

**“THE MEDIA-ENHANCED MUSEUM EXPERIENCE:
DEBATING THE USE OF MEDIA TECHNOLOGY
IN CULTURAL EXHIBITIONS”**

by

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Abstract

This paper explores the convergence of media and museum. It examines the use of new media technology in cultural exhibitions and how these technologies are changing the concept of a museum. It also explores issues of cultural representation, interpretation, and authenticity of content, and the need for best practices when integrating media technology in museums, both on-site and on-line. This paper includes case studies of four worldwide traveling exhibitions that integrate media produced by the author.

THE MEDIUM IS THE MUSEUM

We are at the forefront of a paradigm shift driven by today’s digital media technologies that is significantly changing the tools we use to represent, interpret, and access history and culture. There are many pioneering innovations that have the potential to further our understanding of modern and ancient cultures in significant new ways. But they can also misinform and obscure. The issue is no longer *whether* to use media to enhance museum exhibitions, but *how* to use it.

The rapid expansion of accessible and affordable media technology, combined with near universal access to the Internet in the U.S,ⁱ is fundamentally altering the museum experience. Displays of isolated artifacts identified by diminutive object labels and accompanied by a solitary film in a small annex gallery, are rapidly disappearing. Museums can no longer be defined simply as “a building or place where works of art, scientific specimens, or other objects of permanent value are kept and displayed.”ⁱⁱ They are undergoing “a fundamental shift from being primarily a presenter of objects to being a site for experiences.”ⁱⁱⁱ

This shift has occurred at a remarkably fast pace. In 1995, Douglas Worts from the Art Gallery of Ontario, took an informal poll and found that nearly 100% of museums had already or were planning to develop new technology-based mediums

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for the public.^{iv} According to the Institute for the Future, “Emerging technologies are transforming everything that constitutes our notion of “reality”—our ability to sense our surroundings, our capacity to reason, our perception of the world.” Technology penetration extends far beyond physical location. By 2006, according to the Institute for Museum and Library Services, 43% of museum visits in the U.S. were remote, predominately through the use of museum websites^v. The Institute for the Future predicts, “The wireless Web, virtual worlds, augmented realities overlaid on physical ones, advanced simulations, and networked knowledge promise to transform our everyday experiences into a symbiotic blend of analog and digital experiences of human and machine. “The Network” will finally become intertwined with the fabric of our lives.”^{vi}

Here is a brief summary of how the use of new technologies are changing the museum experience and, perhaps more importantly, how they are redefining the concept of a museum altogether. Not unexpectedly, the changes mirror larger societal and cultural trends of our world today, many of which are *user-driven*.

I Want To Be Entertained

The buzzwords: immersive, experiential, interactive, dynamic, story-driven. Today’s museum exhibitions are adopting a range of new media technology, from high-definition videos, animation, music, sound effects, sets and lighting, to 3-D movies, 3-D interactive, 4-D sensoramas, holographic imagery, simulations, gaming and a host of other new technologies just around the corner. The basis of most experiential exhibitions is the old-fashioned device of dramatic story telling, a successful tool for engaging audiences since Aristotle’s era of oral storytelling. The “*Real Pirates*” and “*Tutankhamun*” exhibitions (*see Case Studies*) integrate artifacts and media technologies along strong story narratives designed to immerse visitors in an historic time and place. The goal is to create a temporal “suspension of disbelief” similar to that of narrative movies^{vii}. Visitors are drawn into the story with a multi-sensory experience that is as much about feeling and emotion, as it is about knowledge and cognition. “For Americans under 30, there’s an emerging structural shift in which

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consumers increasingly drive narrative,”^{viii} asserts a study by The Center for the Future of Museums. It predicts a future of immersive interactive programming and an emerging you-as-protagonist concept.

I Want It Now

Buzzwords: Instant access, on-demand information, streamed media. The audio tour is being replaced by multimedia tours using mobile phones, PDAs, barcodes, and GPS locators to provide information when and where the visitor wants it. “...every location and object can be ‘digitally augmented’ and learned about at the moment of need.”^{ix} The information can be continually updated in the same vein as today’s cable news. Podcasts and streaming videos, as found on YouTube and Vimeo, provide additional exhibition-related content. At its recent “Smithsonian 2.0” symposium, the institution discussed plans to digitize its assets to make them available on demand to the entire world. Imagine having access to its collection of 13 million photos! ^x

I Want It Everywhere

Most U.S. museums today are extending visitors’ experiences beyond their buildings’ walls with websites that offer supplementary on-line exhibitions and educational modules. Some are reaching out to visitors on social networks such as MySpace and Facebook. Cell phone tours are now extending beyond museum walls, providing instant information about historical and other sites of interest around cities. The Newseum and others offer virtual experiences on Second Life, where one’s avatar might join a docent avatar on a tour of a digitized exhibition. More recently is the emergence of cyber-exhibitions^{xi} that originate and exist solely on the Web, forging a new kind of museum-beyond-borders. The Institute for the Future advises, “Cyberspace is not a destination; rather, it is a layer tightly integrated into the world around us.”^{xii}

I Want It My Way

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Personalizing, customizing, and individualizing are key trends. Devices are now available that offer bookmarking or tagging features so visitors can identify objects of particular interest. Additional information about these objects is then electronically sent to the visitor for later access. The Getty Museum enables visitors to use the web to customize their visit beforehand. “...visitors can go on-line in advance, select works of art they are particularly interested in seeing, and a personalized handheld-based tour is ready for them when they arrive at the museum.”^{xiii} A study by University of London’s King’s College states, “Visitors are calling for an experience that is of immediate personal relevance and which results in a clearly identified knowledge gain.”^{xiv}

I Want To Share With Others

The buzzwords continue: participatory, social tagging^{xv}, crowd-sourcing^{xvi}, digital campfires. These trends reflect visitors’ desire to own their personal experience and share those experiences with others. With the advent of social networking, we are seeing new forms of participatory user experiences. Museums encourage visitors to add their input to that of experts by providing, for example, on-site video capturing devices and on-line story-gathering features on their websites. From blogs to wikis, visitors can share critiques, opinions, and reactions to the contents of an exhibition. It is now possible for individuals to “curate” their own art collections by gathering works from multiple museum websites and sharing their collections on social Websites such as Flickr and Deviant Art. Hybrid technologies make it possible to tag photos and other media with geographic metadata, indicating where and when the photo, for example, was taken.

I Want to Create Something

Researchers are finding that digital technology is reinvigorating our creative juices, particularly among today’s youth. According to the Exploratorium’s Sherry Hsi, “New media enable a broader variety of personal expression by youth and enable youth to share these expressions with a wider audience, who in turn, may interact with the original creators to promote shared expression in a variety of new and

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unexpected ways.”^{xvii} ReachAdvisors’ national survey results suggest there is a creative renaissance among today’s youth. “This generation grew up with a broad palette of digital tools and creative resources; as a result, they are demonstrating an extraordinarily high level of creative output *and* creative consumption.”^{xviii} Many museums are now testing virtual gallery and open-source exhibition tools. Efforts such as the *Exhibit Commons* invite visitors to create their own “onsite exhibition experiences by crafting their own exhibits.”^{xix} A variety of software, from simple tools to simulation and virtual reality technologies, is making it possible for visitors to create artworks and artifacts in the styles portrayed in specific exhibitions.

Not only are these new media technologies greatly influencing the museum experience and how we define what a “museum” is, but how we interact individually and collectively with cultures, both past and present. Two distinct new forms of museum experience are emerging:

- 1) The Media-Enhanced On-Site Experience. It is richly multi-sensory, contextualized, experiential and immersive. It is narrative-driven. It draws a diversity of people together and provides a collective experience.
- 2) The Media-Driven Off-Site Experience. It is personalized, on-demand, global, and enables a vast sharing of information and personal experience.

In both models, “visitors” are increasingly becoming curators, docents, and artists as well. They have unprecedented access to cultural information. Given the extent to which these new media technologies are driving this radical change, Marshall McLuhan would no doubt assert that in the 21st century: the medium is the museum. ^{xx}

THE CONTROVERSY

Advocates claim today’s media technology can engage people in dynamic new ways, boost attendance, greatly extend a museum’s reach, that it’s the wave of the future, and inevitable. More than any other argument, advocates promote media technology

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as necessary to attract younger visitors, a generation that is virtually-connected, digitally-native, and social-networked. This is no small issue. According to a recent study by the American Association of Museum, age 5 to 9 is the “critical age for converting children into lifelong museum-goers and advocates”.^{xxi}

Critics, on the other hand, caution that today’s media technology entertains at the expense of accuracy, that it distracts from real knowledge, and undermines the educational experience. They fear that at its best, it is window dressing and at its worse, it grossly misinforms. They caution that web technologies draw people to virtual representations at the preclusion of experiencing the real objects, forcing museums to become more concerned with an on-line presence than the contents of an actual collection.^{xxii}

The debate over how to display and represent objects, and how to share those culture representations with the public, is not new. After all, how authentic is it to display an artifact inside a building, isolated from its origins? Or to describe an artifact with an object label that reflects the biased perspective of someone from a different time, place, gender, ethnicity, culture, or political bent.

In March 2009, *The Washington Post* profiled the work of Ralph Appelbaum, head of the world’s largest museum and exhibit design firm. Appelbaum is the man behind the transformation of the American Museum of Natural History, Philadelphia’s National Constitution Center, DC’s Holocaust Museum, and the Newseum. He promotes designs that evoke visitors’ feelings, with an emphasis on emotion, some might say at the expense of knowledge. . . “...it became Appelbaum’s passion to fill in that missing narrative, the human side to the seemingly lifeless object,” says the article’s reporter Phillip Kennicott. He likens Applebaum’s philosophy of “noncognitive” education to Jean Jacques Rousseau’s philosophy of teaching through carefully planned “epiphanies” but he goes on to say, “It’s not clear that this sort of educational philosophy actually works. . .Or that it’s any less elitist than the old-fashioned museum that hardly exists anymore.”^{xxiii}

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Alison Griffiths, a leading historian of media and museums, traces the conflict back to the early 1900s when “some critics bemoaned the sensationalist leanings of turn-of-the-entry museums” while “others maintained that museums were inaccessible to the general public due to their overly scholarly preoccupations.”^{xxiv} Echoing the critics of 100 years ago who decried the use of novelty, gadgetry, three-dimensionality, and illusion, some critics today “worry that digital technology is blurring the line between the traditional public museum and the commercial theme park and retail complex. . .into generic spaces of ‘edutainment’.”^{xxv}

Finding a balance between education and entertainment continues to challenge the museum community, more than ever. It’s useful to take a step back and examine what options exist for educating the public about cultural artifacts and artistic objects:

In an ideal world, we might travel back in time and engage in a real-life experience, spending time with Cleopatra as she listens to musicians at her palace in Alexandria, or with Monet as he paints lilies in the gardens of Giverny. It would be the ultimate immersive, experiential, participatory (or at least observatory) cultural encounter. Closer to reality, we might see the objects *in situ*, in their original surroundings. We would travel to the Paleolithic caves in Southern France and gaze in semi darkness at the simple drawings of daily life, or visit the ruins of Pompeii where the eyes of Roman frescoed men and women follow our movement, or walk the grassy hills of Manassas and feel the battles of the Civil War beneath our feet, or wander alongside ruts etched by the wagon wheels of Oregon Trail pioneers. . .these experiences stimulate a profound sense of connection that deeply stir our imaginations. But even if everyone had access to this kind of travel, no place remains static. Few sites can be preserved in their original state and some no longer exist at all. Many sites in recent years have been severely damaged by war. See *Case Study: “Afghanistan: Hidden Treasures.”*

The idea of amassing objects for display, outside of their original context, was first popularized during the Renaissance in the form of private collections. These playful “Cabinets of Curiosities” evoked a sense of discovery and wonderment,^{xxvi} but were not generally available to the public. It was the Age of Enlightenment that spawned the idea of creating public museums. The mission was to educate by presenting art and artifacts in discrete spaces, beyond the walls of private homes, churches and palaces.

Many of these public museums assumed a formal approach, typically treating cultural objects as precious icons. They were exhibited in “isolated ivory towers,” states Victoria Newhouse, who refers to this displaying of art divorced from its natural surroundings as a “temple of culture”, a secular religion in which museums are “sacred spaces”.^{xxvii} This phenomenon continued over the years in part due to “limited shelf space”, says Chris Anderson, editor in chief of *Wired* magazine, resulting in “the elevation of a priesthood of curators, editors and gatekeepers whose job it was to try to winnow through everything and offer up what they thought might be the best of the best.”^{xxviii}

Today’s radical shift is, in part, a reaction to the rarefied model of many 20th century museums. New media technologies are driving museums to evolve from “expert-centric” to “visitor-centric”, where people actively learn through experience and discovery, and “incorporate their own cultural understandings into a construction of knowledge of the world: a ‘constructivist’ view of learning.”^{xxix}

There is now significant opportunity to reinforce a democratization of knowledge through global Internet access. Such ubiquitous, inclusive cultural participation enables museums to reach out to all populations, to represent diverse points of views, and to expand museums’ role as on-site and on-line cultural community centers.

A FRAMEWORK FOR BEST PRACTICES

When we live in a world that is at the crossroads of tangible and transitory representations of culture, we inevitably find ourselves questioning what is real and

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what is counterfeit. This issue is not as simple as genuine object versus virtual representation. It includes managing visitors' perceptions, expectations, desires, and demands, on-site and on-line, as well as communicating and interpreting with integrity, and reassessing learning theories. The systemic use of new media technologies to enrich, rather than undermine, our cultural understanding is central to this discussion. How can we best use media technologies to enhance and educate rather than misinform and dumb-down, to create appropriate and authentic cultural context, and to entertainment without reducing the cultural experience to a themepark ride? The following is a starting point for addressing best practices:

Public Trust

There is a long-standing contract of trust between museum institutions and the public. Museums are viewed as educational institutions and arbiters of truth. Visitors expect the objects they see to be real, the information to be factual, and the context to be accurate. This relationship is fundamental to the visitors' experience, whether on-site or on-line.

The Challenge:

How can museums maintain their credibility contract with the public? Today, visitors can have a much greater participatory role, from providing information and personal experiences, to creating and curating their own exhibitions. To what extent does such public participation undermine the veracity of what's presented?^{xxx} Will it be incumbent on museums to regulate content and source information, or will an open-source, self-regulated approach, such as that adopted by Wikipedia, prevail? Are there means for ensuring credibility in a largely unmediated exhibition format? If so, will the role of 21st century curators shift from that of expert to that of guide, helping to lead the public through the valley of veracity?

Representation

A valuable benefit of new media technologies is their potential to reconnect artifacts to their spatial and temporal origins, thereby connecting visitors to past civilizations and different cultural experiences in unprecedented ways. Advanced computer

animation can re-create sophisticated models of ancient temples to scale (*See Case Study: Tutankhamun Exhibitions*) and show how objects were used. Recent advances in visual mapping technologies such as Google Earth are making it possible to view ancient ruins around the world. This mapping technology combined with high definition photos and video enable fly-through animations of exquisite detail. Immersive simulations will soon provide virtual time-travel experiences, in which visitors join archaeologists in uncovering treasured artifacts.

The Challenge:

New media technologies are only as sophisticated as their content input and delivery output. (In the early days of computer programming, the popular phrase was “garbage-in, garbage-out”.) Many on-line exhibits do not yet provide a sense of scale or texture of the original objects. Three-dimensional sculptures are represented in 2-D formats. Photos of paintings and artifacts are scanned and represented as same-size images. Low-resolution scanning omits textural information and distorts color. Low-cost computer-generated imagery (CGI) over-simplifies structural content. Lack of research, data and funding undermine the veracity of digital replicas. Perhaps most insidious is how easily digital imagery can be altered and manipulated, inadvertently or intentionally. Technological advances will help to resolve some of these issues but not all. How can museums and the public collaborate to create quality standards for cultural representations?

Authenticity

There is a rapidly growing propensity, particularly among younger generations, to live on the Web and by the Web. The Internet connects society in far-reaching and instantaneous ways but often at the expense of real and tangible experiences. It provides access to only a narrow amount of cultural information, and is limited to digital representations. AAM’s “Museum & Society: 2034” report predicts: “The prevalence of the digital, virtual world raises public awareness of the increasingly rare world of non-digital assets that help tell the story of how humans got where we are. Museums play a more critical role than ever as purveyors of the authentic,

addressing a human desire for the real as the wonders of technology march us towards the opposite path.”^{xxxix}

The Challenge:

How do we define authenticity in today’s digital world? Finding a balance between cyber and tangible connections is fundamental to addressing this issue. Experiencing real artifacts – touching the stone that another person touched thousands of years earlier, seeing the texture of paint on canvas, smelling the musty aroma of an ancient relic – these evoke feelings that digital replicas cannot. Traveling exhibitions bring authentic objects to a larger public, but is this enough? Finding ways of making real artworks and artifacts available to greater numbers of people will become increasingly important as the digital age progresses.

Interpretation

Interpreting modern and ancient culture is at the core of what museums offer. New media technologies provide a range of new interpretive opportunities, but also raise concerns when addressing diverse and increasingly fragmented audiences. “When considering a technology project, it is important to remember that the digital divide is still very real,” cautions the *Museums in Transition* study. “There are significant differences in access to and understanding of technologies between people of different races, genders, and socioeconomic groups.”^{xxxix} New media technologies are expanding the public’s interpretative roles as storytellers, data gatherers, curators, and exhibit designers.

THE CHALLENGE: How can we provide interpretation that is meaningful to widely diverse groups? The digital divide is gaping when addressing young vs. older generations. Museums are trying to attract younger audiences by turning to newer media technologies to interpret historical events, a trend that has provoked some controversy. For example, the Abraham Lincoln Museum in Springfield, IL was criticized for using television to depict a mock broadcast in which “Meet The Press” former host Tim Russert provides commentary on political advertisements of Lincoln and his opponents. Critics decried the use of television as an inauthentic interpretation of how political debates were conducted during Lincoln’s time. The

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museum ultimately posted a sign stating that television did not exist in 1860 but stood by its decision to use a modern interpretation they felt would appeal to younger generations. The age gap is just one challenge. As technology enables increasing global connections and the building of on-line social and cross-cultural communities, how do museums address the needs of such widely diverse audiences? How can museums establish a range of interpretative models enable participatory and inclusive input to bridging the culture gaps?

Education vs. Entertainment

In 1998, Victoria Newhouse, author of *Towards a New Museum*, predicted that we were entering the age of “museum as entertainment”^{xxxiii}. There’s no doubt that the array of digital technology and media tools we have at our disposal today enables us to provide entertainment on a massive and expansive scale. 3-D and 4-D movies are increasingly popular. Merged technologies are giving rise to a plethora of new possibilities, such as interactive spherical media that enable users to view digital videos from 360-degree perspectives, and simulated virtual experiences combined with location-specific data to provide reality-based experiential tours. As museums move toward entertainment-driven exhibitions, critics fear the artifacts themselves may no longer be at the core of the experience. But it very well may be the entertainment experience that lures visitors to the on-site museum. “Hands-on” involvement was a first step in learning theory. The multi-media, multi-sensory potential of “brains-on”^{xxxiv} and “emotions-on” involvement can enrich the learning experience to a much great extent.

The Challenge:

New media technologies are so appealing to younger generations that it is challenging to direct their attention to the real objects. The key will be a sophisticated understanding of integrative interpretative implementation. This requires a balance of experiential layers and options to engage all visitors in a compelling cultural story, told through both the artifacts and their context.

CONCLUSION

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New media technologies are altering the concept of traditional museums as we once knew them. They offer a range of options for how we experience and interpret culture, and unprecedented opportunities for sharing cultures with diverse populations. However, these emerging technologies can also divert visitors’ attention from an authentic experience, undermine any real depth of cultural understanding, and misinform. The “education versus entertainment” debate, if constructive, can be a cornerstone for establishing best practices. Museums, in their multitude of new forms, have the potential to evolve into dynamic, multi-media, multi-faceted cultural centers^{xxxv} that connect diverse populations from communities around the world, and add substantial value to the understanding of modern and ancient cultures.

CASE STUDIES

CASE STUDY – *“REAL PIRATES: THE STORY OF THE WHYDAH FROM SLAVE SHIP TO PIRATE SHIP”*

(Cincinnati Museum Center, 2007; then Philadelphia’s Franklin Institute, 2008; Chicago’s Field Museum 2009). Sponsored by National Geographic Society and Arts and Entertainment Inc., this traveling exhibition is an excellent example of an experiential, narrative-driven approach designed to appeal to all age groups. A committee of eleven scholars and extensive historical research provided a basis for contextual and representational accuracy. It was the team’s goal to combine the entertaining lure of pirates with rich layers of education. The sequence of galleries tell the chronological story of the ship, following the Whydah on its first journey from London to Africa as a slave galley, to its capture by Sam Bellamy, its saga as a highly successful pirate ship, its demise off the shores of Cape Cod, and the discovery of its wreck 300 years later. In each gallery, displays of artifacts, recovered by Barry Clifford and his team over the past 25 years, provide a remarkable emotional bridge to the ship’s history. A young pirate boy’s stocking and shoe, a bent pewter teapot, and other artifacts forge an intimate connection to the people, time and place. Media, sets and lighting contextualize the artifacts and provide visitors with an authentic, immersive experience. For example, a replica of half of the ship is dressed with props and life-like mannequins representing characters based on the ship’s logs and other historical data. Visitors board the ship and enter the Captain’s quarters where Sam Bellamy looks out the aft windows. From his point-of-view, visitors see the sun rise over moving seas, creating a sense of the ship moving up and down. The set comes alive with sound effects, some recorded on a wooden tall ship, and pirate voices (the accents and contents also based on historical research). Another example of the design team’s commitment to authentic representation is a video relating the ship’s history as a slaver. A local African historian in Ouidah, on the coast of Benin, shows visitors where the slaves were kept and how they were marched to the beach where the Whydah landed, provides a detailed account of how slaves were traded and sold there in the 1700s.

*Called Whydah in English, this is the town after which the ship was named.

CASE STUDY – *TUTANKHAMUN*

Both of these large traveling exhibitions are sponsored by National Geographic Society and AEI, and curated by Egyptologist Dr. David Silverman of the University of Pennsylvania. “Tutankhamun and the Golden Age of the Pharaohs” is new and opened in November 2008 at the Atlanta Civic Center. “Tutankhamun: the Boy King and the Great Pharaohs” opened in Los Angeles in June 2005 and has since traveled to Ft. Lauderdale, Chicago, Philadelphia, London, and Dallas, with the highest attendance of any traveling exhibition in the world. Exquisite artifacts are at the heart of both exhibitions, organized along distinct narrative storylines that beckon visitors through the galleries. Media technology, set design, lighting, and music combine to inform and immerse, providing atmosphere and a temporal and spatial connection to ancient Egypt. Teams of scholars and curators provided detailed input throughout the design, construction, and media production to ensure historical accuracy. Rich multi-layering of representational and contextual elements makes the entire experience accessible to a wide range of ages and interest levels. One example of significant value provided through the use of media technology is the extreme close-up, high-definition imagery of some of the artifacts. This footage, displayed close to the actual object, provides unsurpassed visual detail. As with all historical exhibitions, the content is only as accurate as the data known. An interesting debate arose about the use of music in the galleries. No one knows exactly what the music of ancient Egypt sounded like. There are drawings of the instruments on temple and tomb walls, but no written records of how they were played. For both Tutankhamen exhibits, we chose to base our original scores on popular representations of ancient Egyptian music. Some museum venues opted not to use the music because it was not authentically based.

CASE STUDY – *AFGHANISTAN: HIDDEN TREASURES*

Funded by NEH and sponsored by National Geographic Society, this traveling exhibition opened at the National Gallery of Art in Washington D.C. in June 2008,

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then traveled to San Francisco’s Asian Art Museum and Houston’s Fine Arts Museum. It will travel to its final U.S. destination this June, The Metropolitan Museum of Art in New York City. During the making of the films and animations for the “Afghanistan: Hidden Treasures” exhibition, we were keenly aware that the archaeological dig sites from which the artifacts originated were now gone. They have been completely destroyed by bombing and looting over the past three decades. The amazing rescue of the artifacts by a small group of heroic Afghans is a key part of the film story. The high-definition film also captured extreme close-up imagery of ten of the delicate gold artifacts, providing visitors with detail that cannot be seen with the naked eye. We also filmed the painted glass of three Egyptian-Roman vases, footage that draws the viewer into the lifestyle scenes of the people at that time. The 3-D animation of a Persian throne represents the first visual reconstruction of carved ivory panels found at the dig site in Begram. The panels depict the lifestyle of women’s quarters some 2,500 years ago. Leading expert Dr. Sanjyot Mehendale, University of California at Berkeley, provided extensive research to ensure the accuracy of the animation. Of all of the exhibitions for which I’ve produced media elements, this one had the fewest, yet the film and animation provided essential context and story narrative for a deeper understanding and appreciation of the artifacts.

Biographical Statement

My background is producing/directing/writing documentaries. I was a producer and senior producer of National Geographic’s weekly documentary series, “Explorer” for nine years. Four years ago, I launched Blue Bear Films and began producing media technology for large traveling exhibitions, such as “Tutankhamun: The Golden King and the Great Pharaohs”, “Afghanistan: Hidden Treasures”, and “Real Pirates: the Untold Story of the Whydah, from Slave Ship to Pirate Ship”. I am also on the Film and Media Arts faculty at American University in Washington DC and an executive producer for AU’s Center for Social Media. My graduate degree is from Stanford University (MA of Communication/Documentary Film).

FOOTNOTES

ⁱ 74.4% penetration in the U.S. as of March 31, 2009 (up 132.5% since Dec. 31, 2000) Pew Internet and American Life Project JULY 2005 found 87 percent of youth ages 12-17 use the Internet and, of these, 75 percent use instant messaging and 48 percent of those IM it every day.

Source: Internet World Stats, Nielsen//NetRatings, ITU , Computer Industry Almanac.

ⁱⁱ Random House, 2009

ⁱⁱⁱ Hilda S. Hein, *The Museum in Transition: A Philosophical Perspective* (Washington: Smithsonian Institution Press, 2000)

^{iv} He took the poll while delivering a paper at the 1995 American Association of Museums conference.

^v Center for the Future of Museums with the American Association for Museums, “Museums & Society 2034: Trends and Potential Futures,” Dec. 2008

^{vi} Institute for the Future, www.iff.org/node/818

^{vii} A common term used in film theory referring to the viewers’ ability to suspend their judgment and/or reality.

^{viii} Museums & Society 2034, pg. 18.

^{ix} Gyroscope Inc. for the Science Museum of Virginia, “Museums in Transition: Emerging Technologies as Tools for Free-Choice Learning”, 2006.

^x Joel Garreau, “Smithsonian Click-n-Drags Itself Forward”, *The Washington Post*, Jan. 26, 2009

^{xi} The Cluster Project”, for example, is one of a growing number of online collaborative web exhibitions displaying the work of 22 geographically dispersed artists. It has 22 *installations* of illustration, photography, video and other techniques that survey the social, historical, financial, and technological underpinnings of cluster bombs.

^{xii} Zoe Finkel, comment on “The Future Now Blog/Blended Realities”, posted March 5, 2009, Institute for the Future, www.iff.org/node/2615

^{xiii} “Museums in Transition, pg.5.

^{xiv} Heather King, *Technology in Museums – Augmenting the Learning Experience*, (University of London, Kent College, April 2003)

^{xv} Emma Tonkin, Edward M. Corrado, Heather Lea Moulaison, Margaret E. I. Kipp, Andrea Resmini, Heather D. Pfeiffer and Qiping Zhang, “Collaborative and Social Tagging Networks,” *Ariadne*, no. 54 (January 30, 2008):

<http://www.ariadne.ac.uk/issue54/tonkin-et-al/>. Social tagging is characteristic of Web 2.0 services, allowing non-expert users to collectively classify and find information.

^{xvi} Also known as community-based design and distributed participatory design.

^{xvii} Museums in Transition

^{xviii} Museums & Society 2034, pg. 17.

^{xix} Wayne LaBar, “Exhibit Commons: Using the Internet for a New Exhibit Paradigm” Liberty Science Center (USA). 2006

^{xx} Marshall McLuhan’s mentor, Howard Innis, believed: “We can perhaps assume that the use of a medium of communication over a long period will to some extent determine the character of knowledge to be communicated and suggest that its pervasive influence will eventually create a civilization in which life and flexibility will become exceedingly

difficult to maintain and that the advantages of a new medium will become such as to lead to the emergence of a new civilization.” *The Bias of Communication*, p. 34

^{xxi} Museums and Society: 2034, pg. 15

^{xxii} Katherine Jones-Carmil, *The Wired Museum*, (AAM, 1997) pg. 165.

^{xxiii} Phillip Kennicott, “Richard Appelbaum’s Transformation of The Museum World is Clearly Evident,” *The Washington Post*, March 29, 2009.

^{xxiv} Alison Griffiths (Professor, Baruch College, NY), “Media Technology and Museum Display: A Century of Accommodation and Conflict”, presented at the MIT Communications Forum, December 19, 1999.

^{xxv} *ibid*

^{xxvi} Victoria Newhouse, *Toward a New Museum*, (New York: Monacelli, 1998).

^{xxvii} *ibid*

^{xxviii} “Smithsonian Click-n-Drags Itself Forward” in reference to Anderson’s “long-tail” theory that applies to web-based, mass consumer businesses selling small quantities of products to a large number of people. He elaborates in his book, *The Long Tail: Why the Future of Business Is Selling Less of More*.

^{xxix} Barbara Goulborn, *Museum Learning for Adults* (Melbourne Museum, 2001)

^{xxx} “Exhibit Commons: Using the Internet for a New Exhibit Paradigm” poses the question if public participation in the museum experience – to the degree of *Exhibit Commons* – will undermine that trust.

^{xxxi} Museums & Society: 2034

^{xxxii} Museums in Transition: Emerging Technologies as Tools of Free-Choice Learning

^{xxxiii} *Toward a New Museum*

^{xxxiv} Based on an article by Terry Russell, *The enquiring visitor, usable learning theory for museum contexts* (www.gem.org.uk/resources/russell); cited from *Museum Learning for Adults*, by Barbara Goulborn, Melbourne Museum, 2001

^{xxxv} Museums & Society 2034