

Visitor Connection: Digital Integration Strategy for the Art Museum Experience

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Abstract

The normalization of digital integration into everyday life includes that of the art museum environment. However, simply installing digital devices into museum galleries does not necessarily meet visitor needs. This thesis argues that applying the study of everyday digital use to museum visitor studies will inform museum professionals when planning, executing, and evaluating interactive devices in their galleries. It is through identifying a targeted audience, creating measurable goals and objectives for digital application, as well as a detailed evaluation plan that will result in a successful digital integration strategy for art museum galleries. While a device's "wow factor" can play a part in attracting audiences, this work delves into visitor studies that are vital for successful strategic planning, and considerations that will create and impart an engaging and a lasting impression on art museum audiences.

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Nomenclature

Digital, in its most basic meaning, connotes the use or storage of data/information through the form of digital signals and the use of computer technology. The term's larger meaning will be explored throughout Chapter 1 of this thesis.

Handheld Device/Technology refers to mobile devices- those that travel with the visitor and can literally fit in his/her hand.

Interactive translates to an active experience of some kind, whether digital or not, in the form of participation. This can take place between a group of individuals or between a visitor and a feature of the museum experience.

Interactives is used throughout this thesis as a general digital interactive entity- a noun.

In-Person is a descriptor for a device that is offered within the physical museum visit, as opposed to a remote location.

Smartphone refers to a phone with an advanced operating system.

Unplugging or to Unplug refers to the act of consciously choosing to refrain from digital use; whether it is from a smartphone, television, or any other digital device.

Digital Interactives, Digital Devices, Digital Technology, Interactive Technology, Digital Interpretive Devices will all be used interchangeably unless otherwise specified. When referring to a specific model of a digital device, it will be named and referred to by name.

Table of Contents

Introduction	1
Literature Review	5
Chapter 1: Digital Defined	16
Digital Use.....	17
Digital Aesthetic Trends.....	22
Digital Backlash	25
Chapter 2: Digital Use in the Arts and Cultural Field	29
The Arts and Cultural Audience.....	29
Mobile Use and Cultural Audiences.....	31
Chapter 3: Digital Considerations in the Art Museum	37
Strategist Feedback in Practice.....	38
Digital Embedding.....	48
Digital Unplugging in the Museum.....	50
Chapter 4: In Practice	52
What should the creative process entail?.....	52
What should digital interactives do?.....	53
What should digital interactives offer?.....	55
Roles and Responsibilities.....	57
Chapter 5: Thinking Beyond the Standard	59
Appendix	62
Bibliography	65
Figure Index	71

Introduction

Nina Simon, in *The Participatory Museum*, writes “The social Web has ushered in a dizzying set of tools and design patterns that make participation more accessible then ever. Visitors expect access to a broad spectrum of information sources and cultural perspectives.”¹ Indeed, contemporary museum trend and horizon reports are often filled with models for new digital devices to be incorporated into museum galleries as these institutions begin to take the plunge into digital advancement. The “NMC Horizon Report: 2013 Museum Edition” writes that “Collection-related rich media are becoming increasingly valuable assets in digital interpretation.”² Yet, art museum visitors do not fall into one category in terms of their museum expectations and levels of engagement, and there is no single model that can engage all types of visitors. For this investigation, digital devices and applications will include formats such as audio guides, interactive terminals, smartphone apps, personal digital assistants (PDA’s), and touch-screen tables and kiosks. These are all examples of technological innovations that can be designed to be utilized within museum galleries, and therefore accompany and enhance the in-person experience. While these digital media are increasing in value and appeal throughout museums, it is important to question how and why, and most importantly, for whom?

As museum trend reports continue to promote the installation of digital devices into museum galleries, so will the art museum’s compliance. Yet, the question remains as to whether or not such technology is created and incorporated in a manner that considers each type of museum

¹ Simon, Nina. *The Participatory Museum*. Santa Cruz, CA: Museum 2.0, 2010. Print. ii.

² Johnson, L., S. Adams Becker, and A. Freeman. “The NMC Horizon Report: 2013 Museum Edition.” Austin, TX: The New Media Consortium, 2013. Web. Accessed 14 December 2013. <http://www.nmc.org/pdf/2013-horizon-report-museum-EN.pdf>.

visitor, and thus succeeds in creating an equal visitor experience amongst constituents, as well as how to properly measure that engagement. This thesis will explore the best practices when implementing such technology into the art museum and methods of effective evaluation regarding the visitor experience.

This study is solely targeted towards art museums and art museum audiences for the in-person experience. It has become common practice for many museums such as science centers to incorporate digital interactives into their museum experiences, and sufficient research and evaluation has been conducted regarding their impact. Yet, art museums have been slow to install digital devices beyond audio guides throughout their galleries. Traditional art museum practices for displaying an exhibition is to do so through the eyes of the curator who serves as the ultimate authority regarding exhibit content. This may appear in the form of artwork accompanied by label and wall text, or through the display of works devoid of information so that they “speak for themselves.” Nevertheless, each visitor chooses to experience an art museum visit differently, and many art institutions are recognizing that patrons prefer to discover their own meaning from exhibitions. Kathleen McLean, in her essay “Whose Questions, Whose Conversations?” asserts,

At their best museums are places of inquiry that nourish the exchange of ideas. From historic house to national treasures house, from art gallery to science center lab and natural history display, museums are places to contemplate, celebrate, and share perspectives on human understanding. It naturally follows that all people have a narrative role to play in the exploration of human understanding.³

Therefore, these museums are moving away from installing authoritative exhibitions and towards a participatory and interactive aesthetic. While digital interactives are not the only

³ McLean, Kathleen. “Whose Questions, Whose Conversations?” *Letting Go?: Sharing Historical Authority in a User-generated World*. Eds. Bill Adair, Benjamin Filene, and Laura Koloski. Philadelphia, PA: Pew Center for Arts & Heritage, 2011. Print. 70.

way to achieve this new style of meaning-making in the art museum, they can be developed so as to not disturb the aesthetic of art museum galleries.

Equally important in considering the manner in which digital interactives should be placed within museum galleries is the consideration of how digital devices play a part in contemporary culture and society. It is through examining the ways individuals interact with digital technology in everyday life and what it is they get out of using such devices that must be reflected in the planning and development of devices for the museum. Numerous studies have been conducted that measure how individuals utilize digital devices and at what rate, both in everyday life as well as when visiting cultural institutions. This thesis argues that museum professionals will be better informed when planning, executing, and evaluating interactive devices in their galleries through applying the study of everyday digital use to museum visitor studies.

The three critical research questions guiding this thesis are:

- How are art museums considering the various motivations of different visitors along a spectrum of audience with regard to the adoption and implementation of digital experiences in the galleries?
- What model of research and evaluation best measures the effect of museum technology on the visitor?
- What does the successful implementation of digital experiences look like in art museums?

This investigation will provide considerations for art museum staff when strategizing the adoption and placement of digital devices throughout the museum experience, as well as

evaluating and measuring the impact of such devices. It aims to contribute to and supplement the knowledge of the decision-makers in the art museum, and ultimately influence the presentation of ideas, information, and experiences to the visitor. Many art museums are creating positions for and hiring digital strategists onto their staff, and it is important that such positions, along with related staff, solidify a well-informed framework prior to the installation of digital interactives. It is through the careful planning of needs, goals, objectives, usability and production, as well as a specific identification of the targeted audience(s) that will lead the art museum digital movement towards successful application.

The first chapter of this thesis explores digital trends in everyday society: the manner in which individuals use technology; contemporary design trends that when utilized, foster and create captivating devices; and the backlash that ensues due to the rapid adoption of digital devices. The second chapter serves to inform the reader of recent motivations and characteristics of the museum audience, as well as statistics on the manner in which audiences utilize their devices within arts and cultural institutions and events. The third chapter delves into the application of digital devices and interactives within art museum experiences. It explores current digital projects within art museums as well as the feedback, opinions, and criticisms regarding devices in the museum from contemporary digital strategists and museum professionals. Lastly, the final chapter of this thesis synthesizes the information provided throughout the work, and presents it through recommendations and best practice strategies for the reader.

Literature Review

In conducting this research, it is imperative to examine the related studies on digital devices that have already been undertaken or are currently in progress. Numerous scholars have chosen to prototype one particular digital device or model and how it functions in the museum setting. Such history and background research of devices in art museums allows for a general understanding of what has previously been discovered and evaluated, and therefore applied (or not) to future models.

The first museum visitor technology was invented in 1952 and was a handheld device. In his introduction to *Digital Technologies and the Museum Experience: Handheld Guides and Other Media*, Loïc Tallon writes, “the developers then, like developers today, were drawn by its unique potential to mediate an experience individually controllable by each visitor, which was content rich, was personal to them, was available at any time, and suited learning styles not served by catalog, text panel, or label.”⁴ Yet due to a lack of developed technology, this device in the Stedelijk Museum that distributed mobile lectures relating to artworks in multiple languages was not able to meet such goals. Here, lectures were recorded through a closed circuit short-wave radio broadcasting system and played on an aerial fixed loop around the gallery. Visitors picked up the broadcast through a portable radio receiver with headphones.⁵ One can only imagine a number of functional faults that this particular device encountered, particularly when conceptualizing the ability for a radio wave to transmit throughout a museum or museum gallery.

⁴ Loïc Tallon. “Introduction: Mobile, Digital, and Personal.” *Digital Technologies and the Museum Experience: Handheld Guides and Other Media*. Ed. Loïc Tallon and Kevin Walker. Lanham: AltaMira Press, 2008. xiii-xxv. Print.

⁵ Ibid.

Multiple variances in models of digital and personal devices have since developed after 1952. From the Walkman audio devices of the 1970's to the Random Access Memory (RAM) museum recordings of the 1990's, strategists have reinvented the audio guide and created new and different digital interactives to engage visitors in the museum.⁶ While the evaluation of past devices will assist in the contribution of information throughout this thesis, it is important to consider the digital advances and strides our society has made throughout the past decade. Rather than measure the effectiveness and operations of the device itself, it is the visitor impact and goals of the device that museum professionals must evaluate when gauging the effectiveness of a digital device in a museum.

In "Interpreting Art Digitally: The Evaluation of Digital Interpretation of Art in Museums," Tesia Lu examines digital interpretation in the Philadelphia Museum of Art, The Barnes Foundation, and The Rosenbach Museum and Library.⁷ Ultimately, Lu finds that digital interpretation can both extend and restrict the museum learning and experience. Digital interpretation can serve to enhance the museum experience, but it cannot replace it.

In search of evidence proving that interactive digital devices provide quality visitor experience, Christian Heath and Dirk vom Lehn examine the ways visitors utilize Personal Digital Assistants (PDAs) and touch-screen information kiosks throughout established decorative art museums. They do this through ethnographic and video-based visitor studies in their article entitled "Accounting for New Technology in Museum Exhibitions." The authors

⁶ Ibid, xiv.

⁷ Lu, Tesia. *Interpreting Art Digitally: The Evaluation of Digital Interpretation of Art in Museums*. MA Thesis. University of the Arts, 2012. Print.

note that many museums consider an exhibition to be successful based on an increase in visitor attendance, yet such evidence does not suggest an increase in visitor satisfaction due to visitor experience. Researchers are currently gauging the success of digital interactives on whether visitors stop more frequently for an exhibit containing digital devices and through the amount of time visitors spend in exhibits. However, Heath and vom Lehn argue that it is interaction with the object and content of the exhibition as well as social interaction that define quality visitor experience. It is critical that the features of a digital device aid the visitor in his or her experience through an enhanced understanding of its content.⁸ The idea that social interaction comprises part of the museum experience will remain a constant criterion throughout this thesis. It is the visitor experience, and not the numbers, that should be considered when evaluating a particular interactive.

Elodie Jarrier and Domonique Bourgeion-Renault survey visitor use and opinion of audio guides, interactive terminals, Smartphones, and touch-screen tablets immediately following art museum visits in “Impact of Mediation Devices on the Museum Visit Experience and on Visitors.” The qualitative data was collected through convenience sampling of in-person interviews between 2011-2012. The authors’ intentions in the study are to uncover whether these devices influence the visiting experience and/or behavioral intentions.⁹ Similar to the arguments of Heath and vom Lehn, Jarrier and Bourgeion-Renault argue that, while mediation devices can be a motive for visitation as they serve as an attraction to the visitor, their use proves to weaken social connection between members of a group, and “elicit less

⁸ Heath, Christian and Dirk vom Lehn. “Accounting for New Technology in Museum Exhibitions.” *International Journal of Arts Management*. Vol 7.3 (Spring 2005) : 11-20. Proquest. Web. 8 October 2013.

⁹ Jarrier, Elodie and Dominique Bourgeion-Renault. “Impact of Mediation Devices on the Museum Visit Experience and on Visitors’ Behavioural Intentions” *International Journal of Arts Management* 15.1 : (2012) 18-29. Web. Accessed 8 October 2013, 18.

intense emotion than a guided tour, which is livelier...does not reinforce emotions intrinsically related to the artwork.”¹⁰ The writers go on to examine each device individually, and to criticize audio guides for their negative effect on other viewers.

In Loïc Tallon and Kevin Walker’s *Digital Technologies and the Museum Experience: Handheld Guides and Other Media*, Tallon writes, “The trend is toward personal relevance and interpretations, interactivity, and easy access and control of content to shape the twenty-first-century museum visitor’s experience. Today’s museum visitors are less audience than they are author–active participants in meaning making and content creation.”¹¹ He also asserts that “Simply stated, handheld digital technologies have the potential to mediate personally rewarding museum experiences that no other medium can replicate.”¹² While Tallon acknowledges that every visitor is different and will therefore respond differently to handheld devices, he is optimistic about their use, stating that he hopes for their permanence throughout museum galleries. Tallon seeks to demonstrate how handheld technologies can be applied successfully and encourage social dialogue and cultural stimuli throughout the museum experience. Rather than focusing on the functions of the technologies themselves, he chooses to address the visitor and museum relationship.

Multiple authors have similarly commented on the importance of visitor needs when employing digital devices throughout the museum. Ben Gammon and Alexandra Burch, in “Designing Mobile Digital Experiences,” write that the “key to the success of mobile digital

¹⁰ Ibid, 23.

¹¹ Tallon, Loïc, and Kevin Walker. *Digital Technologies and the Museum Experience: Handheld Guides and Other Media*. Lanham, MD: Altamira Press, 2008. xiv. Print.

¹² Ibid, xviii.

technology in a museum is a detailed understanding of the visitors' needs, wants, expectations, and behaviors."¹³ They continue to add that digital devices can enhance the museum experience through offering authentic learning experiences that allows for the visitor to relate learning to the real world.¹⁴ However, when considering the placement of mobile devices into museum settings, the museum must consider how visitors react to using such technology in various types of museum settings, if technology distracts the visitor's attention away from the museum's objects and exhibits, whether the device impedes on social interaction, and whether or not visitors will make "effective use" of the technology provided.¹⁵

John H. Falk and Lynn D. Dierking agree with Gammon and Burch in "Enhancing Visitor Interaction and Learning with Mobile Technologies." Here, they write "Specifically, technologies must build on and optimize visitors' prior experiences and knowledge, connect to their social group, and directly support visitors' motivations for visiting and their interests before, during, and after the experience."¹⁶ Falk and Dierking add that digital technologies can be positive once assessing these motivations in creating visitor experiences that connect to their personal needs and interests, extending the visitor experience beyond the physical

¹³ Gammon, Ben and Alexandra Burch. "Designing Mobile Digital Experiences." *Digital Technologies and the Museum Experience: Handheld Guides and Other Media*. Ed. Loïc Tallon and Kevin Walker. Lanham: AltaMira Press, 2008. 35. Print.

¹⁴ Ibid.

¹⁵ Ibid, 37.

¹⁶ John H. Falk and Lynn D. Dierking, "Enhancing Visitor Interaction and Learning with Mobile Technologies." *Digital Technologies and the Museum Experience: Handheld Guides and Other Media*. Ed. Loïc Tallon and Kevin Walker. Lanham: AltaMira Press, 2008. 28. Print.

museum visit, and in contributing to, and therefore, enriching the museum visit through providing multi-sensory experiences.¹⁷

Research on visitor experience plays a pertinent role in this thesis, in that one must keep in mind the various visitor preferences, motivations, and tendencies when adding a digital interactive component to the museum experience. Numerous scholars have researched and published theories regarding the museum audience.

In “The Museum Visitor Experience: Who Visits, Why and to What Effect?” John Falk argues that while exhibition structure and content is important in a museum visitor’s experience, “only slightly more than a half of a visitor’s attention over the course of a visit was spent looking at exhibits, with the peak amount of content focus being in the first fifteen minutes of a visit.”¹⁸ The remaining half of the visit was spent engaging in conversations with members of his/her social group. The fact that a museum visit must allow for social engagement must be considered throughout a museum’s incorporation of digital devices.

In “Living in a Learning Society: Museums and Free-choice Learning,” Falk, Dierking, and Adams stress the importance of free-choice learning, meaning learning that is intrinsically motivated, and not forced on an individual. “Learning in and from museums is not just about what the museum wishes to teach the visitor. It is as much about what meaning the visitor

¹⁷ Ibid, 27-28.

¹⁸ Falk, John. “The Museum Visitor Experience: Who Visits, Why and to What Effect?” *Reinventing the Museum: The Evolving Conversation on the paradigm Shift*. Ed. Gail Anderson. Lanham: Altamira Press, 2012. 327.

chooses to make of the museum experience.”¹⁹ Therefore, the visitor in the museum must be able to exercise choice and control over his/her experience. Art museums when incorporating digital devices, therefore, must also be sure to provide choice to their audience in regards to the functions of the devices as well as the option to utilize a device at all during a visit. The authors of the article also delve into the psychology of the learner in the museum, stating that “in the end, what individuals learn depends not only upon the content of the exhibitions and programs, but equally upon visitors’ prior knowledge, experience, and interest, what they actually see, do, talk, and think about during the experience.”²⁰ Therefore, it can be noted that there is no one-size-fits-all digital activity, and that art museums will have to consider the different avenues to take when incorporating such technology into their galleries.

Crucial to the examination of visitor studies throughout this project is the notion of visitor participation throughout the art museum experience. Nina Simon, author of *The Participatory Museum*, urges for active participation and interaction throughout museum experiences. Simon defines the word “connect” as visitor socialization with other people, whether staff or visitors, who share certain interests.²¹ Simon’s methodology includes the use of hundreds of contributor opinions and professional experiences, as well as her personal opinions and experiences. The text provides a multitude of interactive opportunities for museums, yet rarely do these examples involve digital media. When directly addressing the involvement of digital media, Simon acknowledges that it is easier for adults to make connections through digital media because they are uncomfortable interacting with strangers.

¹⁹ Falk, John, Lynn D. Dierking, and Marianna Adams. “Living in a Learning Society: Museums and Free-choice Learning.” *Companion to Museum Studies*. Ed. Sharon Macdonald. Malden : Blackwell Pub, 2006. 325.

²⁰ Ibid, 325.

²¹ Ibid, iii.

Yet, she imagines a digital interactive that will eventually bring participants together in a social manner.²²

Multiple museum professionals, as well as those developing digital devices, practice cluster mapping and visitor categorization so as to identify specific visitor behavior and motivations in the museum. Falk delineates five visitor motivations for visiting a museum, as well as five distinct visitor-identity categories. These include explorers, facilitators, professionals/hobbyists, experience seekers, and rechargers. Falk claims that “unlike demographic categories, these categories are not permanent qualities of the individual,” revealing that a visitor needs a variety of participatory options when approaching an exhibition.²³ It should be noted throughout this thesis that a single provided museum experience (such as a digital interactive) cannot and will not appeal to and reach each visitor cluster in the same manner. While a successfully employed digital device will reach a certain segment of its museum audience through meeting its visitor identity, the device should not hinder the museum experience of the segment that chooses to go without it. Therefore, a museum should provide options for engaging specific cluster groups identified amongst their audience.

In “Rethinking Museum Visitors: Using K-means Cluster Analysis to Explore a Museum’s Audience,” Amanda Krantz of Randi Korn and Associates writes, “To help museums successfully achieve the impact they intend, museum practitioners, evaluators, and researchers need to know about visitors– including their attitudes, preferences, and previous

²² Ibid, 97-98.

²³ Falk, John, Lynn D. Dierking, and Marianna Adams. “Living in a Learning Society: Museums and Free-choice Learning.” *Companion to Museum Studies*. Ed. Sharon Macdonald. Malden : Blackwell Pub, 2006. 325.

experiences.”²⁴ In this article, Krantz et al demonstrate a quantitative method for categorizing and mapping various museum visitors through case studies. In describing the audience at the Dallas Museum of Art, visitors are divided into Curious Participants, Committed Enthusiasts, Tentative Observers, and Discerning Independents.²⁵ Ultimately, Krantz writes,

In talking with museum staff and hearing their reactions, we have found that cluster analysis findings help museum staff come to an understanding of their visitors. The task is challenging, given that human diversity is so complex. Cluster analysis is useful since it allows for the nuances of visitors to emerge, yet it also groups similar visitors according to a specific research questions.²⁶

In “Igniting the Power of Art: Advancing Visitor Engagement In Museums,” Pitman and Hirzy cluster the visitors of the Dallas Museum of Art into Observers, Participants, Independents, and Enthusiasts, so as to gauge the impact of public programming in the museum.²⁷ This work clearly relies on the study that Randi Korn and Associates conducted for the museum, but demonstrates how those clusters contribute to the examination of a particular aspect of the museum.

Similar practices are employed by the digital firm, Night Kitchen Interactive, and noted in “Catching Our Breath: Assessing Digital Technologies for Meaningful Visitor Engagement” by Stacy Mann, Jennifer Moses, and Matthew Fisher. Here, the authors successfully map out

²⁴ Krantz, A., Korn, R. and Menninger, M. (2009), Rethinking Museum Visitors: Using K-means Cluster Analysis to Explore a Museum's Audience. Curator: The Museum Journal, 52: 363.

²⁵ Ibid 368.

²⁶ Ibid 369.

²⁷ Pitman, Bonnie.Hirzy, Ellen Cochran. Ignite The Power Of Art: Advancing Visitor Engagement In Museums. Dallas : Dallas Museum Of Art ; 2010. 125.

museum social behavior and how it relates to digital offerings in museums, and their overall development process when creating digital interactives.²⁸

Such information regarding the study and assessment of museum visitors would not be possible without the valuable research carefully conducted by evaluation professionals. This thesis relies on the suggested practices of scholars and professionals such as Judy Diamond, Jessica J. Luke, David H. Uttal, Minda Borun, Randi Korn, and Roxana Adams. In *Introduction to Museum Evaluation*, Borun and Korn write that “audience research can support institutions’ efforts to understand why various audience segments do not visit- what their perceptions of the institution are, what has prevented them from visiting in the past, and what experiences they value.”²⁹ In this regard, museums must conduct evaluations regarding such visitor information in order to assess whether or not digital installations and devices meet their visitor’s preferences and needs, how, and to what end.

The evaluation process does not end once a museum deems their institution ready for digital incorporation. Rather, in creating a digital device or interactive, the museum must consider evaluation practices throughout the entire process of its conceptualization, development, installation, and analysis. Yet no single format of evaluation can be applied to multiple devices. As Diamond, Luke, and Uttal write, “There is no single recipe for evaluation; each study should be designed to meet the specific needs of the institution, exhibit, or program

²⁸ Mann, Stacy, Jennifer Moses, and Matthew Fisher. “Catching Our Breath: Assessing Digital Technologies for Meaningful Visitor Engagement.” *Exhibitionist* (Fall 2013) : 17.

²⁹ Borun, Minda, Randi Korn and Roxana Adams. *Introduction to Museum Evaluation*. Washington, D.C.: American Association of Museums, 1999. VIII. Print.

being studied.”³⁰ These authors continue to explain that the first steps of the evaluation process include identifying the purpose of the study, its audience, scope, and its particular problem or issue to be addressed.³¹ When addressing digital learning in museums in “Enhancing Visitor Interaction and Learning with Mobile Technologies”, Falk and Dierking write that only longitudinal studies will allow museums to comprehend a visitor’s meaning making outcomes measured through his/her pre-museum history, in-museum experiences, and post-museum history.³²

Whether employing a front-end, formative, remedial, or summative evaluation, or a combination of methods during the installation process, evaluation is integral in determining the value and impact of a device on the visitor, as well as in keeping a device focused on the project’s original objectives and goals throughout its planning and production.

³⁰ Diamond, Judy, Jessica J. Luke, David H. Uttal. *Practical Evaluation Guide: Tools for Museums and other Informal Educational Settings*. Plymouth, UK: AltaMira Press, 2009. Print. 3.

³¹ Ibid

³² John H. Falk and Lynn D. Dierking, “Enhancing Visitor Interaction and Learning with Mobile Technologies.” *Digital Technologies and the Museum Experience: Handheld Guides and Other Media*. Ed. Loïc Tallon and Kevin Walker. Lanham: AltaMira Press, 2008. 27. Print.

Chapter 1: Digital Defined

The Oxford American Dictionary defines the term digital as

- 1) Signals or data expressed as a series of the digits 0 and 1
- 2) Relating to, using, or storing data or information in the form of digital signals
- 3) Relating to the use of computer technology.³³

In its simplest form, the information displayed on a computer screen or on an audio CD is an encoded series of zeroes and ones. However, various digital museum professionals such as Jasper Visser and Jim Richardson expound on that basic definition. In their online book, “Digital Engagement In Culture, Heritage and the Arts,” Visser and Richardson claim, “We like to say that digital is where the online world of information and the physical world of people meet.”³⁴ Yet with the term “digital” comes a myriad of implications comprised of opinion, judgment, fact, and personal experience. To introduce a digital interactive platform to an art museum exhibition can bring forth criticism related to its purpose and overall execution.

Nevertheless, a carefully planned implementation of digital devices has the ability to bring forth innovative participation and engagement. Here, the term “digital” takes new meaning in the collaboration between the medium and its overall planning and execution. Notable museum digital strategist Koven J. Smith writes, “To be really reductivist, we’ve treated digital work as a skillset, not as a methodology that could be adopted by anyone inside the

³³ “Digital.” *Oxford Dictionary (American English)*. Oxford: Oxford University Press, 2014. Web. 27 October 2014.

³⁴ Visser, Jasper and Jim Richardson. “Digital Engagement In Culture, Heritage and the Arts.” 2013. Gallery.mailchimp.com. Accessed 15 September 2014, 4.

organization.”³⁵ He goes on to argue that it is the approach and the careful planning of need, goals, objectives, usability, and production that makes something digital.

In essence, this thesis addresses “digital” as a medium for museum expression, and the term itself is used in its basic form of representing computer technology and signals. However, through identifying the process and execution through which museums apply digital interactives into their galleries, this work aims to strengthen the idea that the term “digital” be associated with such careful planning, diligence, and interaction.

Digital Use

It is crucial to examine the manner in which individuals utilize and interact with digital devices in everyday life in order to begin considering digital use within the museum spectrum. In their visitor studies research, Falk and Dierking stress the importance of personal meaning-making and context. They write, “One should also expect meaning making to be highly personal and strongly influenced by an individual’s past knowledge, interests, and beliefs,” as well as by one’s realities of motivations and expectations.³⁶ In today’s society, digital culture falls into the realm of personal context, motivations, and expectations.

³⁵ Koven J. Smith. “Defining “Digital.” *koven.j.smith dot com*. 20 June 2014. Web. Accessed 12 September 2014.

³⁶ John H. Falk and Lynn D. Dierking, “Enhancing Visitor Interaction and Learning with Mobile Technologies.” *Digital Technologies and the Museum Experience: Handheld Guides and Other Media*. Ed. Loïc Tallon and Kevin Walker. Lanham: AltaMira Press, 2008. 21. Print.

Yet not everyone is at the same level of digital aptitude. Just as visitors enter a museum with different expectations and motivations, digital use varies amongst individuals. Typically when conducting studies regarding digital use, analysts categorize participants based on age range or generation. Millennials use technology differently than Baby-Boomers, just as Generation Xers do from the Pre-War Generation. What can be noted across the board is that most Americans are embracing the rise of digital technology and accepting its use for societal advancement.

In a 2014 Pew Research Center study entitled “U.S. Views of Technology and the Future: Science in the Next 50 Years,” Aaron Smith reports that,

...most Americans anticipate that the technological developments of the coming half-century will have a net positive impact on society. Some 59% are optimistic that coming technological and scientific changes will make life in the future better, while 30% think these changes will lead to a future in which people are worse off than they are today.³⁷

This study notes that there was little variation between age brackets in respondents’ feedback on technological advancement. Rather, Americans of all ages understand that technology is here to stay and is rapidly moving forward in user adoption and societal advancement. This concept can also be applied to the museum field in that technology in the museum is advancing and can improve the museum context on multiple levels. Nevertheless, the 30% of Americans who remain in resistance to technological growth and advancement are not to be forgotten in the planning of art museum digital installations.³⁸ Over half of all Americans now have a smartphone but adoption levels amongst seniors sit at only 18%. This marks a

³⁷ Smith, Aaron. “U.S. Views of Technology and the Future: Science in the Next 50 Years.” *Pew Research Internet Project*. Pew Research Center’s Internet & American Life Project, 17 April 2014. Web. 14 May 2014.

³⁸ For more information regarding digital use amongst the senior population, see Appendix 1.

small rise of 11% since April 2011 (3 years between studies).³⁹ While a large number (77%) of older adults do have a cell phone of some kind, they tend to be basic devices.

Despite the senior community's reluctant adoption of mobile technologies, use of mobile technologies is rapidly increasing amongst the rest of the population, becoming the forerunner in contemporary digital trends. The percentage of Americans who owned smartphones has jumped from 31% in 2011 to 66% in 2014.⁴⁰ Tablet/E-Reader ownership has increased during the same time period from 18% to 64%, and iPod/MP3 players has jumped from 42% to 63%.⁴¹

According to the research and consulting agency We Are Social; in a global study informed by the US Census Bureau, InternetWorldStats, CNNIC, Tencent, Facebook, ITU, and the CIA and conducted in January 2014; nearly 2.5 billion individuals use the Internet out of the total world population of nearly 7.1 billion (See Fig. ¹).⁴² Comparatively in North America, 284 million individuals use the Internet out of a total population of 351 million.⁴³ Here, 197 million individuals are active social network users and there are 354 million active mobile subscriptions (See Fig. ²).⁴⁴

³⁹ Smith, Aaron. "Older Adults and Technology Use: Main Findings." *Pew Research Internet Project*, 3 April 2014. Web. 4 April 2014.

⁴⁰ La Placa Cohen. "Culture Track 2014." *La Placa Cohen*. 2014. 1-114. PDF File.

⁴¹ Ibid.

⁴² Kemp, Simon. "Social, Digital & Mobile Worldwide in 2014." *Wearesocial.net*. We Are Social. 7 January 2014. Web. 30 October 2014.

⁴³ Ibid.

⁴⁴ Ibid.

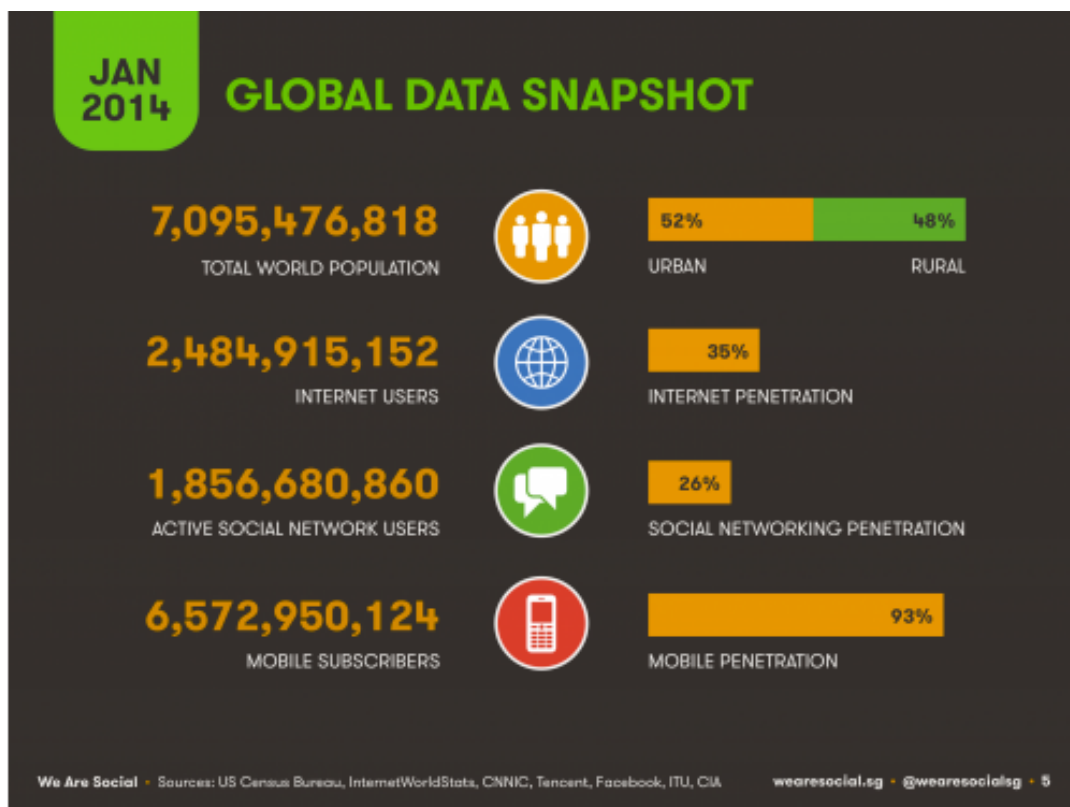
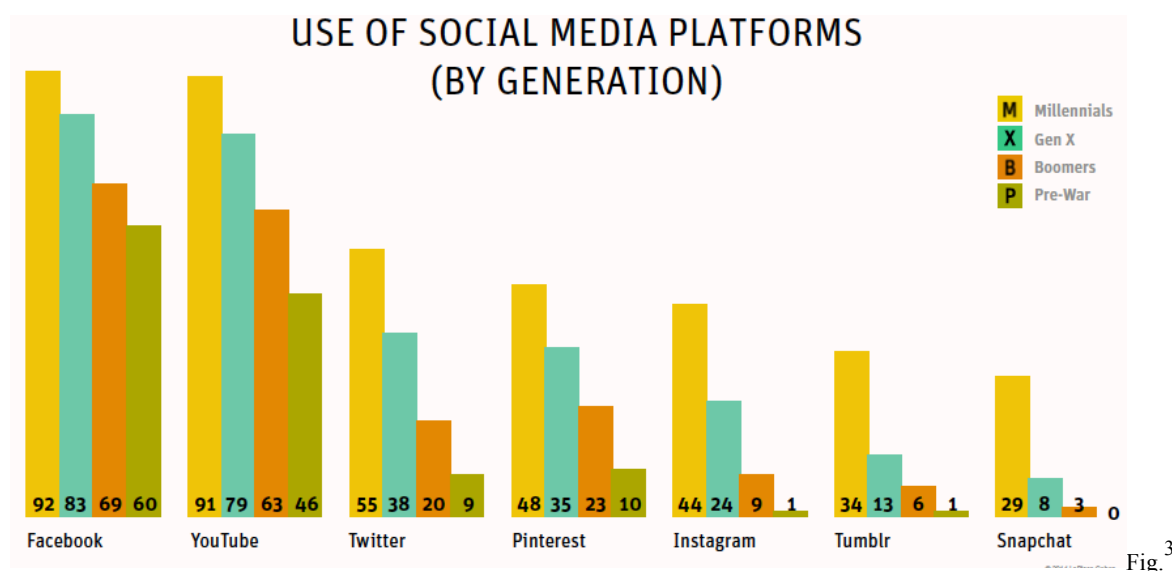


Fig. 1



Fig. 2

La Placa Cohen, a strategy, design, and advertising firm for the creative and cultural sector, found in a 2014 study that Facebook and YouTube are the most used social media platforms, closely followed by Twitter, Pinterest, and Instagram (See Fig.³).⁴⁵ This study also examines the multigenerational use of social media platforms, finding that Millennials (ages 18-29) lead in social media use, followed closely by Generation X'ers (ages 30-49). Baby Boomers (ages 50-69) and Pre-War (70+) individuals are also active with Facebook and YouTube, but drop off when it comes to Twitter, Pinterest, and Instagram.⁴⁶



Apps are also continually increasing in popularity. Chinese and American smartphone owners use apps the most, with games being the most used in more than half of the studied countries. Social networking app usage is highest in the U.S., with 85% of American smartphone owners as regular users.⁴⁷ The fact that gaming and social networking rank this

⁴⁵ La Placa Cohen. "Culture Track 2014." *La Placa Cohen*. 2014. 1-114. PDF, 59-60.

⁴⁶ Ibid.

⁴⁷ Ibid, 22.

highly in popularity and use means that they could be a valid resource when it comes to digital engagement within the museum. If individuals value playing games and engaging in social networking through their mobile devices in everyday life, then the same will hold true during the museum visit.⁴⁸

Museums should be paying close attention to the way individuals interact with their devices in everyday life so that they can provide similarly engaging experiences throughout the museum visit. As Carrie Rebora Barratt, Deputy Director for Collections and Administration at the Metropolitan Museum of Art, exclaims, “You want the way people live their lives to happen in the museum.”⁴⁹ Societal behavior is unlikely to change when in the museum setting; therefore, museums should offer experiences geared toward rising trends and cultural behavior. Should a museum cater to its audience by providing them with opportunities to engage in digital activities like gaming and social networking, it would be demonstrating the ability to reflect such societal behaviors and build off of them to appeal to personal meaning-making and effective visitor engagement.

Digital Aesthetic Trends

Equally important in catering to museum audiences through learning their digital use is studying the aesthetic trends of digital devices so as to apply them to museum technology. Econsultancy, an online community dedicated to dispensing professional digital strategy and

⁴⁸ See Appendix 3 for a chart on how we use apps.

⁴⁹ Lohr, Steve. “Museums Morph Digitally: The Met and Other Museums Adapt to the Digital Age.” *Nytimes.com*. The New York Times. 23 October 2014. Web. 27 October 2014.

achieving digital excellence, published an informative guide to digital design titled “18 Pivotal Web Design Trends for 2014.”⁵⁰ Here, author Chris Lake delineates a number of informative assertions regarding reigning characteristics of digital design. These include:

1. Clean design reigns over fancy. Therefore, sans serif fonts lead over serif, and flat design over multi-dimensional.
2. Mobile is in the lead. Smartphone and tablet usage is steadily increasing over desktop, which means that designers should be planning for small screens.
3. Scrolling is winning. Since mobile devices are leading in popularity and adoption, designers must consider how the user will swipe. Parallax scrolling, horizontal scrolling, and column-based scrolling are all easy to design, as well as user-friendly.
4. Keep text at a minimum. It is important to note that new and leading social media platforms such as Twitter, Instagram, and Snapshot, do not allow for large blocks of text. In keeping with this trend, as well as in prevention of losing user interest, designers should not overload devices with text.
5. Apply minimalist navigation. In an effort to maintain user interest, as well as in catering to the condensed design of mobile platforms, use of icons, rolldowns, and navigation that shrinks when the user scrolls are all methods to provide information without forcing the user to leave the page.
6. Video and moving backgrounds are increasing in popularity in that they prove to be dynamic and engaging.

⁵⁰ Lake, Chris. “18 Pivotal Web Design Trends for 2014.” *Econsultancy.com/blog*. Econsultancy. 13 January 2014. Web. 28 October 2014.

7. Appeal to users by providing rich content experiences. Combining text, images, interactive functions, and scrolling will prove to be engaging for those participating in the digital experience. (Be careful to do this without overloading and overwhelming the user)⁵¹

Notable digital media firm, Boxmodel Digital Media, has similarly compiled a list of leading technological design trends. They are:

1. Mobile
2. Interactive Video Backgrounds
3. Ironed Design Concepts (meaning flat design)
4. Single Page Websites and More Scrolling
5. Micro UX (meaning details that inform the user on his/her status through percentage bars, sliders, and direction-aware hover menus)
6. Less Text⁵²

These sources align in their assessment of leading digital design principles. Therefore, it is important for designers to pay close attention in adhering to information regarding smart digital design. However, these trends are for the year 2014, and it should be noted that design trends change at a rapid pace. Therefore, museums and designers must continuously pay close attention to digital design trends so as to create engaging digital experiences for the user that align with contemporary digital design outside of the museum.

⁵¹ Ibid.

⁵² Gittins, Simon. "Summer 2014 Digital Trends." *Boxmodeldigital.com/blog*. Boxmodel Digital Media. May 2014. Web. 10 November 2014.

Digital Backlash

The statistics presented thus far demonstrate the inarguable progression of digital adoption and use throughout everyday life. Yet it is crucial for this study to acknowledge the backlash in regards to such digital normalization and opposition to these rising trends. Sherry Turkle, Abby Rockefeller Mauzé Professor of the Social Studies of Science and Technology at MIT and Director of the MIT Initiative on Technology and Self, criticizes the way in which we as a society use technology in our everyday lives. In her TedTalk, “Connected, But Alone?” Turkle states that after interviewing hundreds of people of all ages over the past fifteen years regarding digital technologies of mobile communication,

What I've found is that our little devices, those little devices in our pockets, are so psychologically powerful that they don't only change what we do, they change who we are. Some of the things we do now with our devices are things that, only a few years ago, we would have found odd or disturbing, but they've quickly come to seem familiar, just how we do things.⁵³

Some of the types of odd digital behavior that have become normalized by society include texting during work meetings, going on Facebook during classes and presentations, not making eye contact, engaging with phones during family meals, and even texting at funerals.⁵⁴ Turkle argues that digital technology is altering the way individuals relate to one another as well as hindering their ability for self-reflection. Ultimately, she argues that “We're getting used to a new way of being alone together. People want to be with each other, but also elsewhere— connected to all the different places they want to be.”⁵⁵

⁵³ Turkle, Sherry. “Connected, But Alone?” TedTalk. Ted2012. February 2012. Web. 29 June 2014.

⁵⁴ Ibid.

⁵⁵ Ibid.

This argument that devices are hindering one's ability to focus on one particular relation or event certainly raises the question of the role of interactive devices in the museum. A question to consider for museums when implementing a device with a specific learning objective or function is whether the audience, who is accustomed to switching the channels of their personal devices at a minute's notice, will relate to the museum's digital objective.

In an article entitled, "Forget Facebook, Abandon Instagram, Move to a Village," Diane Cole discusses psychologist Susan Pinker's concept of "The Village Effect."⁵⁶ Pinker defines this as "the strong social ties that develop naturally in a village, where by necessity you cross paths with each other repeatedly every day."⁵⁷ The author notes that this type of social interaction is diminishing in today's society filled with online connections. Yet, according to Pinker, these dwindling connections are necessary to human advancement, and she recommends making conscious efforts to participating in face-to-face interactions, even when it might be easier to simply send an email. Ultimately, Pinker states,

We need to recognize that digital connections should enhance but never replace the real-life connections. I don't think we all should throw out digital devices and move back to the village. I'm not romanticizing village life but using it as a metaphor as what is disappearing: deep social ties and the in-person contact we all need to survive.⁵⁸

In practice, various individuals and organizations have begun to acknowledge the digital backlash movement and create ways to unplug during certain experiences. Some make a point of placing their devices into a designated box or corner upon entering their home at the end of the day so as to disengage. Others will participate in the phone stack game while out

⁵⁶ Cole, Diane. "Forget Facebook, Abandon Instagram, Move to a Village." *Npr.org*. NPR. 14 October 2014. Web. 15 October 2014.

⁵⁷ Ibid.

⁵⁸ Ibid.

to dinner. This means that everyone must pile their devices on the table and leave them there for the duration of the meal so as to fully engage in meaningful in-person interaction without disruption.⁵⁹

Various businesses are also joining the unplugged bandwagon. Coffee shops and cafes such as the August First Bakery & Café in Burlington Vermont, for example, have made a “Screen Free” policy, prohibiting patrons from engaging with their devices.⁶⁰ This particular case was in response to the large number of customers who enter the coffee shop, fire up a device, and stay for hours having only consumed that one initial purchase. While this behavior fills seats in the shop, it deters potential business when all of their tables are full and ultimately impacts sales. The owner of the shop also wanted it to be a place for community gathering, and not where patrons isolate themselves to stare at their screens.⁶¹

Simultaneously, hotels and destination resorts are beginning to offer unplugged packages with the intention of offering tech-free relaxation zones. Marriott and Renaissance hotels, for example, are testing “Braincation Zones” at nine of their hotels throughout the Caribbean and Mexico.⁶² After conducting a survey amongst their constituents, Marriott found that 85% of guests were annoyed by someone speaking loudly on their cell phone, 50% stated that they checked their emails and voicemails multiple times per day while on vacation, and 31%

⁵⁹ Tell, Caroline. “Step Away from the Phone!” *Nytimes.com*. The New York Times Fashion & Style. 20 September 2013. Web. 11 November 2014.

⁶⁰ Russell, Annie. “No Laptops, No Wi-Fi: How One Café Fired Up Sales.” *Npr.org*. NPR: All Tech Considered. 10 April 2014. Web. 10 November 2014.

⁶¹ Ibid.

⁶² Haq, Husna. “Take a Holiday From Technology.” *Bbc.com*. BBC Travel. 27 February 2013. Web. 10 November 2014.

reported that they were tempted to throw their mobile devices into the ocean.⁶³ In turn, the hotels offer digital detox areas designated for patrons to sip beverages, play board games, read, and/or participate in stress-free outdoor activities such as paddle boarding. Other resorts will actually collect devices at the start of the vacation and keep them in safe deposit boxes for the duration of the vacation. These programs have titles such as “Disconnect to Reconnect” and “Check-In to Check-Out.”⁶⁴

While digital use is skyrocketing throughout everyday life, digital resistance is also a significant trend to consider. Various individuals visit museums with restorative and relaxing motivations and expectations, in which case museum professionals should pay attention to popular travel trends such as tech-free experiences. It is through examining digital culture and the manner in which the museum audience engages with technology that will thoroughly inform museum leaders of the direction to take their digital strategy.

⁶³ Ibid.

⁶⁴ Brown, Genevieve Shaw. “Hottest Tech Trend at Hotels Is Getting Rid of It.” *Abcnews.go.com*. ABC News. 17 January 2013. Web. 10 November 2013.

Chapter 2: Digital Use in the Arts and Cultural Field

While an understanding of digital use in society is crucial in the consideration of technology in the art museum, it is also informative to consider the specific ways in which the cultural sector utilizes it. As La Placa Cohen writes in their 2014 study, “This is a transitional moment for using technology in cultural experiences...and the audience is leading the way in defining the new norms.”⁶⁵

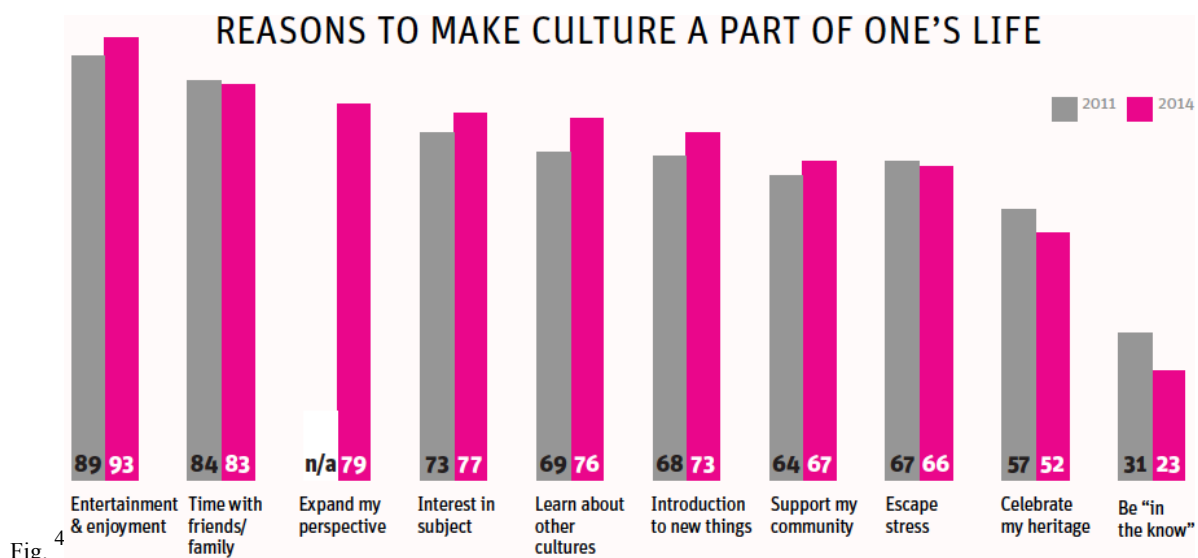
The Arts and Cultural Audience

La Placa Cohen found in their 2014 study that individuals are defining cultural activity broadly to include activities such as visiting a park, viewing a live broadcast performance at a movie theater, observing street art, partaking in food and drink experiences, experiencing a live or recorded lecture, and even watching non-commercial television.⁶⁶ These experiences are less about “being in the know” than they are about social interaction. Major rationale for making culture a part of one’s life is for entertainment and enjoyment, social interaction, learning, experiencing new things, escaping stress, and for supporting the community (See Fig. 4).⁶⁷

⁶⁵ La Placa Cohen. “Culture Track 2014.” *La Placa Cohen*. 2014. 1-114. PDF, 71-72.

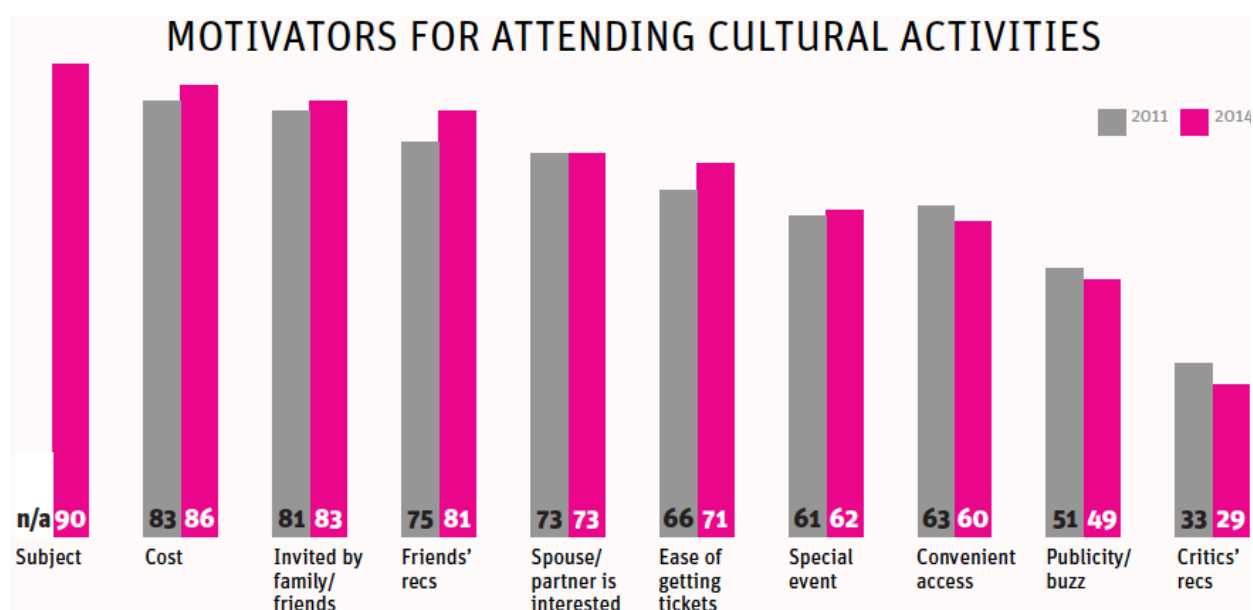
⁶⁶ Ibid, 30-38.

⁶⁷ Ibid, 41.



Similarly, motivation for participation revolves around content of the event and/or exhibition, value and social interaction. 90% of respondents state that they attend cultural activities because of their content (See Fig. 5). This can inform museums in terms of their digital content through devices. It is key to offer content, and social opportunities through digital museum experiences, and to do so without increasing the institution's baseline cost.

Fig. 5



In terms of barriers for attending cultural events, participants cite cost, subject matter, and inconvenience.⁶⁸ Additionally, almost one half of Millennials stated that they would not attend an event alone. These statistics can and should be applied to devices in museums in that they should not cost extra, they should be intuitive and convenient to use, and they should not limit social interaction.

In addition to studying the motivations and barriers of participation of cultural audiences in order to inform digital integration into museums, it is also imperative to examine the ways in which these cultural audiences utilize technology while on-site.

Mobile Use and Cultural Audiences

A study conducted by the arts marketing professional firm Group of Minds in 2012 noted that individuals are rapidly increasing their use of social media via mobile devices in conjunction with arts and cultural access.⁶⁹ According to this study, 54% percent of arts patrons access Facebook through their mobile devices, 45% access YouTube, and 23% reach Twitter and Google+ via mobile. (See Fig. 6)⁷⁰ Services that highlight location such as Foursquare scored low on this spectrum at 5% of all arts patrons, but use increased among

⁶⁸ La Placa Cohen. "Culture Track 2014." *La Placa Cohen*. 2014. 1-114. PDF, 47.

⁶⁹ This study was first conducted in 2009, where a sample size of 45,000 arts patrons were contacted via email throughout six U.S. cities. In 2012, Group of Minds sought an update for this study and asked the same questions (some altered for relevancy) to the same cities and sample size. For this reason, the study is valuable in understanding the role of mobile devices amongst art patrons and how that has changed in a matter of 3 years.

⁷⁰ Evans, Ron. "Arts Patrons: Mobile Preferences: Update to Ongoing Longitudinal Study." *Group Of Minds*. Group of Minds. 11 December 2012. Web. 13 April 2013. 3.

arts patrons ages 18-35. This proves that younger audiences tend to prefer location-based mobile applications than older users.⁷¹

“Audience 2.0: How Technology Influences Participation” (2010) opens with a statement from the Chairman of the National Endowment of the Arts urging arts organizations to open up to digital technology and social media and to embrace it in order to progress with contemporary society. The survey asked more than 18,000 adults about their participation in arts activities over the course of one year.⁷² While the report states that arts promotion through social media results in an increased interest in the arts, electronic media is not replacing arts participation through other means.⁷³ This statement strengthens the argument that visitors require a variety of means for engagement throughout the museum experience.

Percentages of arts patrons accessing social networks via mobile devices

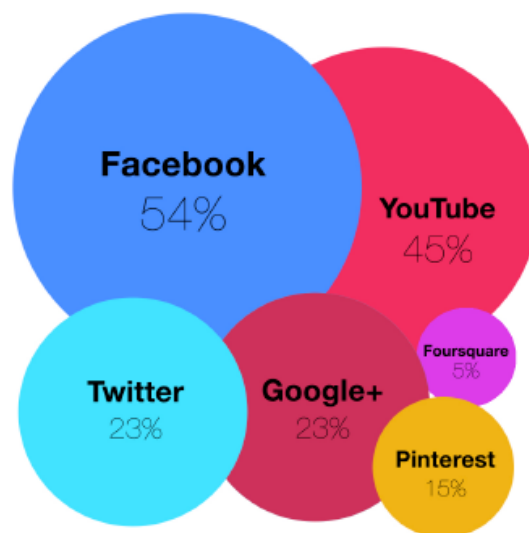


Fig. ⁶

⁷¹ Ibid.

⁷² National Endowment for the Arts. “Audience 2.0: How Technology Influences Arts Participation.” National Endowment for the Arts, Washington D.C. June 2010. Web. 11 November 2013, 7.

⁷³ Ibid, 95.

When Group of Minds asked how arts patrons use their phones before, during, or after arts performances, 50% responded that they take photos and 32% stated that they use Facebook (See Fig. 7). These 2012 results show a significant increase since 2009, when 24% reported taking photos with their phones and only 10% used Facebook during events.⁷⁴ The study also found that 21% of respondents buy tickets using their mobile phones and 25% “check-in” to their location via Facebook.⁷⁵ The search for restaurants also increased, with 15% of respondents using this option in 2009 and 46% doing so in 2012.⁷⁶ Group of Minds asserts that this is likely due to apps such as Yelp and Groupon, and that “organizations who can create partnerships for pre- and post-performance activities and who can communicate these offers to the patrons, will likely find a hugely appreciative audience.”⁷⁷ La Placa Cohen’s study conducted in 2014 aligns closely with that of Group Of Minds, but demonstrates a steady increase in digital use throughout arts experiences. This is exemplified in Figure 8, showing that the majority of those utilizing devices on-site are taking and sharing photos, followed by using the web to search for additional information.⁷⁸

⁷⁴ Evans, Ron. “Arts Patrons: Mobile Preferences: Update to Ongoing Longitudinal Study.” *Group Of Minds*. Group of Minds. 11 December 2012. Web. 13 April 2013. 3.

⁷⁵ Ibid.

⁷⁶ Ibid, 4.

⁷⁷ Ibid.

⁷⁸ La Placa Cohen. “Culture Track 2014.” *La Placa Cohen*. 2014. 1-114. PDF, 74.

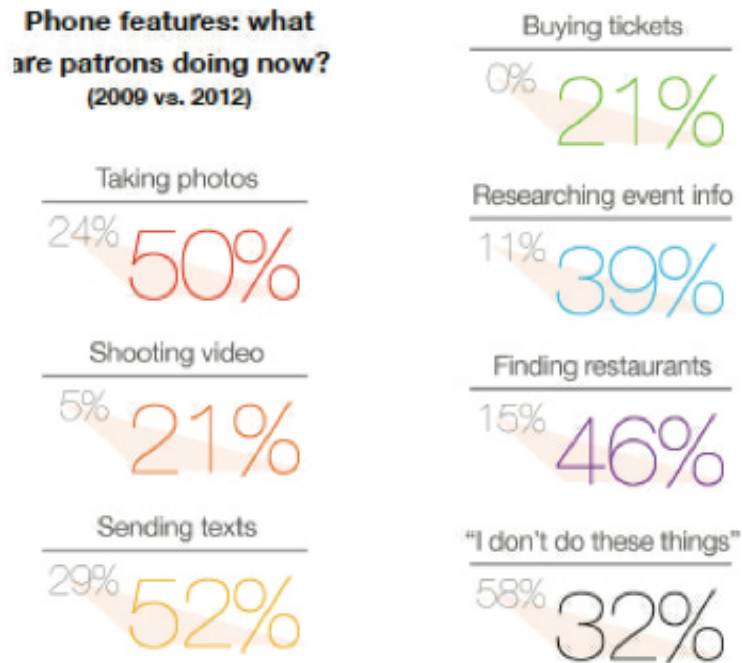


Fig. 7

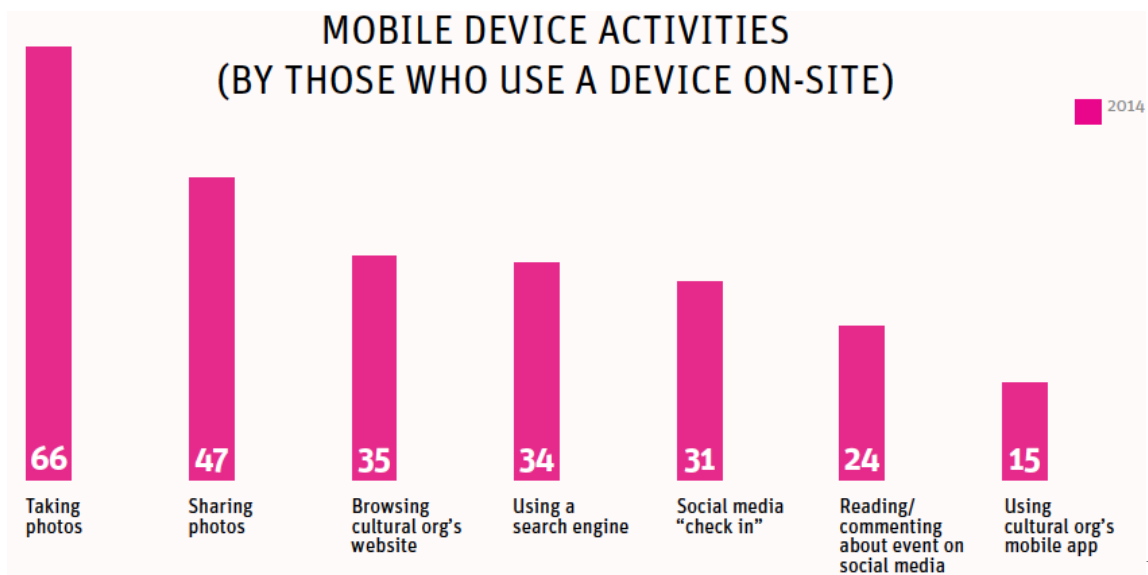


Fig. 8

Attitudes of the respondents varied in the Group of Minds study when asked about using mobile devices while at arts events and performances. Some had the opinion that mobile phones have no place at the event and should be turned off, whereas others showed interest in utilizing mobile phones in order to look up facts related to the content of the event or in

posting about their activity before or after the event.⁷⁹ The difference in opinion only proves further that audiences have varying preferences based on personal experience and belief during an arts-related activity, and directly correlates to Falk and Dierking's writings as discussed throughout the literature review. Therefore, it is best practice for museums to offer a variety of engaging experiences for a range of audience types, both digital and not. One suggestion from the Group of Minds report is to encourage a "phones-off" performance but to provide opportunities for phone-related activities such as photo-shoots in the lobby at the end of the event to encourage word-of-mouth and social media marketing.⁸⁰

When asked about a future "perfect" mobile app that would enhance the visitor experience during and around arts and cultural events, the largest response was for event logistics information such as directions (75%), proximity of events (78%), parking information (79%), and information on places to eat and drink before and after the event (59%).⁸¹ 47% of respondents wanted to receive information about the event while they were there, 39% wanted to send information about the event to friends, 25% asked that they be provided with content to post on social media, and 22% asked for the option to donate to the organization through the app.⁸² Additional open-ended responses requested links to the website or Facebook of performers, and for filtered information such as events that are taking place "today" as opposed to all events taking place in the future.⁸³

⁷⁹ Ibid.

⁸⁰ Ibid.

⁸¹ Evans, Ron. "Arts Patrons: Mobile Preferences: Update to Ongoing Longitudinal Study." *Group Of Minds*. Group of Minds. 11 December 2012. Web. 13 April 2013, 5.

⁸² Ibid.

⁸³ Ibid.

It is surveys such as this one conducted by Group of Minds that can directly inform an institution about what arts audiences want out of their mobile devices while attending their institution, and how to focus digital projects. While a general arts study such as this one should be looked to and referenced by such organizations, this thesis suggests additional audience research be conducted by specific museums prior to investing in digital information platforms. There is no better way of ensuring a device's ability to meet the needs and requests of their particular audience than to ask them directly. Here, Group of Minds suggests that arts organizations are clear and detailed when asking patrons their digital and mobile preferences on issues such as when digital media is appropriate and when it is not.⁸⁴

⁸⁴ Evans, Ron. "Arts Patrons: Mobile Preferences: Update to Ongoing Longitudinal Study." *Group Of Minds*. Group of Minds. 11 December 2012. Web. 13 April 2013, 6.

Chapter 3: Digital Considerations in the Art Museum

As technology becomes more and more integrated into everyday society, museums are beginning to understand that it does and will play a role in the art museum experience. Many are outsourcing digital interactive integration projects from professional firms, while others are creating their own departments and staff specifically dedicated to digital strategy and installation. This digital integration has come a long way since the original audio tours mentioned in the literature review. Museum digital platforms now include mobile apps, in-gallery touchscreens, handheld devices, games, and much more. Through a variety of experimentation and trial-and-error, arts organizations and their leaders have taken to examining the role that technology plays within their institutions, and are presenting their data and findings through publications and conferences. It will certainly benefit arts institutions to continually examine the digital innovations and strategic planning endeavors of their peers, as well as to participate in conferences and presentations to share and discuss relating information, outcomes, and best practices.

The consensus that museums need to strategically place devices with quality content and learning objectives into their offered experiences is emerging amongst conference discussions. While this idea of providing “quality” interactives within museums may seem obvious to any observer, it is not as widely practiced as one might expect. The term “quality” is often used without proper definition. It is easy for any digital strategist to state that their museum is moving towards incorporating “quality” devices into their galleries, yet they must define what that means and how the museum seeks to accomplish that. This can only be done

through establishing measurable and specific goals and objectives for each individual project, as well as through defining an interactive's intended audience.

Strategist Feedback in Practice

In a recap interview regarding the most recent *MuseumNext* conference, founder of the *MuseumNext*, Jim Richardson, stated that content is of significant importance. He went on to state,

Museums are building apps to have an app and not thinking about what they could help them to achieve. It was telling that at MuseumNext when a speaker asked a room full of museum people how many apps they had from museums on their phones, most people didn't have any.

If a room full of people who work in museums haven't got phones full of museum apps, why would the public. We just aren't creating compelling experiences for mobile.⁸⁵

Richardson is not the only critic of the manner in which museums have employed their digital devices. Stacey Mann, Director of Learning Strategies at notable Philadelphia-based digital firm Night Kitchen Interactive, states, "It's not just digital, it's about making engaging environments— digital does not make something definitively more good."⁸⁶ Mann acknowledges that digital components in the museum can be an attractive feature, but that without proper planning and applied learning strategies, they can fall flat. She goes on to say:

I think people have a perception that just by folding technology into the museum in the form of digital signage and podcasts and iPads on the wall that it is going to attract a different user and make them more palatable to a younger audience. But that audience that you're not serving, they don't know that you put in digital signage and that you added iPads in the gallery. Great, you've added something that makes you

⁸⁵ Richardson, Jim. "Jim Richardson from Museum Next Talks Digital Content (and the museums doing it right...)" Interview with founder of MuseumNext. *artsdigital101.tumblr.com*. Arts Digital. Web. 12 September 2014.

⁸⁶ Mann, Stacey. Personal Interview. 29 August 2014.

look and appear a little more hip and aware of modern day life, but you haven't made yourself more relevant.⁸⁷

Relevance is key in digital applications in museums. Simply adding digital devices into museum galleries will not immediately foster engagement and learning. Rather, goals for their purpose and a demonstrated connection with the physical museum (and what is featured in the vicinity of the device) must be established and incorporated into the interactive's program so that they become transparent to the user, and ultimately engaging.

For example, an app recently developed and introduced to the public in September 2014 for the Metropolitan Museum of Art (Met) demonstrates a targeted program for their specific audience. This app, titled "The Met," is geared towards the broad Met audience comprised of tourists, art enthusiasts, and those who are not familiar with the orientation of the museum. The app identifies the museum's current exhibitions, highlights and popular features of their collections, events taking place "today," upcoming events in the future, staff-picks and guided tours, and updates.⁸⁸ Through this app, one can find the museum hours, accessibility information, membership details, and purchase tickets. The tours offered via the app are engaging in that they thematically tie the collection together through concepts such as "mustaches" and "animals."⁸⁹ Here, images of particular pieces are accompanied by their titles and content information. These offerings allow individuals who are unfamiliar with the museum to visit with a targeted approach. However, while the app tells the uninitiated what it is they should see while they are there, it does not translate where and how to find these

⁸⁷ Ibid.

⁸⁸ The Metropolitan Museum of Art. *The Met*. Computer Software. *Apple App Store*. Vers. 1.0.2. Met Digital Media Department. 27 September 2014. Web. 29 October 2014. Mobile Application.

⁸⁹ Ibid.

works in person. The app lacks signage and a map; therefore, it falls short in reaching its goals to present orientating information to its users.

The Dallas Museum of Art (DMA) similarly offers a digital platform that engages the visitor to the museum's real space. Here, the museum has created the DMA Friends Free Membership Program.⁹⁰ Visitors may register for this feature at no cost through museum provided kiosks or one's own mobile device. Once doing so, the visitor can track his/her activity throughout the museum on his/her digital device. Tracking one's activity allows the visitor to earn credit and unlock badges and rewards. For example, the "Insomnia" badge rewards those who have attended five late-night activities in one year. Earning badges and credits friends with tickets to special exhibitions, lectures, behind-the-scenes tours, and/or discounts at the museum store.⁹¹ This digital offering not only encourages visitors to explore multiple galleries within the museum, but also to repeat visitation.

Lindsey Green, Alyson Webb, and Martha Henson, authors of "Mobile Culture: Innovating the Audience Experience, not the Technology," express a similar sentiment as Mann and Richardson when it comes to digital engagement in museums. They write,

Few museums believe that mobile is a silver bullet that will enable visitors to engage by simply delivering more stuff. There is acknowledgement that mobile is a very powerful tool, but it is just a tool and one that we need to master. It should be used strategically – in the right way, with the right audience, and at the right time.⁹²

⁹⁰ "DMA Friends." *Dma.org*. Dallas Museum of Art. 2013. Web. 11 December 2014.

⁹¹ Ibid.

⁹² Green, Lindsey, Alyson Webb and Martha Henson. "Mobile Culture: Innovating the Audience Experience, not the Technology." *Theguardian.com*. Guardian Professional: Culture Professionals Network. 7 June 2013. Web. 25 October.

In search of learning about digitally mediated museum experiences, the Victoria and Albert Museum (V&A) found that it was through observing visitors using digital interactives in museum environments that would most accurately give them answers.⁹³ This study, published in September 2014, discovered a number of findings with the intention of publishing them in order to share with fellow participating museums and to provide a foundation for future related research to build upon.⁹⁴

The V&A study resulted in numerous findings related to the in-person museum digital experience. The first result is that “the physical space (that presents the digital interactive in a museum) affects presence and influences atmosphere. In other words, the feel of an experience is crucial.”⁹⁵ Presenting the interactive as a shared experience, for example though a (digital) touch table, proved to be successful in visitor satisfaction and engagement.⁹⁶ This hearkens to Falk and Dierking’s emphasis on the museum visit being a social experience. Interactives that operated in the same manner as familiar devices such as iPads and smartphones act proved to be successful in engaging visitors (particularly children), suggesting that a device should not waver from the familiar.

They (the visitors) have technology pre-expectations which may cause them tension if not met by museum experiences. This is an important point. For any digital interactive, the initial “commitment cost” to the end user of figuring out how something works is a crucial design choice. Typically for self-directed audiences [as opposed to those who have chosen to buy into an experience for a set duration like a show], this needs to be low

⁹³ Lewis, Andrew. “What Can We Learn From Watching Groups of Visitors Using Digital Museum Exhibits?” *Victoria and Albert Museum*, 25 September 2014. Web. 26 September 2014.

⁹⁴ This study employed visitor observation (in-person and via video recording) as well as open-ended group interviews at the Natural History Museum and the Victoria and Albert Museum in search of natural behavior using digital devices, as well as group interaction and physical responses with user interaction.

⁹⁵ Lewis, Andrew. “What Can We Learn From Watching Groups of Visitors Using Digital Museum Exhibits?” *Victoria and Albert Museum*, 25 September 2014. Web. 26 September 2014.

⁹⁶ Ibid.

or people will give up and wander off unless there is some other strong incentive to continue.⁹⁷

Museum professionals Ben Gammon and Alexandra Burch also find that providing devices with familiar interfaces allow for easy engagement. In their essay entitled “Designing Mobile Digital Experiences,” they write, “Designing technology to resemble the way existing technology functions can be useful in that the visitor will approach it already knowing how to use but this can also become confusing if some functions operate similarly while others do differently.”⁹⁸ Therefore, a need for consistency in digital design is also key in user-friendly museum devices.

According to the V&A study, visitors frequently looked to see how others in the space interacted with the devices to learn how they should behave with them.⁹⁹ Therefore, it can be equally if not more effective and less intimidating to demonstrate to visitors by doing rather than telling them how to interact with the provided digital materials. While interaction varied with age, motivation played a part in driving visitors to interact with certain devices and participate in certain activities. This finding once again corresponds with Falk and Dierking’s writings on visitor motivation and inclinations. Next the study found that ergonomics played a significant role in the visitors’ ability to focus when interacting with the devices, therefore the actual design of the interactive plays a significant role in its impact on visitor experience and engagement.¹⁰⁰ Finally, methodologists for the project stressed the importance of

⁹⁷ Ibid.

⁹⁸ Gammon, Ben and Alexandra Burch. “Designing Mobile Digital Experiences.” *Digital Technologies and the Museum Experience: Handheld Guides and Other Media*. Ed. Loïc Tallon and Kevin Walker. Lanham: AltaMira Press, 2008. Print, 44.

⁹⁹ Lewis, Andrew. “What Can We Learn From Watching Groups of Visitors Using Digital Museum Exhibits?” *Victoria and Albert Museum*, 25 September 2014. Web. 26 September 2014.

¹⁰⁰ Ibid.

questioning visitors in a neutral manner so as not to give the respondent the idea that there is a “right” or a “wrong” response. They concluded that open-ended group interviews allowed for respondents to accurately describe their visit and their intentions for their visit in the first place.¹⁰¹

Studies such as that conducted by the V&A inform the museum field of the role that digital interactives can play in the future of art museums. “The NMC Horizon Report: 2013 Museum Edition” examines six technologies emerging along the near-term, mid-term, and far-term installation throughout museums. The report’s methodology includes the convening of experts in museums, education, technology, and other fields on an advisory board (44 individuals in total) from August through September 2013.¹⁰² It provides examples and readings surrounding each model, such as mobile devices, location-based sources, and crowdsourcing devices, as well as ways to access additional information. Of those major trends, some pertinent findings are:

- Collection-related rich media are becoming increasingly valuable assets in digital interpretation
- Expectations for civic and social engagement are profoundly changing museums’ scope, reach, and relationships
- Increasingly, visitors and staff expect a seamless experience across devices
- The need for data literacy is increasing in all museum-related fields¹⁰³

¹⁰¹ Ibid.

¹⁰² Johnson, L., S. Adams Becker, and A. Freeman. “The NMC Horizon Report: 2013 Museum Edition.” Austin, TX: The New Media Consortium, 2013. Web. Accessed 14 December 2013.
<http://www.nmc.org/pdf/2013-horizon-report-museum-EN.pdf>

¹⁰³ Ibid, 7-8.

In Kristin Thomson et al's "Arts Organizations and Digital Technologies," The Pew Research Center's Internet and American Life Project sampled 1,244 arts organizations that have received funding from the National Endowment for the Arts (NEA) between the years 2006-2011 through an online survey. Thomson writes, "many organizations are using the internet and social media to expand the number of online performances and exhibits, grow their audience, sell tickets, and raise funds online, while allowing patrons to share content, leave comments, and even post their own content on organizations' sites."¹⁰⁴ This article does highlight concerns regarding engaging a full audience while many older museum constituents are still not yet digitally proficient. As many of the statistics regarding digital use demonstrate in the first chapter of this thesis, the digital divide is progressively closing to the point that it will likely not negatively affect digital use in museums. However, it is important to remain cognizant of it in keeping with the idea of providing the museum audience with a variety of options for engagement.

The Cleveland Museum of Art's (CMA) *Gallery One* is an example of a museum providing digital interaction and interpretation during the visit as an option for those who wish to participate while not interfering with the museum experience of those who wish to disconnect. *Gallery One* is a distinct gallery full of digital devices and interactives. In this gallery, visitors encounter various works of art by artists such as Pablo Picasso, Auguste Rodin, and Chuck Close, as well as technology-based activities related to them.¹⁰⁵ *Gallery*

¹⁰⁴ Thomson, Kristin, and Kristen Purcell and Lee Rainie. "Arts Organizations and Digital Technologies." Pew Research Center, Washington, D.C. (January 4, 2013). <http://pewinternet.org/Reports/2013/Arts-and-technology.aspx>, accessed 11 November 2013. 2.

¹⁰⁵ "About Gallery One." *Clevelandart.org/about*. Cleveland Museum of Art. 2013. Web. 9 November 2014.

One houses the largest multi-touch microtile screen in the United States.¹⁰⁶ This 40-foot screen features images of over 4,100 objects from the museum's permanent collection so that the visitor can not only explore its breadth, but also design and download a personalized tour on a device to take throughout the museum if so desired.

Visitors are able to explore the works displayed in unique and innovative ways through digital games and facts. For example, the "Sculpture Lens" shows a visitor an image of a sculpture in a unique pose on a screen. The participant is then asked to strike that same pose, and a sensor measures how accurate the visitor is in his/her assessment. The closer the match, the better the percentage grade assigned the participant. Visitors can play as many times as they like, as well as email their image capture and view other visitors' attempts.¹⁰⁷

Those who wish to participate in the museum's interactives may enter the room and do so, yet those who care for an unplugged museum visit may choose to pass by the room and continue their museum visit sans digital devices. The CMA carefully planned this project and specifically aimed it to reach an audience of families, youth, school groups, and occasional visitors.¹⁰⁸ Therefore, these groups looking for active engagement during their visit or an orientation to the collection could access *Gallery One*, whereas those visitors who are already familiar with the museum and seeking a passive experience can easily skip past the room on the first floor that features *Gallery One* to access the museum experience they desire.

¹⁰⁶ Ibid.

¹⁰⁷ Alexander, Jane. "Transforming the Art Museum Experience: Gallery One." *Mw2013.museumsandtheweb.com*. Museums and the Web 2013. 17-20 April 2013. Web. 9 November 2014. This source outlines the process through which the CMA followed in the planning of *Gallery One*, as well as the individuals involved in the project. It outlines the museum's identification of its audience, previously conducted studies to follow as a model, goals and objectives, and evaluation projects.

¹⁰⁸ Ibid.

Art museums may look to *Gallery One* as inspiration when incorporating digital strategy into their galleries. However, some professionals such as Koven J. Smith are skeptical that projects such as *Gallery One* are realistically the next step. Smith writes, “Gallery One is the project for which I’ve been waiting– the project that really demonstrates what the museum experience could be when un-shackled from the constraints of centuries of museum tradition.”¹⁰⁹ Despite his excitement for the project, he sees it as a large step for museums to take when entering the realm of digital interaction. He writes, “Its scope and scale are so huge that it almost feels avant-garde; it jumped so far ahead of the curve that most museums won’t be able to contemplate doing anything remotely like it for years.”¹¹⁰ Art museums should not necessarily look to replicate the *Gallery One* model when implementing digital interactives, but they should model its ability to identify its target audience, set goals and objectives for the project, and follow through with detailed evaluation and planning in order to ensure good practice.

Ariel Schwartz, Associate Director of Interactive Technology at the Philadelphia Museum of Art (PMA) outlined the key goals for their museum when incorporating digital technology into its galleries during their *Treasures from Korea* exhibition in 2014. The PMA hired outside digital firm, Bluecadet, to create kiosk interactives to accompany the exhibition. Schwartz outlined that these interactives needed to be social, make things personal, have a takeaway that made it memorable, provide access to additional in-depth information, and most importantly, ensure that visitors are looking up at the artwork and not down throughout

¹⁰⁹ Smith, Koven J. “Sorting Out How I Feel About Gallery One.” *Koven.j.smith dot com*. Koven J. Smith Dot Com. 30 April 2014. Web. 26 September 2014.

¹¹⁰ Ibid.

their digital interaction.¹¹¹ One of these interactives allowed for visitors to enter their names and see what they look like in the Korean alphabet, trace it, and finally print it out to take home with them. Schwartz notes that this interactive was so popular that the museum had to install a second station to accommodate its audience. He states that visitors had a personal stake in the interaction, and were thereby more attached to it. Lastly, the print-out enabled visitors to take home a token of memory from the exhibition to serve as a reminder of the experience and perhaps bring them back as return visitors.¹¹²

Philadelphia-based interactive design firm, Night Kitchen Interactive recommends a number of guidelines when implementing digital design throughout museums. They advocate for using technology to embrace the environment's real social space, to remain integrated with a variety of community voices and conversation, to be social through creating personal connections and meaningful engagement, and to encourage social and collaborative interaction.¹¹³ Lastly, the staff and leadership behind Night Kitchen Interactive stress the importance of not buying into digital hype. Adding a digital interactive to an exhibition is not always the right answer nor is it always the most efficient way to impact and engage an audience.

Those behind notable Philadelphia-based digital firm, Bluecadet advocate for similar digital guidelines in their publication, "Beyond the Screen."¹¹⁴ Here, Brad Baer, Creative Director of Environments, discusses integrating "what they [the user/visitor] want, when they want it,

¹¹¹ DiGiacomo, Kerry and Ariel Schwartz. Personal Interview. 15 September 2014.

¹¹² Ibid.

¹¹³ Mann, Stacy, Jennifer Moses, and Matthew Fisher. "Catching Our Breath: Assessing Digital Technologies for Meaningful Visitor Engagement." *Exhibitionist* (Fall 2013) : 17.

¹¹⁴ Baer, Brad. "Beyond the Screen: Part Two." *Bluecadet.com*. Bluecadet. 21 April 2014. Web. 9 July 2014.

and how they want it” into digital design.¹¹⁵ Here, “what they want” addresses the need to provide offerings that resonate with the user’s preferences, tendencies, skills, and interests; “when they want it” refers to allowing the user to experience something at their own pace and on their own time; and “how they want it” addresses the format through which the user prefers receiving his/her information.¹¹⁶ The common thread between this work and the others highlighted in this chapter is the need to address and cater to the various types of visitors and motivations amongst the art museum audience when designing digital integrated design. In addressing this matter, Senior Producer at Bluecadet, Victoria Jones, states:

The difference between art museum gallery versus that other kinds of museums is that you have to be cognizant the whole time about how the design of your work and the physical presence of your work is going to influence the visitor’s perception of the artwork that they are looking at and so some of the things that we try to do is keep the design clean, modern, and minimal, and have the interface fall to the background so that visitors can focus on the artwork. Try to make our interface as unnoticeable as possible to keep the artwork front and center.¹¹⁷

Digital Embedding

While these museum professionals and digital strategists agree that digital integration can and will prove to be a useful strategy for visitor engagement, their opinions vary regarding the extent to which technology should be incorporated within the museum environment. During the 2014 MuseumNext conference, Koven J. Smith’s opening keynote looked to a future of embedding digital platforms throughout the museum so that it naturally lends its presence to the visitor the way that it would in everyday life rather than appearing as an

¹¹⁵ Ibid.

¹¹⁶ Ibid.

¹¹⁷ Jones, Victoria. Personal Interview. 10 September 2014.

afterthought in its installation.¹¹⁸ Tijana Tasich, Digital Production Lead at the Tate, on the other hand, states that while large national museums might be ready for digital embedding, “Digital is *still* at a stage where it needs nurturing at almost every smaller museum I’ve worked with. This stuff doesn’t come naturally, and as a consequence of this it needs its own corner – and a way of articulating how it is going to fit *with* the institutional strategy.”¹¹⁹ Museum professional and noted blogger, Joe A.D. Wilson writes when addressing technology in museums,

...there is nothing new or exciting about touchscreens anymore. They are progressing to a point of omnipresence, with smartphones, tablets, TV’s and even ATM machines all utilizing the technology. A museum visit should be about experiencing extraordinary things, and touchscreens have become about as ordinary as a piece of technology can be.¹²⁰

This thesis does not agree that the platform for the distribution of information and engagement within the museum must appear new and flashy in order to generate attention. Rather, it is through providing engagement to the diverse audiences that attend the museum, targeting digital endeavors toward a specific audience, and establishing and fulfilling specific and attainable goals that will achieve impact amongst museum audiences. Statistics regarding digital use in society will continue to rise as time moves forward, yet that does not prove that every type of visitor will choose to engage in digital interaction whilst exploring the museum.

¹¹⁸ Ellis, Mike. “Thoughts on Museum Next 2014.” *Thirty8 Digital*. 24 June 2014. Web. 26 September 2014.

¹¹⁹ Ibid.

¹²⁰ Wilson, Joe A. D. “In Touch with Touchscreens.” *I Think Of Icarus*. 31 July 2014. Web. 25 September 2014.

Digital Unplugging in the Museum

It is the audience that chooses to disengage with technology during their visit that disproves the inevitability of digital embedding throughout the museum. The American Alliance of Museums' (AAM) "Trendswatch 2013: Back to the Future" written by Elizabeth E. Merritt and Philip M. Katz, Ph.D., recognizes the existing backlash to the digital movement in favor of contemplation and personal contact in museum spaces. According to a study cited in this article, 60% of respondents between 18 and 29-year-olds say they "feel guilty" about the amount of time they spend on cell phones, social media sites and the Internet.¹²¹ Ultimately, AAM recommends that museums employ a mixture of connected and unplugged experiences in order to cater to different audiences.

Similarly, during the Future of Museums Conference in Summer 2014, keynote speaker and Founding Director of the Center for the Future of Museums, Elizabeth Merritt, predicted a museum completely devoid of plugged-in experiences. She called this the "Disconnected Museum" and described it as completely offline and low-tech.¹²² This prediction aligns with the digital backlash and unplugging trends noted in this report's first chapter and hearkens back to the writings of Turkle and to Falk's description of the "Recharger." The disconnecting trend that permeates everyday life remains relevant within art museum walls as well. Therefore, these resisters to technology are an audience to consider as an art museum approaches digital interpretation and interaction.

¹²¹ Merritt, Elizabeth E. and Philip M. Katz, Ph.D. "Trendswatch 2013: Back to the Future." American Alliance of Museums, Washington D.C. (2013). http://aam-us.org/docs/center_for-the-future-of-museums/trendswatch2013.pdf. Accessed 8 October 2013, 31.

¹²² Elizabeth Merritt. "Temporal Tourism: A Brief Visit to Three Museums of 2030." Future of Museums Conference. Online Conference. 24 July 2014. Keynote Address.

As technology becomes deeply integrated into everyday life, individuals will encounter the need to disengage for tech-free moments throughout their day, week, or even month. It is crucial for museums to take heed and assess whether these individuals in search of a low-tech re-charge comprise a section of their audiences. If so, then digital integration throughout such museums must not infringe on the experiences of that audience. Museums must be sure to identify and recognize who their audiences are throughout digital integration, and be sure to provide engaging experiences for all of their core audiences. One single interactive cannot and will not engage every audience.

Chapter 4: In Practice

The process for digital integration will and should vary depending on the museum institution and project. Never will one specific framework intended for one digital platform also apply to another. Nevertheless, there are certain guidelines regarding how the creative process should look, what digital interactives should do, what they should look like, and who should be involved in the digital integration process, that can and should be applied to multiple processes.

What should the creative process entail?

The first step in the conceptualization process of a digital interactive component in the museum must be the consideration of the museum audience. Museums must identify and consider the various types of visitors and cluster groups amongst their audience. This is where the cluster research, noted in the literature review, of Falk, Dierking, Krantz, Korn, Pitman and Hirzy should be referenced. A museum must know and categorize their audience so as to identify who should be targeted in each digital project. As Stacey Mann says, “It all goes back to who are you trying to serve, what’s the best way to reach them, what are you trying to accomplish, what is your learning objective.”¹²³

Specific goals and objectives must be formed when conceptualizing any device along with the targeted audience for the project. Such goals should be measurable and achievable. The interactive should consistently align with the institution’s mission, strategic plan and goals. If a design firm is hired to create said interactive, it is imperative that they become familiar

¹²³ Mann, Stacey. Personal Interview. 29 August 2014.

with the museum's mission and strategic goals, as well as with the department initiating the device and its collaborating departments. For example, a visitor services department is likely to become involved with the daily functions related to an implemented device and those visitors who are interacting with it. They should therefore, be consulted by those conceptualizing the digital media prior to its placement within the museum.

An interactive device must go through various evaluation and testing (on real visitors). This includes wireframe/tap testing, front-end, formative, and/or summative evaluation. Applying a variety of these evaluations to the goals and objectives of the project, as well as observing the manner in which museum visitors interact with devices, will inform a project throughout its conceptualization and practice, as well as future projects. As Kerry DiGiacomo, Audience Research Manager at the Philadelphia Museum of Art, says, “we can always learn from a past one (project) in how we want to approach the next one and that’s really the value of any evaluation project: how are you going to use it to move forward instead of thinking, ok that closes the door on that.”¹²⁴ Most importantly in terms of evaluation, the evaluator should be included in the conversation from the start of a digital project and throughout the entire conceptualization process and serve as a “check and balance” advisor to the digital initiative.

What should digital interactives do?

An interactive should allow for personal meaning-making and connection for the visitor during his/her museum experience. Simply stating facts will not actively engage nor create a

¹²⁴ DiGiacomo, Kerry and Ariel Schwartz. Personal Interview. 15 September 2014.

memorable visit. Rather, those facts must be contextualized. Another way to consider the meaning-making of an interactive is to ask whether or not it adds relevance to the experience.

A digital interactive must give the visitor control of his/her experience. A customizable approach lends the museum audience a sense of authority and a personal stake in their visit. For example, some visitors seek in-depth information regarding a work they are viewing while others prefer an overview. Those who wish to dig deeper in their investigation can make that choice whereas those who do not will move on.

Devices must allow for social interaction. Whether in-person or through social media, social interaction reigns as a crucial element to a museum visit. A device that isolates visitors will not satisfy that common motivation for museum visitation. Therefore, options for social connection are crucial in the design of any interactive.

Devices should encourage the visitor to look up and not down. A museum visit is a physical experience and digital devices and interactives should be created to accompany what the institution features, not to replace it. Museums must remember to consider what makes the device, its implementation, and its experience unique to its institution. Any organization can create a digital device, but once again, it must be relevant to its related institution, and in the case of art museums, this means that the user should interact with the objects and ideas presented throughout the museum in conjunction with the device.

Mobile devices should reflect the findings of digital use studies. If accessing social media, purchasing tickets, checking-in, taking photos, and searching for nearby restaurants is in demand, make sure to consider incorporating these features with your offered application.

The interactive should make creative connections. A device has the ability to draw connections between multiple works. Mobile platforms, especially, have the power to connect works of art that may not be displayed in the same physical space together. The Metropolitan Museum of Art's mustache tour on its app, for example, connects various works throughout multiple galleries with one united theme.¹²⁵

Lastly, the interactive should exist as an optional companion to a museum visit, not one that is mandatory. An individual's visit must not be restricted if he/she declines a digital interactive experience (or vice versa). Visitors flock to museums for multiple reasons with a variety of motivations and expectations. It is ok if a visitor chooses to unplug, and to opt out of the digital experience, yet his/her visit should not be any less valuable or informative without utilizing a device.

What should digital interactives offer?

As technological innovation continues throughout modern day society, digital interactives will continue to offer a myriad of functions and options. Yet, a single device must stay simple. Victoria Jones from Bluecadet recommends teaching 1-2 lessons per interactive, whereas Ariel Schwartz from the Philadelphia Museum of Art opts to offer 4-5 questions, no

¹²⁵ The Metropolitan Museum of Art. *The Met*. Computer Software. *Apple App Store*. Vers. 1.0.2. Met Digital Media Department. 27 September 2014. Web. 29 October 2014. Mobile Application.

more. This is to avoid “decision paralysis,” a circumstance that stems from overwhelming the visitor with choices. Jones states,

It’s really important to keep the goal focused to one or two things- those are the most successful interactives. It’s really supposed to teach 1-2 main messages- and maybe there’s a little more extra layers for the person who is looking for that but if you can’t say this is this and that is that, in one or two sentences, you are probably trying to do too much.¹²⁶

A digital device should be intuitive in its usability and appearance. Despite an exhibition’s content and size, the visitor’s dwell time averages less than twenty minutes within the space.¹²⁷ Therefore, he/she should not be required to spend a large fraction of that time adapting to an unfamiliar device. Rather, a device’s design should be intuitive so that the visitor can spend his/her time using it and fulfilling its purpose. Its interface should behave similarly to existing devices that visitors may already own or know how to use. As Mann states, “It needs to be easy to find, easy to navigate, intuitive, and frankly, less is still more, even in the digital world. People aren’t going to read it if its long. It needs to be organized well, it needs to tell a story, it has to create narrative, and all of that stuff is still important.”¹²⁸

The interactive should be engaging. To make something digital for the sake of being digital is not reason enough for the creation of an interactive. Creating an engaging digital environment that meets the goals and target audience established in planning will produce a successful interactive.

¹²⁶ Jones, Victoria. Personal Interview. 10 September 2014.

¹²⁷ Gammon, Ben and Alexandra Burch. “Designing Mobile Digital Experiences.” *Digital Technologies and the Museum Experience: Handheld Guides and Other Media*. Ed. Loïc Tallon and Kevin Walker. Lanham: AltaMira Press, 2008. Print, 45.

¹²⁸ Mann, Stacey. Personal Interview. 29 August 2014.

The museum must incorporate trending digital design that is informed by commercial design. Clean interfaces, low-text, minimalist navigation, video/moving backgrounds, rich content, saturated colors, large imagery, and fixed position content are all digital trends of 2014 that should be applied to contemporary digital museum design. However, designers should continue to examine and apply rising trends as they change throughout their tenures creating museum interactives.

Roles and responsibilities

Incorporating digital interactives into a museum gallery is a multi-departmental endeavor. Museum staff should be in conversation with one another throughout the conceptualization, realization, and evaluation processes. This is a chance for collaboration between diverse departments. Educators, interpretive planners, curators, designers, evaluators, visitor services, and many more departments have a stake in the museum's digital implementation.

As Ariel Schwartz, Digital Strategist at the Philadelphia Museum of Art divulges:

It (digital strategy in the museum) enables us to finally have conversations across the museum, across the departments, across disciplines and come up with holistic stories to present which is really cool– it starts to utilize the under-tapped resources of the institution– there are so many fabulous experts here that know so much with very few opportunities to actually share– so it gives them a platform to share.¹²⁹

Additionally, an audience research professional/evaluator must work in cooperation with the museum/digital firm throughout the process of implementing a digital interactive in the museum. This professional is key to overseeing whether the device's goals and objectives are clear, measurable, and geared towards a properly identified audience throughout the conceptualization and implementation process. This person(s), combined with the project

¹²⁹ DiGiacomo, Kerry and Ariel Schwartz. Personal Interview. 15 September 2014.

manager, will check in regularly with those on the manufacturing team so as to ensure that the project stays on target to those established standards, and will provide thorough summative evaluation for the purpose of informing future digital ventures.

Chapter 5: Thinking Beyond the Standard

This thesis has most notably stressed the importance of considering the multiple motivations and types of visitors in the art museum when designing and implementing digital strategy. It is crucial for the museum to keep in mind that audience members differ greatly in their wants and needs when visiting the museum, and that there can be no single strategy to appease them all. Nevertheless, closely examining and applying digital trends outside of the museum from everyday life to a specified and targeted audience will result in strategic and engaging digital integration throughout the museum. Additionally, it can only be through the calculated development of measurable and simple goals and objectives that a museum can successfully embark on its digital integration plan, as well as evaluate it. If the device's goals, objectives, and target audience are clearly defined, then the framework for the evaluation of its visitor impact will be sequentially demarcated. The museum must remain mission-driven throughout this process, and not incorporate technology simply for the sake of providing its audience with an attracting feature. Ultimately, if these considerations are carefully applied, the museum will deliver its established goals and objectives through the platform of the device.

This is not to say that the device cannot or should not be innovative, captivating, or revolutionary. In practice, museums have approached digital incorporation with caution by following existing technological trends. However, as art institutions develop digital strategy teams and departments, so too can they begin to develop devices with breakthrough and pioneering features.

This study would benefit from further research regarding the monetary considerations of digital integration into the art museum. Recommendations that would assist museums in staying current with their contemporary digital offerings amidst deficits, low budgets, and an ever-changing digital landscape would make the concept of digital installation attainable and achievable. Further research and recommendations in utilizing the digital format to unite and create partnerships between museums would also benefit this study. Art history courses in universities instruct students on concepts, artists, and movements through works spread throughout the world. If a digital device can conceptually unite works within a museum, then why stop there? With the help of technology, museums have the potential to utilize interactives to create dialogue and collaboration between multiple institutions, their artworks, and their visitors.

It will behoove the museum to take advantage of digital technology formats to evaluate their audiences and devices. Through monitoring how a museum app or interactive is used, the number of times something is clicked on or touched, and/or the most popular offered digital tour, the museum can learn more about their audiences and their digital preferences. The Met app makes a point of asking its user (through a pop-up) whether or not it has been helpful to them, and how it could improve upon the visitor's experience.¹³⁰ Simply posing a short question or two will inform the user that the museum is invested in engaging and fostering its audience for future engagement.

¹³⁰ The Metropolitan Museum of Art. *The Met*. Computer Software. *Apple App Store*. Vers. 1.0.2. Met Digital Media Department. 27 September 2014. Web. 13 November 2014. Mobile Application.

It is clear that adoption of digital technology is rapidly moving forward in everyday society, and therefore in museum appropriation. However, technology is a relatively contemporary innovation and its future repercussions regarding the way we use it in everyday life remains unknown. Stacey Mann, Jennifer Moses, and Matthew Fisher of Night Kitchen Interactive write,

“...decades may pass before we fully understand the implications of any new technology, either at the individual or societal level. By that time, the marketplace has been defined less by best practices, and more by ingrained habits and profitability. It can be difficult to rethink and retrain ourselves to use the technology in more strategic or beneficial ways.”¹³¹

Only through longitudinal studies and monitoring, will museums learn the impact of digital technology and interactives onto their audiences, and it is unknown how technology and digital platforms will have evolved and become integrated into society by then. Digital technology is ever changing and evolving, and the constant reevaluation and assessment of its role in society and the museum is integral in its future within museum experiences.

¹³¹ Mann, Stacy, Jennifer Moses, and Matthew Fisher. “Catching Our Breath: Assessing Digital Technologies for Meaningful Visitor Engagement.” *Exhibitionist* (Fall 2013) : 15.

Appendix

1. America's seniors, those known to be late adopters of technology, are increasing their digital consumption. According to a separate PEW study entitled "Older Adults and Technology Use," 41% do not use the Internet at all, 53% do not have broadband access at home, and 23% do not use cell phones.¹³² Once seniors do join the online and digital community, it can become an integral part of their everyday life. 71% of older adults who use the Internet go online every day or almost every day and an additional 11% go online three to five times per week.¹³³ These individuals also gain a positive appreciation and attitude towards technology. Author of the study, Aaron Smith writes, "Fully 79% of older adults who use the Internet agree with the statement that 'people without internet access are at a real disadvantage because of all the information they might be missing,' while 94% agree with the statement that 'the internet makes it much easier to find information today than in the past.'"¹³⁴ This study is informative in its demonstration of technological advancement and adoption amongst a demographic known for reluctant digital integration.

2. According to a global study conducted by Global Information and Measuring Company, Nielson in 2012, younger users are more likely to own a smartphone and older users are more likely to own a feature phone.¹³⁵ This is likely because feature phones have been on the market for a longer period of time. Nielson writes that "The

¹³² Smith, Aaron. "Older Adults and Technology Use: Main Findings." *Pew Research Internet Project*, 3 April 2014. Web. 4 April 2014.

¹³³ Ibid.

¹³⁴ Ibid.

¹³⁵ The Nielsen Company. "The Mobile Consumer: A Global Snapshot." Nielsen. February 2013. PDF file on Web. 25 September 2014, 10.

broader trend suggests that smartphone adoption will likely continue to rise as younger consumers age.”¹³⁶

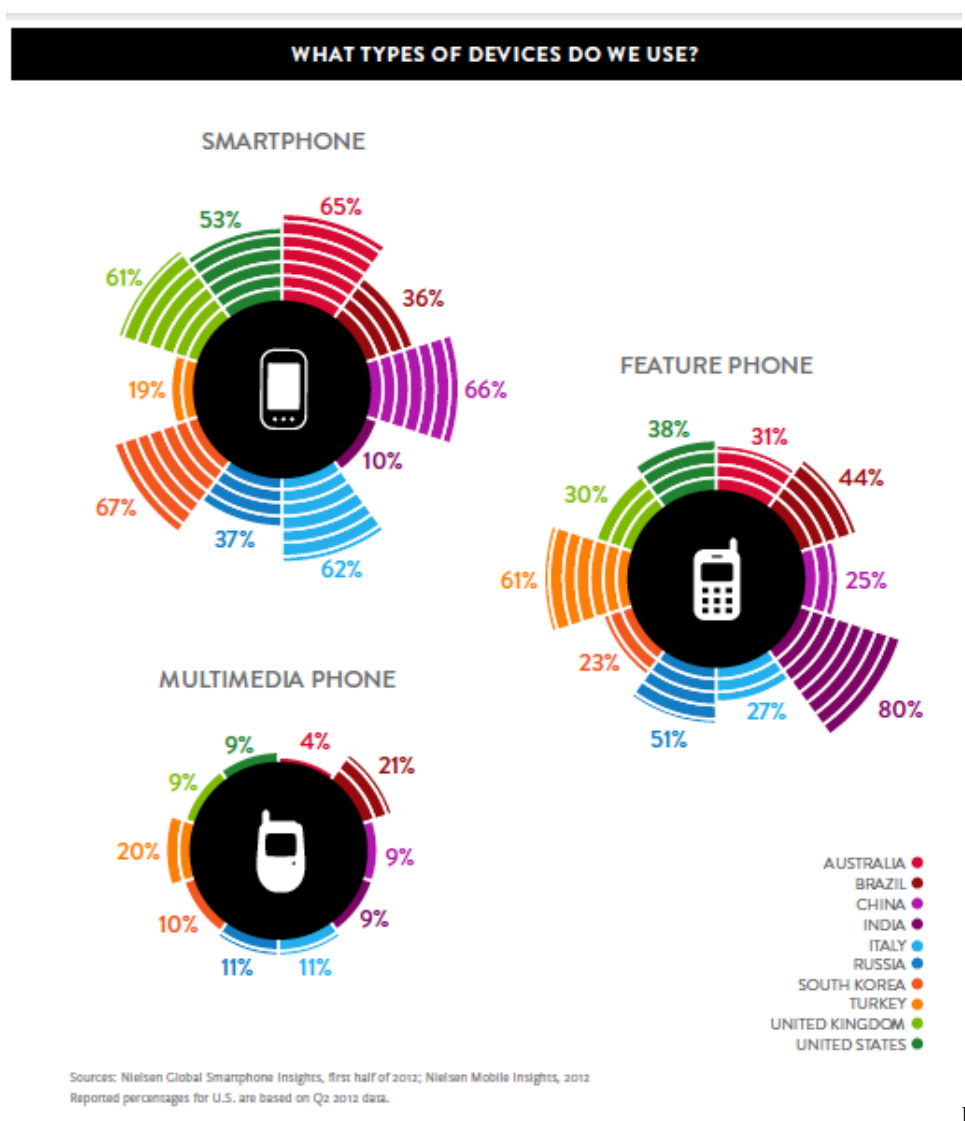


Fig.⁹

¹³⁶ La Placa Cohen. “Culture Track 2014.” *La Placa Cohen*. 2014. 1-114. PDF, 59-60.

3.

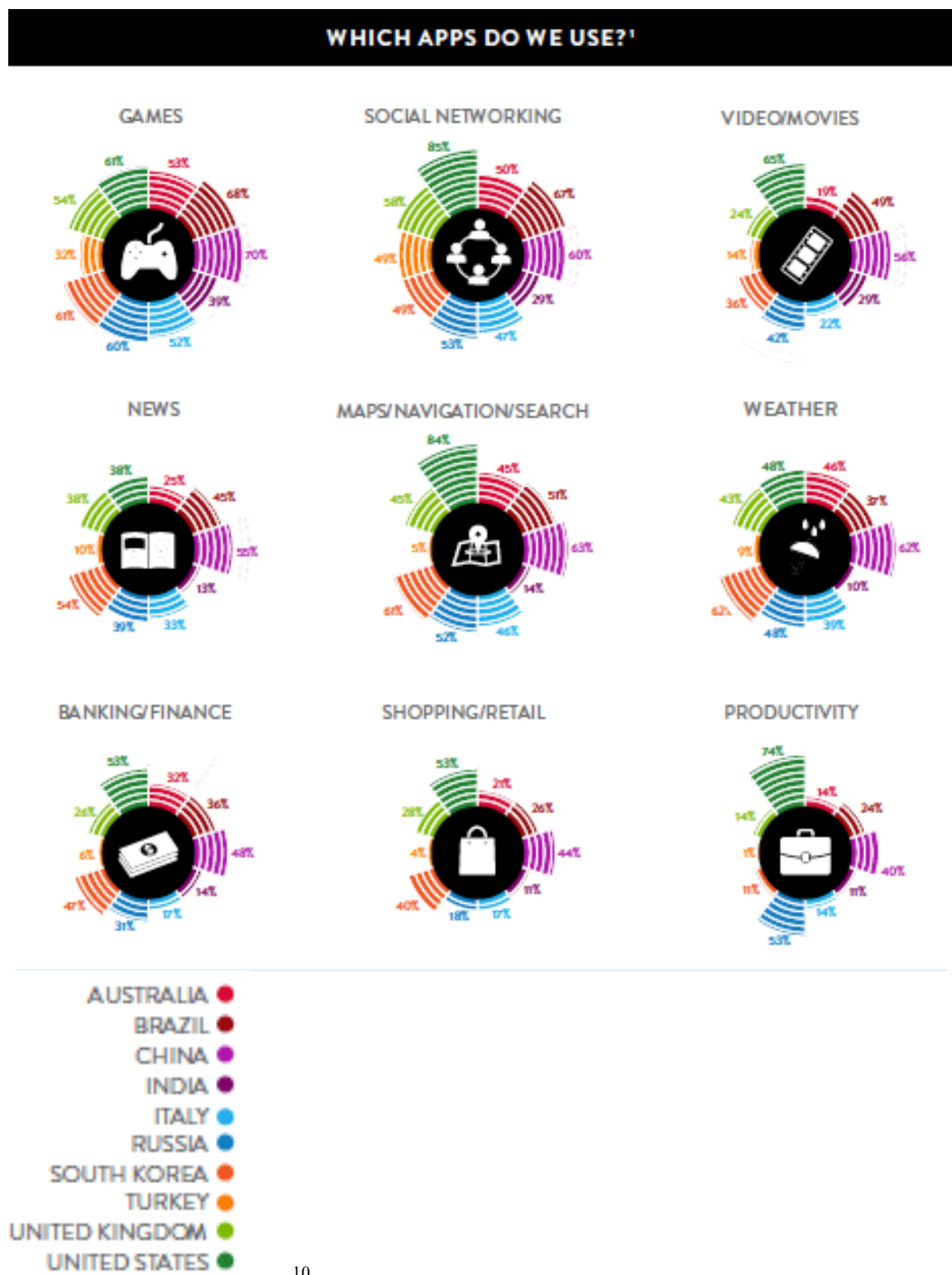


Fig. 10

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Visitor Connection:

Digital Integration Strategy for the Art Museum Experience



Leah Gelb
Museum Communication

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Visitor Connection:

Digital Integration Strategy for the Art Museum Experience

Leah Gelb

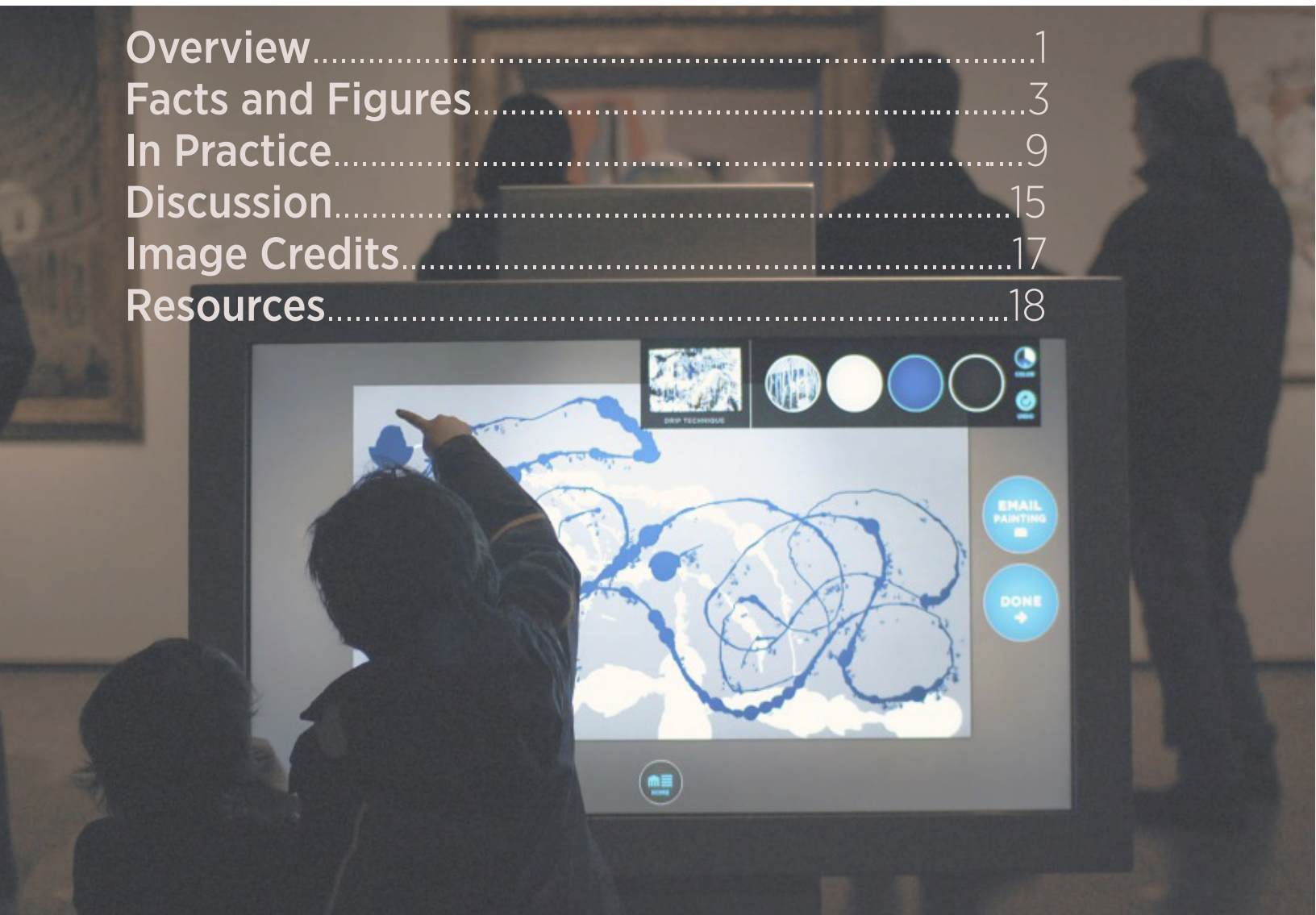
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The University of the Arts
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table of contents

Overview.....	1
Facts and Figures.....	3
In Practice.....	9
Discussion.....	15
Image Credits.....	17
Resources.....	18



terms

Digital, in its most basic meaning, translates to the use or storage of data/information through the form of digital signals and the use of computer technology. In essence, this thesis addresses “digital” as a medium for museum expression, and the term itself is used when representing computer technology. The term’s connotation refers to the collaboration between the medium and its overall planning and execution.

Handheld Device/Technology refers to mobile devices- those that travel with the visitor and can literally fit in his/her hand.

Interactive translates to an active experience of some kind, whether digital or not, in the form of participation. This can take place between a group of individuals or between a visitor and a feature of the museum experience.

Interactives is used throughout this thesis as a general digital interactive entity- a noun.

In-Person is a descriptor for a device that is offered within the physical museum visit, as opposed to a remote location.

Smartphone refers to a phone with an advanced operating system.

Unplugging or to **Unplug** refers to the act of consciously choosing to refrain from digital use; whether it is from a smartphone, television, or any other digital device.

Digital Interactives, Digital Devices, Digital Technology, Interactive Technology, Digital Interpretive Devices will all be used interchangeably unless otherwise specified. When referring to a specific model of a digital device, it will be referred to by name.

overview

The normalization of digital integration into everyday life includes that of the art museum environment. Contemporary museum trend and horizon reports are currently filled with models for new digital devices to be incorporated into museum galleries as institutions begin to take the plunge into digital advancement. However, simply installing digital devices into museum galleries does not necessarily meet visitor needs. **Art museum visitors do not fall into one category in terms of their museum expectations and levels of engagement, and there is no single model that can engage all types of visitors.** While these digital media are increasing in value and appeal throughout museums, it is important to question how and why, and most importantly, for whom?

As museum trend reports continue to promote the installation of digital devices into museum galleries, so will the art museum's compliance. Yet, the question remains as to whether or not such technology is created and incorporated in a manner that considers each type of museum

visitor, and thus succeeds in creating an equal visitor experience amongst constituents, as well as how to properly measure that engagement.

This thesis will explore the best practices when implementing such technology into the art museum and methods of effective evaluation regarding the visitor experience. This thesis argues that applying the study of everyday digital use to museum visitor studies will inform museum professionals when planning, executing, and evaluating interactive devices in their galleries. **It is through identifying a targeted audience, creating measurable goals and objectives for digital application, as well as a detailed evaluation plan that will result in a successful digital integration strategy for art museum galleries.** While a device's wow factor can play a part in attracting audiences, this work delves into visitor studies that are vital for successful strategic planning and considerations that will create and impart an engaging and a lasting impression on art museum audiences.

“The social web has ushered in a dizzying set of tools and design patterns that **make participation more accessible** than ever. Visitors expect access to a broad spectrum of information sources and cultural perspectives.” –Nina Simon

This study is solely targeted towards art museums and art museum audiences. It has become common practice for many museums such as science centers to incorporate digital interactives into their museum experiences, and sufficient research and evaluation has been conducted regarding their impact. Yet, art museums have been slow to install digital devices beyond audio guides throughout their galleries. Traditionally, art museums exhibit interpretive content through the eyes of the curator, who is considered the sole authority. He/she determines whether this in the form of label and wall text, or through the display of works devoid of information so that they “speak for themselves.” Nevertheless, each visitor chooses to experience an art museum visit differently, and many art institutions are recognizing that patrons prefer to discover their own meaning from exhibitions.

This investigation will provide considerations for art museum staff when strategizing the adoption and placement of digital devices

throughout the museum experience, as well as evaluating and measuring the impact of such devices. It aims to contribute to and supplement the knowledge of the decision-makers in the art museum, and ultimately influence the presentation of ideas, information, and experiences to the visitor. Many art museums are creating positions for and hiring digital strategists onto their staff, and it is important that such positions, along with related staff, solidify a well-informed framework prior to the installation of digital interactives.

It is through the careful planning of needs, goals, objectives, usability and production, as well as a specific identification of the targeted audience(s) that will lead the art museum digital movement towards successful application.

facts and figures

The following highlights evidence regarding visitor behavior and motivations, digital trends in society, as well as social and mobile trends amongst art patrons. These figures provide a comprehensive overview regarding visitor preferences, thereby informing the museum when designing digital in-person experiences.

Figure 1 groups the various motivations and behaviors of museum visitors defined by museum scholars and professionals. Many of these behavior descriptors overlap as visitors experience multiple inspirations and incentives for museum visitation prior to, during, and following the physical visit.

Figure 2 demonstrates the rise of internet use, social networking, and mobile subscriptions amongst the world and the North American populations.

Figure 3 maps social network use amongst arts patrons. Here, Facebook is in the lead, followed by Youtube and Twitter.

Figure 4 illustrates mobile use amongst arts patrons while on-site at an arts institution. Here, we see that patrons want to take photos, and

share them, search for additional information, and check in.

Devices are an increasing cultural norm in our society, which should be acknowledged and addressed by the museum. Individuals who own mobile devices are likely to bring them to their museum and use them in the manner that they would during a typical day. This might include accessing social media, searching for information related to the museum, or messaging with a friend. The museum, therefore, can provide engaging strategies for these visitors to apply their mobile use towards museum-related activities. Should a museum cater to its audience by providing them with opportunities to engage in digital activities, it would be demonstrating the ability to reflect societal behaviors and build off of them to appeal to personal meaning-making and effective visitor engagement.

While the facts and figures outlined in this work serve to inform the reader of existing and rising digital trends, this thesis suggests additional audience research be conducted by specific museums prior to investing in digital information platforms. There is no better

way of ensuring a device's ability to meet the needs and requests of their particular audience than to ask them directly. Furthermore, the museum must acknowledge the ever-changing nature of human behavior and of technology, and constantly monitor and adapt to such modifications.

6 Round



visitor behavior

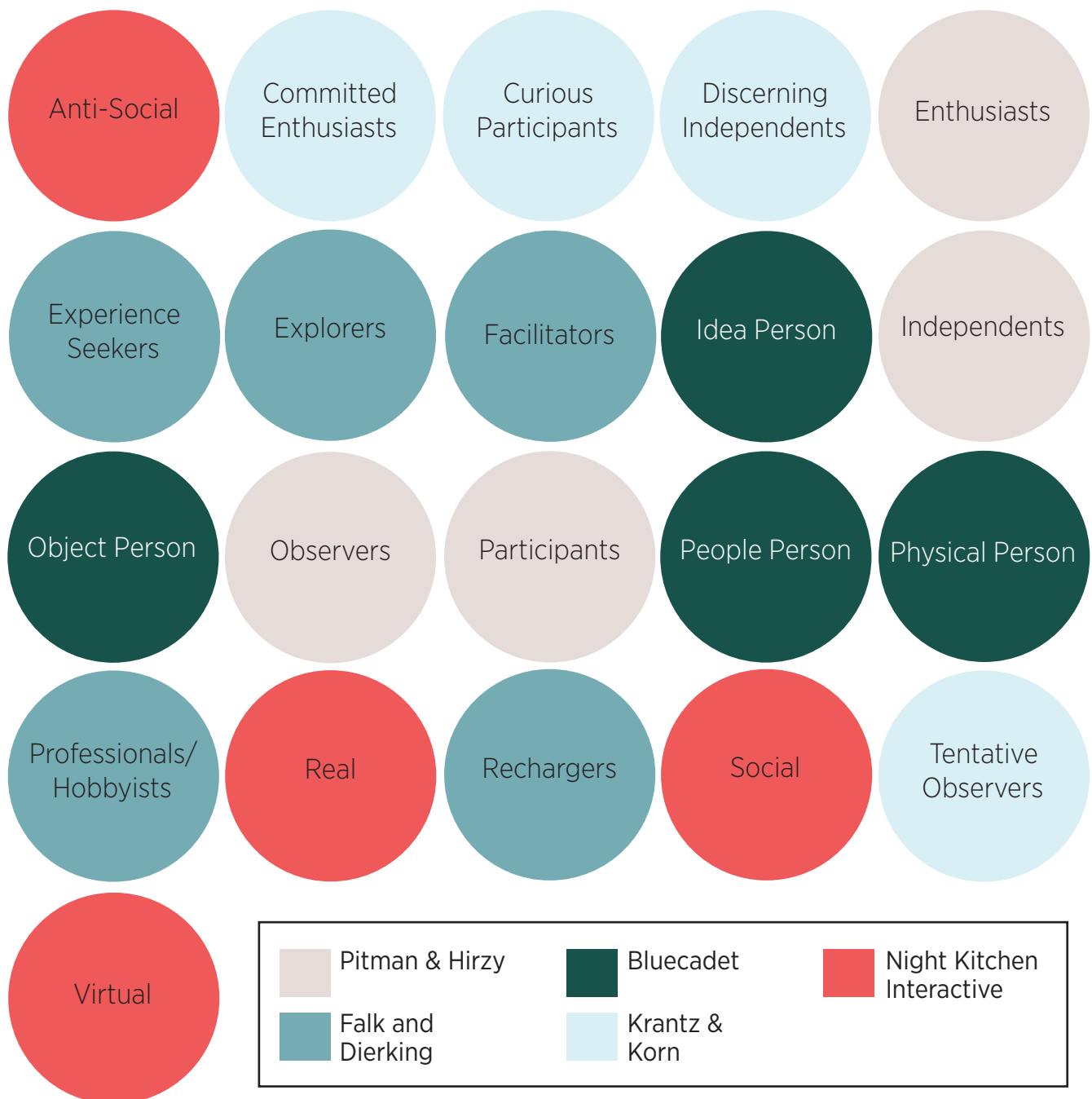


Figure 1

digital use snapshot

JAN 2014 **Global**

TOTAL WORLD POPULATION: 7 BILLION

52% URBAN 48% RURAL

INTERNET USERS: 2.5 BILLION

38%

ACTIVE SOCIAL NETWORK USERS:
1.9 BILLION

26%

MOBILE SUBSCRIBERS: 6.6 BILLION

93%

JAN 2014 **North America**

TOTAL POPULATION: 351 MILLION

82% URBAN 18% RURAL

INTERNET USERS: 284 MILLION

81%

ACTIVE SOCIAL NETWORK USERS:
197 MILLION

56%

MOBILE SUBSCRIBERS: 354 MILLION

101%

Figure 2

social networking

Percentage of Arts Patrons Accessing
Social Networks via Mobile Device

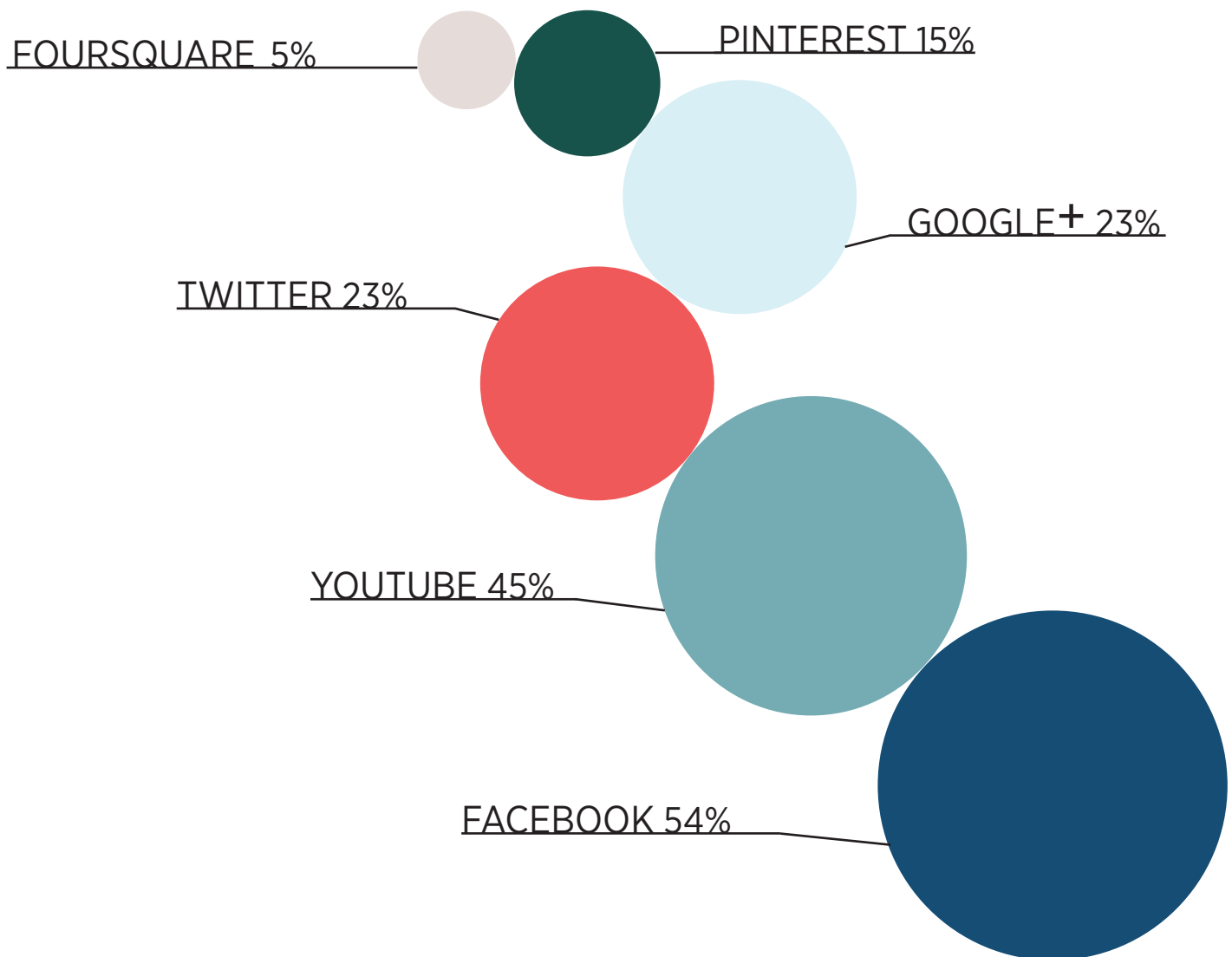


Figure 3

going mobile

On-Site Mobile Device Activity Among Arts Patrons in (2014)

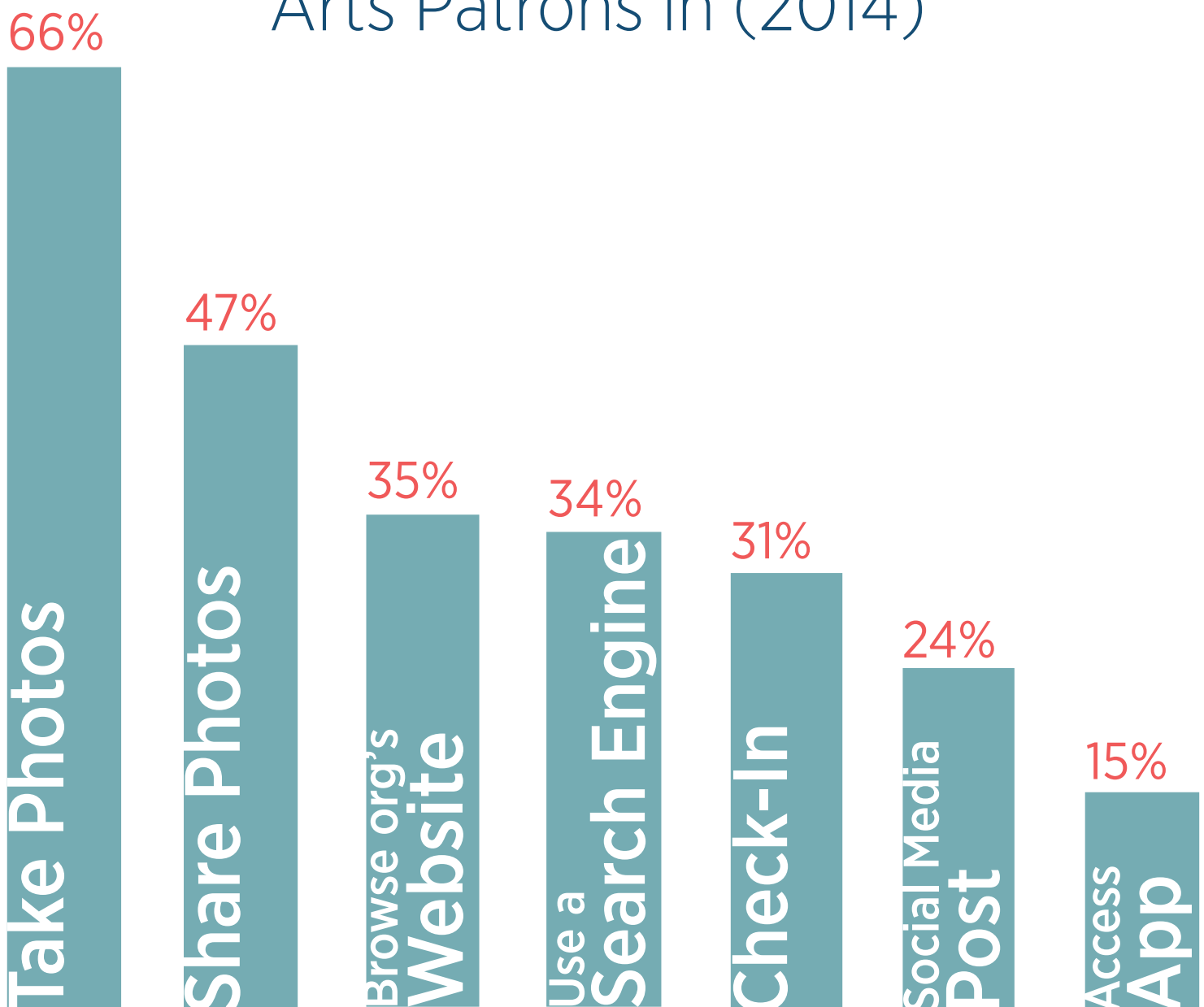


Figure 4



in
practice





creative process

- Museums must identify and consider the various types of visitors and cluster groups amongst their audience
- A museum must know and categorize their audience so as to identify who should be targeted in each digital project
- Form specific goals and objectives when conceptualizing any device along with the targeted audience for the project. Such goals must be measurable and achievable
- The interactive should consistently align with the institution's mission, strategic plan and goals.
- An interactive device must go through various evaluation and testing (on real visitors!)
- Most importantly in terms of evaluation, the evaluator should be included in the conversation at the start and throughout the entire conceptualization process and serve as an advisor to the digital initiative

“It all goes back to who are you trying to serve, what’s the best way to reach them, what are you trying to accomplish, what is your learning objective.”

–Stacey Mann,
Night Kitchen
Interactive

what can digital interactives do?

- **Add relevance.** An interactive should allow for personal meaning-making and connection for the visitor during his/her museum experience
- Give the **visitor control** of his/her experience. A customizable approach gives the museum audience a sense of authority and a personal stake in their visit
- Allow for **social interaction**: whether in-person or through social media, social interaction reigns as a crucial element to a museum visit. A device that isolates visitors will not satisfy the common motivation for museum visitation
- Reflect the findings of **digital use studies**. If accessing social media, purchasing tickets, checking-in, taking photos, and searching for nearby restaurants is in demand, make sure to consider incorporating these features with your offered application
- Make **creative connections**. A device has the ability to draw connections between multiple works. Mobile platforms, especially, have the power to connect works of art that may not be displayed in the same physical space
- Encourage the visitor to **look up**, not down! A museum visit is a physical experience and digital devices and interactives should be created to accompany what the institution features

in practice

The Metropolitan Museum of Art just rolled out a new app that offers “staff picks” tours that tie multiple works throughout the museum together with a unifying theme. Here is a screenshot of a mustache tour titled, “Met-staches”



how should they be designed?

- **Keep it simple!** Limit an interactive to 1-2 lessons or 4-5 questions, no more
- A digital device should be **intuitive** in its usability and appearance
- Make it **engaging**- to make something digital for the sake of being digital is not reason enough for the creation of an interactive
- Exist as an **optional** companion to a museum visit, not one that is mandatory. An individual's visit must not be restricted if he/she declines a digital interactive experience (or vice versa)
- Incorporate trending **digital design** that is informed by commercial design: clean, low-text, minimalist navigation, video/moving backgrounds, rich content, saturated colors, large imagery, and fixed position content are all digital trends of 2014 but designers should continue to examine rising trends throughout their tenures creating museum interactives
- Make the device **unique** to its purpose and to your institution - a generic prototype will not prove to be engaging or memorable

in practice



Cleveland Museum of Art's Gallery One offers a room full of interactive learning activities. Visitors seeking digital interactive experiences may enter the gallery and fulfill such motivations. Those seeking an unplugged visit may simply skip the gallery and continue on through the rest of the museum sans digital activities.

roles and responsibilities

- Don't keep it to yourself- installing digital interactives in the museum is a multi departmental endeavor that should involve staff across the entire institution
- Use this process as a chance to create new conversations and partnerships amongst the staff and volunteers
- To ensure proper evaluation strategy, an audience research professional/evaluator must work in cooperation with the museum/digital firm throughout the process of implementing a digital interactive in the museum
- Be open and transparent to the museum constituents. Not only is communication key amongst museum staff and volunteers, but also to its audience, particularly members and donors

“with so many voices as part of that process, there's interpretive voices, there's curatorial voices, communications, design voices, articulating what those goals are and what we want to achieve, that could be a significant part of the evaluation process is laying that out so that you're investigating the right questions.”

–Ariel Schwartz,
Philadelphia Museum of Art

discussion

It is clear that adoption of digital technology is rapidly moving forward in everyday society, and therefore in museum appropriation. However, technology is a relatively contemporary innovation and its future repercussions regarding the way we use it in everyday life remains unknown. Only through longitudinal studies and monitoring, will museums learn the impact of digital technology and interactives onto their audiences, and it is unknown how technology and digital platforms will have evolved and become integrated into society in the future.

Nevertheless, closely examining and applying digital trends outside of the museum from everyday life to a specified and targeted audience will result in strategic and engaging digital integration throughout the museum. It can only be through the calculated development of measurable and simple goals and objectives that a museum can successfully embark on its digital integration plan, as well as evaluate it. **If the device's goals, objectives,**

and target audience are clearly defined, then the framework for the evaluation of its visitor impact will be sequentially demarcated.

The museum must consider the multiple motivations and types of visitors when designing and implementing digital strategy. It is crucial to keep in mind that audience members differ greatly in their wants and needs when visiting the museum, and that there can be no single strategy to appease them all.

The museum must remain mission-driven throughout this process, and not incorporate technology simply for the sake of providing its audience with an attracting feature. Ultimately, if these considerations are carefully applied, the museum will deliver its established goals and objectives through the platform of the device.

This is not to say that the device cannot or should not be innovative, captivating, or revolutionary. In practice, museums have approached digital incorporation with caution

“This is a transitional moment for using technology in cultural experiences...and the audience is leading the way in defining the new norms.”

–La Placa Cohen, 2014

by following existing technological trends. However, as art institutions develop digital strategy teams and departments, so too can they begin to develop devices with breakthrough and pioneering features.

Digital technology can assist to inform the museum through analytics and digitally surveying audiences and the manner in which they utilize provided devices and apps. Digital interactives offer museums the ability to bring together concepts and make connections between artworks and individuals throughout the institution. Further research can explore the possibility of utilizing technology during in-person experiences to connect various works and individuals throughout multiple museums in collaboration.

Ultimately, digital technology is ever changing and evolving, and the constant reevaluation and assessment of its role in society and the museum is integral in its future within museum experiences.

image credits

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