educated individuals, and the masses.

Recognizing this disparity, museums began installing “blockbuster” exhibits—“big, popular, moneymaking showcases that delivered a powerful impact”—to attract larger audiences (Millikin, 1996) . A terrific example to illustrate a blockbuster exhibit occurred in the United States in 1976 with the traveling exhibit “Treasures of Tutankhamen” at the National Gallery of Art in Washington D.C., the Field Museum of Natural History in Chicago, the New Orleans Museum of Art, the Los Angeles County Museum of Art, the Seattle Art Museum, and the Metropolitan Museum of Art in New York City (Millikin, 1996). The public was very excited to see the exotic and mysterious burial mask of ‘King Tut’, and attendance at these museums increased sharply. The hope behind blockbuster exhibits is that visitors, upon viewing the temporary exhibit will be more inclined to explore the other more traditional exhibits and develop an interest and passion for regular museum-going. While blockbuster exhibits have increased attendance and revenue for many museums, for example 965,000 attended the massive 1995 Claude Monet exhibit at the Art Institute of Chicago (Millikin, 1996), this tendency has caused museums, such as the Art Institute to raise admittance charges, and arguably focus less energy on permanent collections and overall visitor learning and experience.

With the increase in participatory technologies, and the push for museums to encourage educational programs, more emphasis has been placed on the visitor experience. The biggest shift some museums have taken is presenting an original and accurate object, while balancing the authenticity of the experience felt by the participant. This is achieved by allowing the visitor to become an active agent in the meaning-making process, not simply a “passive recipient of received wisdom” (Drotner, 2013).

From the Visitor to the Participant

Information has never been more accessible and free flowing, thanks to great leaps in technology. Art and culture representations can also be found in many public domains (cultural districts, pop-up galleries, festivals) than ever before. Therefore, the museum needs to be able to offer something more than a visitor could acquire from outside world. In the age of the individual, museums need to recognize their visitors' uniqueness. "Transformation of visitors roles increases the importance of their opinion and decreases the gap between the authoritative museum and its visitors" (Runnel, et. al, 2014, p.87).

Linda Lotina (*Democratising the museum*, p. 91), identifies four types of participation: (1) Contributory participation – in which the museum makes visitors and members feel like participants in the institution; (2) Collaborative participation – in which the museum is committed to deep partnerships with distinct target groups; (3) Co-Creative participation – in which the museum is committed to support the needs of target communities whose goals align with the institutional mission; (4) Hosted participation – in which the museum is committed to inviting community members to feel comfortable. These types can be overlapping and vary in degree depending on each museum structure. Lotina also suggests 3 institutional values needed to promote participation culture. The first is the desire for input and involvement of outside participants. The Indiana University Art Museum is hoping to launch a new online database that boasts a collection of 250 original Kenyan objects featuring detailed photographs and a description for each object. More interestingly, the museum will allow viewers to add to

the content, sharing facts found through research or personal history. This will allow the resource to be not only academic and scholarly, but also encourages personal meaning making.

Secondly, in order to promote participation culture, museums need to trust in the participants abilities. A terrific example comes from a new gallery, *Science of Sharing,* at the Exploratorium museum in San Francisco. The exhibits within this gallery allow participants to investigate competition, cooperation, and social interaction. The exhibit "give and take table", features a large metal bowl sitting on top of a table.

Every day, museum staff place a single cheap item in the bowl and then visitors can choose to take the object and replace it with something of equal or greater value, or not. Hugh McDonald, current exhibit developer at the Exploratorium, revealed the skepticism the museum staff had of visitor's ability to act responsibly and fairly. However, the staff was overwhelmed by the actions of the participants. Most, if not all, placed all sorts of objects (candy, money, trinkets

from the gift store, and even hand written uplifting notes) in the bowl and this has become one of the most successful exhibits in terms of active participation. A volunteer at the museum was so moved he began taking a picture of the bowl every day and posting it to an Instagram account, where past visitors could continue to connect with the exhibit. This instance shows the remarkability of visitor's potential, if given the right opportunity and tools for interaction.

Lastly, museums must be responsive to participant's actions and contributions in order to foster participation. An interesting exhibit, called "love tapes", featured at the LA Institute for Contemporary Art compiled interactive videos of strangers recording their thoughts on love. When it was time for the exhibit to close, rather than archive the videos into storage, the museum continued the project all over the United States. Currently there are 2,500 love tapes in existence and counting (McLean, 2007). The museum fostered participation culture by extending and using visitor's contributions by making it something bigger and more important.

What Makes a Good Interactive Exhibit?:

I would like to stress the idea that interactivity is not a question of technology, but rather of human communication (Hoffos, 1992). Technology simply offers various types of modes of communication, whereas interactive technology allows continuous two-way transfer of information between two or more users/forces and a central point of a communication system (Hoffos, 1992, p. 7).Technology is a tool for engagement and learning, but does not always mean active participation (Runnel, et al, 2014). The biggest strength of technology,

according to Diane Pelrine (Director of Curatorial Services at the Indiana University Art Museum), is that it can allow the visitor to “assign as much or as little information as people would like” to the object itself. Additionally, interaction is not generated by solely attending exhibits because a visitor can be disengaged throughout the process. Interactivity means the user can affect change they can detect, even if it small or momentary.

Bob Raiselis, a current Exhibit Developer at *Montshire Museum of Science,* identified several key features of a strong interactive exhibit:

The exhibit is inviting

The exhibit needs to look interesting enough to invite someone to stop and spend some time with it. The topic should be interesting and the look of the exhibit should be inviting.

The navigation of the exhibit is understandable

The user must be able to understand what they should do to get the exhibit to "work". If the navigation is not clear, then the visitor will, at best, think it is a confusing exhibit, and at worst, will think that they are stupid for not being able to figure it out.

The exhibit invites exploration

The exhibit should invite open-ended discovery and conclude with several possible outcomes. If the exhibit has a "right" answer at the end, then there are two problems; there's a "right" answer, and there's an end.

The exhibit inspires interactions among visitors

An exhibit that is designed so that more than one person can interact with it and with each other is more successful than an exhibit that can be used by only one person at a time.

The content of the exhibit is accurate

If an exhibit over simplifies a concept it runs the risk of presenting the theory or idea incorrectly. Exhibit developers must find a balance between accuracy and simplicity.

The exhibit is accessible to people of varying ages and development

A really good exhibit can appeal to people with a wide variety of previous experiences, ages, ethnicity, etc.

A visitor can take something away

Ideally a visitor walks away with something to think about. Often a good exhibit doesn't actually impart any hard information, but instead lets the visitor make connections with other exhibits and other phenomena. This can happen while the visitor is interacting with the exhibit, or it can happen two months later.

Exploratorium exhibit developers have found that too many interactive features lead to misunderstandings or cause visitors to feel overwhelmed, so finding an optimal level of interactivity is crucial to the enjoyment and learning for majority of participants (McDonald, 2016). Another important component of a strong interactive exhibit is its ability to continue interaction after the participant leaves the physical exhibit. This can be achieved by utilizing various social media platforms to engage conversation between visitors. Drotner (2013) states that all "…social media invites and allows easy interaction and exchange between one and a few users…" (p.3). If this is the case then museums should tap into this free and ever expanding tool for engagement and reflexivity. A terrific example comes from the previously mentioned 'Give and Take Table' at the Exploratorium Museum. A volunteer at the museum noticed visitors continued interest in what happens to the objects they placed in the bowl and whether or not they were taken or left behind. This volunteer suggested the museum staff begin posting pictures on Instagram, the popular social media platform for photos and videos. At the end of every day, a volunteer or staff member would post a picture of the objects left in the bowl and this Instagram account now has a large following. This small act on a social media site allows followers to continually interact with this exhibit even if they cannot be at the museum physically.

Another feature museums should consider is allowing visitors to use their personal smart phones or tablets in the galleries. According to the Pew Research Center, 64% of American adults now own a smartphone of some kind, as of 2015 (Smith, 2015). This not only reduces cost for the museum, but fosters a sense of comfort for the visitors to use something they use often. However, for those who do not own smart phones or tablets, the museum

should still offer rentals to create equal access to all. Transitioning from dull text panels to digital formats allows the objects to "speak for themselves" and allows visitors to explore what they consider particularly interesting or enticing about the exhibit (Franklin 2013).

An 'Authentic' Experience:

"An authentic museum object is not just the original, but an instantiation of a thing (physical or digital or otherwise) that can evoke in the user or visitor a deeper sense of human experience and potentiality" (Drotner, 2013, p. 33). A visitor can have an authentic experience even though what he/she sees is substantially artificial. An example would be of a life-size replica of a dinosaur in which all parts, except for one bone, are not 'real'. The authentic experience comes from the visitor experiencing the size and magnitude of the dinosaur, even if that object is not wholly original. If the exhibit consisted of only the real bone and a sketch of the dinosaur, the experience would be less impactful.

Another great example of a cultural institution creating an authentic experience for visitors takes place at the Minnesota History Center. The newest exhibit, "If Walls Could Talk" allows visitors a window into the daily lives of people of the past. "Stories of families, from the first German immigrants through the Italians, African-Americans, and Hmong who succeeded them, are told through rooms representing different eras of the house. Visitors become detectives, piecing together lives of the families who lived at 470 Hopkins Street" (Minnesota Historical Society). The image below features a visitor placing her finger on a birthday cake

which triggers an auditory response, most likely a recording of an individual who once resided in the home. As soon as she takes her finger off the object, the response stops. Not only does this exhibit allow the participant the opportunity to interact with the exhibits as little or as much as he/she wished, it creates a unique and different experience for every individual. While the recordings and objects used in the exhibit may not be entirely original pieces, the stories they reveal are.

So where does authenticity reside and can museums create a genuine experience without displaying an original object to the viewer? While original art works more easily retain their authenticity due to the fact that they have a direct association to the time and people the artwork was created/influenced by, interactive exhibits achieve authenticity of experience only through the perception of the viewer. Curators and exhibit developers may not always be able to discern an artist's, creator, or inventor's true desires and visions for his/her object or theory, but museum professionals must strive to be as faithful to their vision as possible in order to preserve an authentic and genuine experience. This issue will always be a pressing matter for all

museums and will not be necessarily be exacerbated by the use of interactive technology so long as museum professionals are dutiful in their research and presentation of objects.

Science Versus Art Museums:

The term Douglas Worts uses to describe visitors slowly perusing by hundreds of objects on display, rarely stopping for longer than a few seconds, speaking in whispers and keeping their hands to themselves, is called the *museum shuffle* (McLean, 2007, p. 111). Hugh McDonald reports the average holding time for visitors being a minute or less. This phenomena happens most frequently in art museums, where the visitor's actions are heavily monitored by security and the objects and visitors are given rigid physical barriers. Upon exiting the museum, a sense of detachment and lack of personalized experience may leave with the visitor as well. On the other hand, science center's typically invite visitors to touch and 'play' within the exhibits throughout most of the museum. This type of museum hopes to elicit a personal discovery about the object or theory on display, rather than telling the participant what he/she should take away from the encounter. However, sometimes the exhibits concepts can be lost on the participants because they are more concerned with simply playing with the exhibit.

The next dilemma to consider is the approach of the use and display of the objects in the collections themselves. While Science Museums are concerned with making abstract theories and physical phenomena concrete, Art Museums must relay ideas by giving the viewer access to view the object and enough information to feel informed to create their own opinions and ideas. Beyond educating and exposing the public to works of art, Art Museums also must

preserve and protect artworks for generations to come, whereas Science Museums typically can replace their exhibits easily and regularly, if they have sufficient funds. Due to this, Art Museums must learn how to develop responsible interactivity where the interactive experiences are authentic to content and the creative process, all the while protecting the priceless objects. While visitors may never be able to tangibly experience older art works more than on a visual level, interactivity offers the possibility of making personal connections and meaning in a digital realm.

Arguably, the largest difference between the two types of museums are the amount of power and freedom they give to the public, as well as "…access to interpretations rather than ready-made solutions" (Runnel et. al, 2014, p. 35). However, no matter what type of museum visitors may find themselves in, the mentality that "not every visitor is motivated, equipped and enabled to experience art [or science] directly" should not be reinforced (Runnel et. al, 2014). All visitors, no matter level of knowledge and experience with the subject matter, should leave experiencing and learning something new. Interactive exhibits ease this by equalizing the amount of information visitors feel comfortable with exploring and learning.

Interactive Exhibit Case Studies and Lessons

Upon reviewing case studies and speaking with museum professionals, I was able to compile various impacts interactive exhibits have created at the Cleveland Museum of Art and the London Science Museum.

The newest installment at The Cleveland Museum of Art is *Gallery One,* which boasts "the largest multi-touch MicroTile screen in the United States, which displays images of over 4,100 objects from the museum's world-renowned permanent collection" has become an enormous catalyst for how art museums can successfully integrate interactive technology into their pre-existing galleries (Cleveland Museum of Art). This 40-foot Collection Wall allows visitors to shape their own tours of the museum and to discover the full breadth of the collections on view throughout the museum's galleries. The original goals of *Gallery One* were to: (1) Build audiences- including families, youth, and occasional visitors; (2) Highlight featured artworks- including masterpieces by Pablo Picasso, Auguste Rodin, Viktor Schreckengost, Giovanni Panini, and Chuck Close to both the local and global community; and (3) Propel visitors into primary galleries- with greater enthusiasm, understanding and excitement about the collections (Alexander, 2014).

"The Collection Wall's complexity, scale, and visually compelling screens revolutionized how we perceive user engagement with our collections in the museum space. Visitors browse works individually or communally, create their own tour and download it to an iPad and, when they share their tours and favorites with the Wall, they contribute back to the museum and the experience. So each visit delivers a new view and new discovery for the visitor" (Alexander, 2014). Additionally, ArtLens, the museum's new app for Ipad, Iphone and Android offers visitors over nine hours of additional multimedia content and the option to choose as much, or as little, extra content to their experience as they wish (Alexander, 2014). Thus far, The Cleveland Museum of Art has experienced significant success, directly related to the opening of *Gallery One* (within the first year of its opening), including: an increase in attendance by 39%, a 25% increase in family visitors, and an 80% increase in donations (Alexander, 2014). Additionally, currently over 75% of Gallery One visitors bring and use their own device (Alexander, 2014).

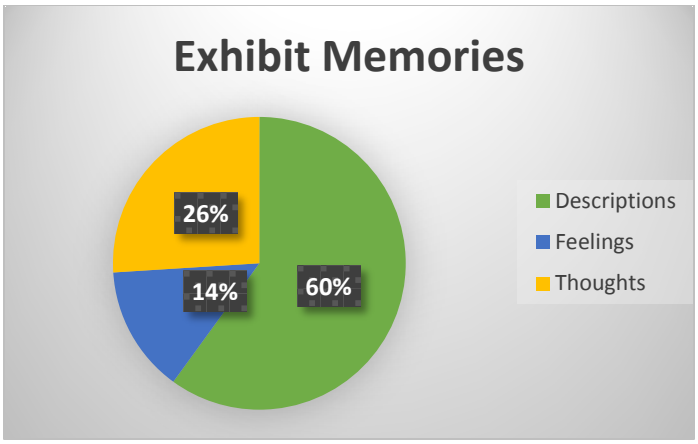
The Cleveland Museum of Art employed several strategic rules for the technology it allows in the gallery. Firstly, CMA's team keeps spare parts on site so that any system can be fixed quickly. Secondly, inactive screens are still able to show content even if the software fails so that visitors never have to encounter a blank screen. Lastly, at least one Gallery One technician is scheduled whenever the gallery is open (Alexander, 2014). These practices are put in place to make sure that technology is enhancing the experience rather than distracting from it.

A study by John Stevenson (2007) researched the interactive exhibit Launch Pad, at the London Science Museum, to research the long-term impact the experience had on its visitors by

interviewing participants six months following their original trip to the museum. Stevenson interviewed a total of 396 visitors which were an almost equal ratio of adults, children, males, and females. The results are as follows:

- 98% of visitors had talked about their visit either with each other or with other family or friends
- When asked whether an exhibit which had impressed them reminded them of other things, 55% said yes
- When asked whether they had learned anything from an exhibit which had impressed them the most, 55% said yes

Additionally, Stevenson broke down the participants responses into three categories. The first category, *Description*, was when the respondent described what he or she did with the exhibit itself. The next was *Feelings* which were accounts containing sentiments such as enjoyment, surprise, annoyance, dissatisfaction, etc. with the exhibits. Lastly, there was the category of *Thoughts*, which were statements demonstrating thinking or reflecting on the exhibit in some way either during or after the interaction. The graph below demonstrates the breakdown of respondents answer style:



The data collected suggests that there is little difference between males and females but that there are small but noticeable differences between adults and children. Specifically, children spend about 20% more time attending to the exhibits than adults (Stevenson, 2007). Furthermore, about 70% of each interview was concerned with the exhibits and the rest pertained to other museum details such as admission, parking, and purchases at the gift shop. The exciting realization Stevenson discovered was that visitors could recall in vivid details what they, or others, did with an exhibit, what they thought about it and how they felt about it (2007). One of the more exciting observations Stevenson made was that there is little variation in behavior over the time of a visit thus indicating that visitors are not subject to museum fatigue in Launch Pad. This suggests that interactive exhibits may in fact contribute to a decrease in museum fatigue. Overall, the data collected in this study suggest that there are no simple features or characteristics which guarantee popularity to an exhibit, but the interaction is indeed impactful and remembered.

Thoughts from Museum Professionals

I had the opportunity to interview two museum professionals and gain insight into what technology and interactive exhibits means to them. The first person I spoke with is the Director of Curatorial Services (sometimes also called the Chief Curator) at the Indiana University Art Museum, Diane Pelrine. Diane has been with IU Art Museum since 1986 and has also had experience working at the Indianapolis Museum of Art and Mathers Museum of World Cultures. While she does not believe authenticity of an object is lost the more participation is involved, she does think that accuracy of the object can be skewed. She recalled many times when visitors would look at images of objects online and then be shocked when they saw the object in person because it was either smaller, larger, or different in some way or another. Seeing an object in person is the only way to experience the subtleties fully (surface, texture, size) and digital representations tend to warp that. Additionally, Diane believes art museum visitors need to engage with art itself, and technology can run counter-intuitive to spending time with original objects.

The perks of technology, as far as Diane sees, is of allowing visitors to view objects three-dimensionally rather than viewing it one-dimensionally on display. For example, sculptures are meant to be seen from all sides, but typically visitors can only see one side when they are on display. Diane mentioned that most museums are beginning to recognize the need of museums to offer a technological component for today's younger audience and are attempting to find new ways to accomplish that.

The second person I was able to interview with was Hugh McDonald, an exhibit developer at the Exploratorium Museum in San Francisco, California. Hugh has had an impressive 15 year career at the museum and has had many different roles including: science writer for exhibit graphics, head of editorial department, and grant writer. Additionally, his experience as a professor in Psychology at Indiana University greatly impacted the way he develops social exhibits, primarily focusing on how people perceive, interact, and think. In fact, his main goal in designing exhibits for visitors is to get them to discover something new for themselves. As a researcher, Hugh has found ample evidence that tactile, active learning leads to a deeper, richer engagement. Tactile learning also allows visitors to remember answers more easily and relate the newly acquired knowledge to their own life. According to Hugh, creating a fun, engaging experience is more important than pounding theories and concepts into visitors' heads. Hugh believes the museum can be most impactful not by providing information that can be gotten elsewhere, but by offering participants an opportunity to perform their own experiments and formulate their own thoughts. When asked for ideas on how interactive exhibits can be used in art museums, Hugh predicted that the distinction between art and science museums will slowly begin to fade away and that all objects eventually will be accessible and more open-ended. Artifacts will cease to be seen as semi-sacred objects, but rather vessels for new experiences. Hugh foresees interactive displays and technology heading in the direction of increased imagery, holograms, and other platforms where visitors can view different phenomena happening at different levels. Additionally, social media should be used as a tool to spread ideas and communicate with the public. In terms of investment, Hugh believes much attention should be spent on the materials used to create exhibits (wood and metal are

longer lasting than plastic), as well as the computer technology. This will allow the exhibits to last for much longer and require less technological updates and maintenance. The last thing Hugh wanted to share was that the world of museums are so diverse that essentially one context is not always the right for the other. While the level of interactive exhibits and technology depends from museum to museum, all exhibits should be designed to create freedom for the user.

Conclusion

The age of the "gate-keeper of information museum" is coming to an end and must be replaced by the "communicative museum" model, where new technologies introduced are communication technologies, enabling dialogue, interaction and power-sharing (Runnel pg.15), in order to flourish in the 21st century. Initial investment of interactive exhibit technology and maintenance are a serious factor museums must face before making the leap, but all museums, regardless of size, should begin by actively digitizing collections (an inexpensive feat) so that the transition to interactive technologies is a smooth one. Small steps, such as creating an interactive App or text panel, are crucial to begin implementing an engaging experience for visitors. Further research on measurements of success for interactive exhibits need to be explored, but for now asking a few simple questions can give a general sense of whether an exhibit is providing an engaging and interactive experience. These questions are: Who comes to the exhibit? (Intergenerational groups)?; How long do they stay?; How do they engage with the exhibits?; and Do they continue to interact with the phenomena after reading the graphic's explanation?

The most common reasons visitors do not attend museums are: a lack of free time, limited social capital, different lifestyles/interests, a shortage of a good place for community, and lack of education or information literacy (Runnel et. al, 2014). Due to the democratizing effect open-ended information and technology has on people, interactive exhibits have the potential to level the playing field of who can enjoy, experience, and connect with the museum's collection.

The very act of installing technological components into exhibits does not necessarily trigger the positive impacts seen in museums such as the Exploratorium, Cleveland Museum of Art, or the London Science Museum. Curators, IT staff, and exhibit developers must work closely together to create exhibits that "embrace technologies that facilitate, deepen, and expand access…"(Franklin, 2013) to the collections themselves. This is a very exciting time for the museum world because it is on the precipice of a new era of relationship between the institution and the individual. Interactive technology should be seen as a bridge to form this relationship rather than a burden or barrier on behalf of the museum.

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