THE UNIVERSITY OF CHICAGO

Multimedia Interactives in Exhibition Design:

A Qualitative UX (User Experience) Approach

By

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Table of Contents

Introduction

The field of Public History is at a crossroads. Museum-goers' educational and entertainment expectations are unprecedented with the influx of multimedia technologies in daily life and the widespread accessibility of resources that once were only available in physical museum buildings.[1] Essentially, the question that public historians are asking is: what can we offer to entice the public that is not already available through online sources? As our collective culture adapts to advancements in multimedia, the museum world must find a balance between education and entertainment to retain museum patronage. At the core of this field-wide discourse around the visitor experience lies exhibition design. Museum exhibition design applies to the intentional choices made regarding artifact use and placement, text card narrative, and finally multimedia incorporation. Through all these aspects, historians tell critical stories about our past in hopes of informing our future. For decades, visual and audio technology has been incorporated into exhibition design to enhance the visitor experience in line with the evolving needs and desires of the public. Now, the question is, where to draw the line?

As a University of Chicago's Master of Arts Program in the Social Sciences graduate student with three years of experience in public secondary education, and one year in museum research, I partnered with the Chicago History Museum's exhibitions team as a consultant to examine the existing interactives in their permanent exhibit *Chicago: Crossroads of America* in order to make recommendations on the possible incorporation of multimedia interactive displays. Through field-based observations, standardized questionnaires, existing data provided by the

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[1] Yumei Han, "Analysis on the Application of Media Technology in Museum Exhibition," *IOP Conference Series. Earth and Environmental Science 510*, no. 6 (April, 2020, 4. http://proxy.uchicago.edu/login?url=https://www.proquest.com/scholarly-journals/analysis-on-application-media-technology-museum/docview/2555833371/se-2.

museum, comparison with relevant literature, and inter-department discussions I evaluated how multimedia technologies as a storytelling tool can reach audiences innovatively without diluting the educational content of historical narratives. My direct contact was a doctoral alumnus of The University of Chicago's English Department, Dr. Paul Durica, the director of exhibitions. Through email correspondence and Zoom meetings, we identified this five-week project as potentially fruitful for both expanding my experience in the museum world and providing a unique service to a favored exhibit that needs a refresh.

Background Research

The Chicago Historical Society, later renamed The Chicago History Museum was founded in 1856. Its physical location changed over time due to not only the 1871 Chicago fire but to an additional local fire in 1874 that destroyed both the building and its collections. The museum's current building in Lincoln Park opened its doors to the public in 1932 and now houses 23 million objects in its collections, is managed by over 100 staff members, and welcomes 52,000+ student visitors each year.[2] The Chicago History Museum's exhibit *Chicago: Crossroads of America* opened on September 30, 2006, and serves as the hallmark of the institution's meta-narrative of Chicago's dynamism. The exhibit is divided into five thematic sections, chronologically arranged to display how Chicago has adapted throughout its history. Each section highlights the tense complexities of the city's story. The sections are:

1. **City on the Make** examines Chicago as a crossroads of economic and cultural exchange from prehistoric time to the present.
2. **City in Crisis** shows how conflicting social, economic, and political forces converging at the crossroads can explode in violent disorder, disrupting and changing the city.
3. **Sweet Home Chicago** explores how Chicago's communities unite and divide along the lines of race, ethnicity, and class.

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[2] "Museum History," About Us, Chicago History Museum, https://www.chicagohistory.org/about-us/museum-history/

4. **Second to None** gives a presentation of Chicago's many innovations and their far-reaching impact.
5. **My Kind of Town** discusses Chicago as a cultural crossroads where generations of people have gathered to play and celebrate.
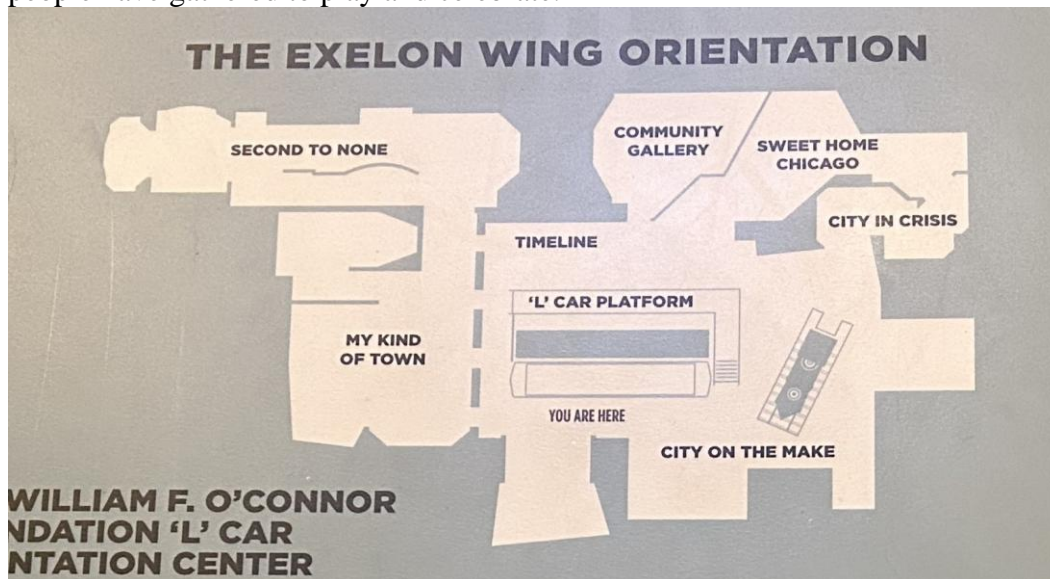
Figure 1: Chicago: Crossroads of America Floor Plan

Chicago: Crossroads of America has not been updated outside of artifact conservation in its seventeen-year lifespan. When the exhibit was unveiled, the field of museum curatorship utilized a different set of tools than those working in the field today have at their disposal. Multimedia technology including video, interactive touch screens, dynamic light displays, and even artificial intelligence, are now all common elements as curators seek to engage the public.[3] The Chicago History Museum's newer featured exhibits: *Back Home: Polish Chicago* and *City on Fire: Chicago 1871* include some of these interactive learning tools. This project examined the productivity of those inclusions in the two newer exhibits and asked whether multimedia interactives would introduce a new face to a beloved exhibit.[4]

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[3] Yumei Han, "Analysis on the Application of Media Technology in Museum Exhibition," *IOP Conference Series. Earth and Environmental Science 510*, no. 6 (April, 2020, 2. http://proxy.uchicago.edu/login?url=https://www.proquest.com/scholarly-journals/analysis-on-application-media-technology-museum/docview/2555833371/se-2.

[4] "Chicago: Crossroads of America," Exhibitions, Chicago History Museum, https://www.chicagohistory.org/about-us/museum-history/

Literature Review

As museums seek to sustain relevancy through technological updates as collections are becoming digitized, UX (user experience)[5] evaluative rubrics must adapt to the countless facets of modern exhibitions. A comprehensive evaluation framework is needed to analyze when, where, how, and why to retain traditional display designs that utilize tactiles, texts, and primary sources or if they should combine these elements through multimedia interactives. This will ensure that the museum's exhibition design decisions are grounded in productive visitor-focused research.

The American Historical Association (ADA) has struggled to accept a modern technologically relevant rubric for public historians. The AHA views that media innovation has identified a "disconnect between emerging practice and the evaluation of that practice, (which) discourages scholars at all levels from engaging with the new capacities." Historians are "creatively confronting ways in which historical knowledge increasingly will be created and communicated," but without a streamlined evaluative framework for first experimentation and then implementation, history education and technology will continue to have a convoluted relationship.[6] The ADA identified this gap in the journey to modernize the history field but has yet to bring forward a realistic option. This project therefore incorporates traditional exhibition evaluation guides, experimental guides with media focuses, and qualitative data analysis

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[5] "UX is primarily concerned with the emotional and holistic experience created when a user interacts with a product, usually an interactive one, such as a computer." Ellie King, M. Paul Smith, Paul F. Wilson, Janet Stott & Mark A. Williams, "Creating Meaningful Museums: A Model for Museum Exhibition User Experience," *Visitor Studies* 26 (2023): https://doi.org/10.1080/10645578.2022.2129944

[6] Benjamin M. Schmidt, "Guidelines for the Professional Evaluation of Digital Scholarship by Historians," *American Historical Association* (June 2005): 1.

strategies borrowed from marketing research in hopes of engaging in a comprehensive methodology.

Experimental Frameworks

The MEUX Model

Addressing weaknesses in models for summative evaluation**,** the MEUX (Museum Exhibition User Experience) Model introduced by Ellie King, M. Paul Smith, Paul F. Wilson, Janet Stott, and Mark A. Williams in collaboration with Oxford University Museum of Natural History (OUMNH) provides an experimental exhibition evaluation framework that is effectively visitor centric. The MEUX Model argues for a holistic approach to visitor studies that incorporates both pragmatic and hedonic qualities.[7] According to these researchers, existing summative evaluation practices are unsystematic due to "a lack of standardized reporting protocols" correlating to a limited ability to create change in long-loved museums.[8] Insights into visitor behavior and desires applied to future exhibition planning are required, but the framework to do so has not been accepted, therefore this team looked to user experience (UX) research methodology to explore how a variation of qualitative data analysis can be adapted to non-profit institutions. This was all in the hope of creating "rich and meaningful exhibitions, with visitor experiences captured effectively."[9]

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[7] Ellie King, M. Paul Smith, Paul F. Wilson, Janet Stott & Mark A. Williams, "Creating Meaningful Museums: A Model for Museum Exhibition User Experience," *Visitor Studies* 26 (2023): 59.
[8] Ellie King, M. Paul Smith, Paul F. Wilson, Janet Stott & Mark A. Williams, "Creating Meaningful Museums: A Model for Museum Exhibition User Experience: 60.
[9] Ellie King, M. Paul Smith, Paul F. Wilson, Janet Stott & Mark A. Williams, "Creating Meaningful Museums: A Model for Museum Exhibition User Experience: 60.

MUSEUM PERSPECTIVE

EXHIBITION FEATURES
Content
Presentation
Functionality
Interaction

→

INTENDED EXHIBITION CHARACTER
Pragmatic Qualities
Hedonic Qualities

→

KEY AIMS
For the Museum
Visitors to Know
Visitors to Feel
Visitors to Do

VISITOR PERSPECTIVE

EXHIBITION FEATURES
Content
Presentation
Functionality
Interaction

→

APPARENT EXHIBITION CHARACTER
Pragmatic Qualities
Hedonic Qualities

AFFECTING FACTORS
Audience Factors
Exhibition Factors

→

MOTIVATIONS
Intellectual
Emotional
Spiritual
Social

VISITOR GAINS
Visitors to Know
Visitors to Feel
Visitors to Do

Figure 2: MEUX Perspective Flowchart[10]

In UX research, three primary factors exist, "the context in which an interaction takes place; the current mood, motivations, and resources of the user experiencing the system; and the user's perception of the system, such as brand image."[11] The proposed MEUX (Museum Exhibition User Experience) model is an adaptation from Hassenzahls model of UX evaluation, famous for its separation of the design and user perspectives, which scaffolded effectively will finally capture the key elements of museum learning and exhibition experience since it

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[10] Ellie King, M. Paul Smith, Paul F. Wilson, Janet Stott & Mark A. Williams, "Creating Meaningful Museums: A Model for Museum Exhibition User Experience: 66.
[11] Ellie King, M. Paul Smith, Paul F. Wilson, Janet Stott & Mark A. Williams, "Creating Meaningful Museums: A Model for Museum Exhibition User Experience: 61.

recognizes museums' diverse audiences and their wide range of motivations for visiting.[12] The

MEUX Model is therefore divided into the Museum Perspective and the Visitor Perspective.[13]

Designed with the understanding of how decisions made in exhibition development affect the

visitor experience, the MEUX Model acknowledges that there will always be a disconnect

between the designer's intentions and the visitor experience, but through a continual rigorous

evaluation that gap may be reduced.[14] This model was designed through extensive survey data,

which showed the researchers that "even if an exhibition contains objects, paintings, text panels

for interpretation, or digital interactives, this does not automatically make an exhibition good or

successful," proving the variability of user preference. This framework has yet to be widely

accepted by museum professionals, but it not only works to "capture the facets of visitor

experience coherently, but it also details how the actions of the museum during exhibition

development affect such experiences," which does attempt to fill the gap in museum evaluative

scholarship.[15] If not the MEUX Model, a nuanced and qualitative UX framework specific to the

museum sphere is needed to create truly accessible visitor engagement.

The MUSETECH Model

The MUSETECH Model is another experimental framework in the bourgeoning field of

museum and visitor research studies because it puts technology at the center of the modern

visitor experience. This model also is based on UX research, but its primary goal is to examine

"what it means for heritage institutions to successfully or unsuccessfully deploy technology,

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[12] Ellie King, M. Paul Smith, Paul F. Wilson, Janet Stott & Mark A. Williams, "Creating Meaningful Museums: A Model for Museum Exhibition User Experience," *Visitor Studies* 26 (2023): 63.

[13] Ellie King, M. Paul Smith, Paul F. Wilson, Janet Stott & Mark A. Williams, "Creating Meaningful Museums: A Model for Museum Exhibition User Experience: 65.

[14] Ellie King, M. Paul Smith, Paul F. Wilson, Janet Stott & Mark A. Williams, "Creating Meaningful Museums: A Model for Museum Exhibition User Experience: 74.

[15] Ellie King, M. Paul Smith, Paul F. Wilson, Janet Stott & Mark A. Williams, "Creating Meaningful Museums: A Model for Museum Exhibition User Experience: 79.

(which) necessitates focusing on all stakeholders."[16] The MUSETECH Model identified three

thematic entities that are in relationship with one another in the exhibition design and evaluation

process: the Museum, Visitor, and Cultural Heritage Professional (CHP).[17] In an advocating

article, Areti Damala, Ian Ruthven, and Eva Hornecker discussed the controversy of introducing

digital media in its many forms in museum settings, and through their proposed framework, they

analyzed the potential risks and benefits of this investment.[18] As we are in the era of digital

reform, it is a great challenge to genuinely assess the short and long-term impact that technology

is having on museums as institutions and as providers of experiences. The MUSETECH model

therefore is "a comprehensive framework for evaluating museum technology before and after its

introduction into a museum setting."[19] The team of researchers on this project displayed the

many variables that go into technology in exhibition design:

> "selecting the appropriate technology; adapting it to fit the goals; creating, updating, and
> reusing content; personalizing, monitoring, and tweaking in order to guarantee robustness
> and flawless performance; understanding the impact on the workflow processes for the
> museum personnel; proceeding to a cost-benefit analysis; inferring whether staff training is
> required; investigating energy and maintenance issues; guaranteeing security and safety;
> managing and guaranteeing accessibility for all visitors; and managing personal data storage
> and usage."[20]

Naming the variables is surely not enough, but the sheer size of this list makes it evident why no

other evaluative framework is truly comprehensive. To make meaningful educational

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[16] Areti Damala, Ian Ruthven, Eva Hornecker, "The MUSETECH Model: A Comprehensive Evaluation Framework for Museum Technology," *Journal on Computing and Cultural Heritage* 12:1, no.7 (February 20, 2019): 1. https://doi.org/10.1145/3297717
[17] Areti Damala, Ian Ruthven, Eva Hornecker, "The MUSETECH Model: A Comprehensive Evaluation Framework for Museum Technology: 1. https://doi.org/10.1145/3297717
[18] Areti Damala, Ian Ruthven, Eva Hornecker, "The MUSETECH Model: A Comprehensive Evaluation Framework for Museum Technology: 1. https://doi.org/10.1145/3297717
[19] Areti Damala, Ian Ruthven, Eva Hornecker, "The MUSETECH Model: A Comprehensive Evaluation Framework for Museum Technology: 1. https://doi.org/10.1145/3297717
[20] Areti Damala, Ian Ruthven, Eva Hornecker, "The MUSETECH Model: A Comprehensive Evaluation Framework for Museum Technology: 4. https://doi.org/10.1145/3297717

experiences for museumgoers is no small feat, especially in relation to representing the stories of our collective past with visitors of diverse backgrounds all with different objectives.

The MUSETECH Wheel was designed through in-depth data collection, testing, and comparison with relevant literature.[21] The data was collected through "front-end, formative and summative evaluation, as well as from several hands-on workshops in which designers, researchers, engineers, and museum professionals contribute," which is exactly how the model is intended to be used.[22] The wheel model provides two sections, the MUSETECH Wheel and MATRIX both work together to provide a guide for "recording, benchmarking, and evaluating the multifaceted impact from the use of museum technology."[23] It is intended to be a tool for analytical reflection of the museum structure, by separating the perspectives and goals of the visitor and the museum and providing languages to generate new research questions leading to fresh insights. The criteria's four Quartiles: Design, Content, Operation, and Compliance can be used as an analytical test to determine the potential productivity of technological updates in the three symbiotic entities: the visitor, the CHP, and the Museum.[24] This non-linear approach employed in conjunction with the mission goals of the museum can lead museum professionals to create their own evaluative strategy within the provided framework, tailored to their specific needs.
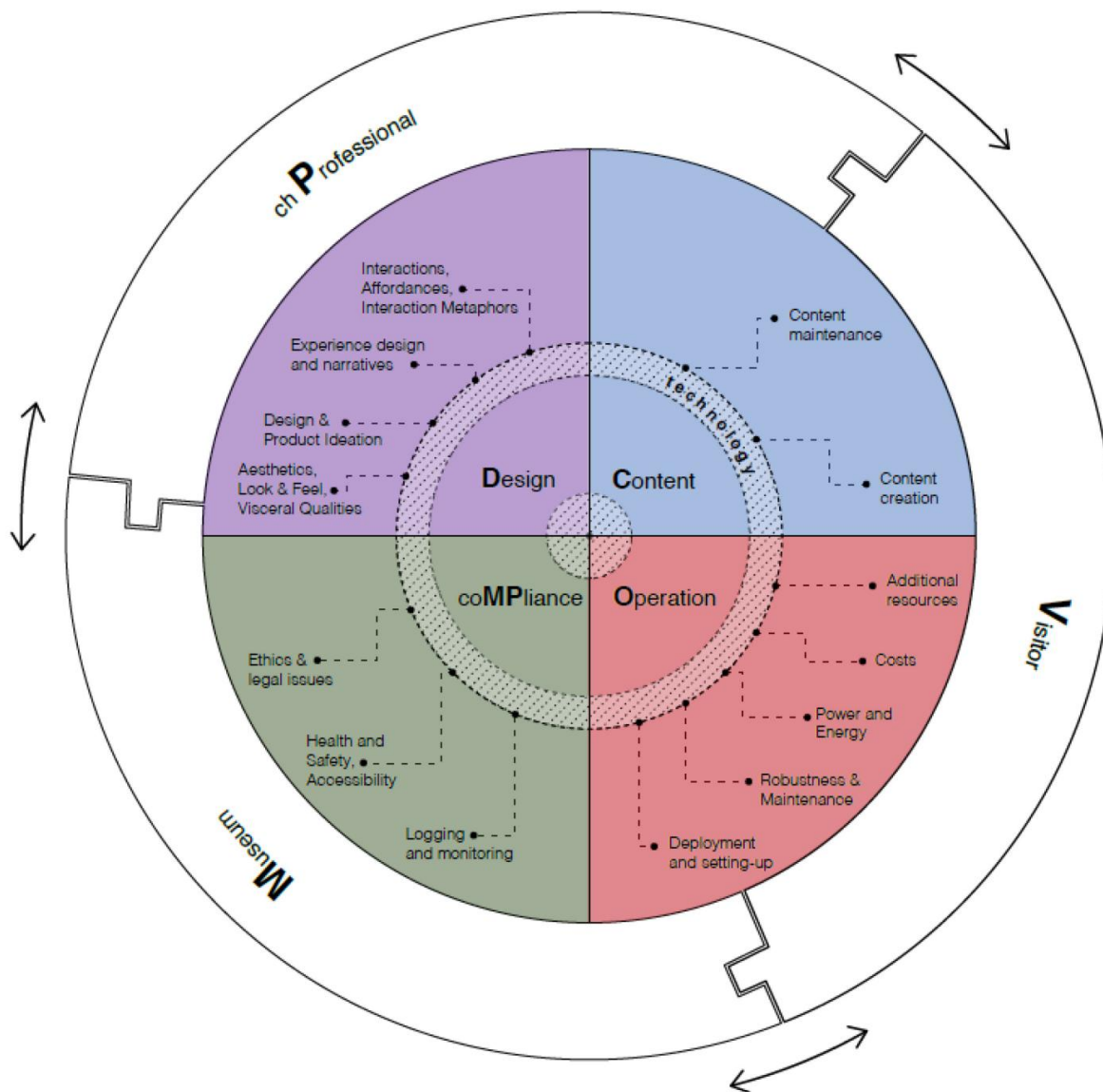
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[21] Areti Damala, Ian Ruthven, Eva Hornecker, "The MUSETECH Model: A Comprehensive Evaluation Framework for Museum Technology: 9. https://doi.org/10.1145/3297717
[22] Areti Damala, Ian Ruthven, Eva Hornecker, "The MUSETECH Model: A Comprehensive Evaluation Framework for Museum Technology: 9. https://doi.org/10.1145/3297717
[23] Areti Damala, Ian Ruthven, Eva Hornecker, "The MUSETECH Model: A Comprehensive Evaluation Framework for Museum Technology: 18. https://doi.org/10.1145/3297717
[24] Areti Damala, Ian Ruthven, Eva Hornecker, "The MUSETECH Model: A Comprehensive Evaluation Framework for Museum Technology: 18. https://doi.org/10.1145/3297717

Figure 3: MUSETECH Wheel[25]

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[25]Areti Damala, Ian Ruthven, Eva Hornecker, "The MUSETECH Model: A Comprehensive Evaluation Framework for Museum Technology: 11. https://doi.org/10.1145/3297717

Quartile	Clusters	ch Professional	Museum	Visitor
Design	**D1** Design & Product Ideation	a Design concept b Integration with exhibition c Integration with other ICT d Balancing physical with digital e Understanding of the fabrication process f In-house technical knowledge	a Innovation, business intelligence b Brand name, uniqueness, originality c Integration with other ICT d Budget e Staff acceptance	a Co-design, front-end evaluation & visitor acceptance
	D2 Experience design and narratives	a Experience added value b Relevance to audience c Tailored content d Attentional Balance e Social Interaction f Before and after the visit support	a Interpretive, educational, learning potential b Personalisation potential c Public outreach and communication d Big data potential	a Engagement b Personalisation c Learning, entertainment, edutainment d Attentional Balance e Affective Impact f Social interaction g Ability to follow usage on other platforms h Sense of belonging to a community
	D3 Interactions, Affordances, Interaction Metaphors	a Affordances b interaction metaphors c Interface design d Clarity of navigation e Follow-up usage on other platforms f Multisensoriality	a Follow-up usage on other platforms b Brand name, uniqueness, originality	a Utility, usability, ease of use b Intuitiveness, learnability, learning curve c Responsiveness d Clarity of navigation e Personalisation f Social interaction g Follow-up usage on other platforms h Multisensoriality
	D4 Aesthetics, Look & Feel, Visceral Qualities	a Look and feel	a Brand name, uniqueness, originality	a Look and feel

Figure 4: MUSETECH Design Quartile[26]

The MUSETECH Wheel and Matrix were utilized in my project as both a tool of reflection on the interconnectedness of the roles and variables of design which scaffolded my research questions and as a means of evaluating whether those questions could be substantiated. This grounding model was the most applicable to my specific project with the Chicago History Museum, as it is one of the few recently published evaluation models that account for multimedia in design. As the MUSETECH Model and models like it provide a "'living'

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[26] Areti Damala, Ian Ruthven, Eva Hornecker, "The MUSETECH Model: A Comprehensive Evaluation Framework for Museum Technology: 13. https://doi.org/10.1145/3297717

framework that can be extended as new types of technology raise new questions about their use and evaluation," public historians will need to constantly reexamine the productivity of these experimental frameworks in order to serve their respective audiences best.

A Note on the Audience: The Non-Traditional Learner

Inspired by the passage of the Americans with Disabilities Act of 1990 (ADA), "access" and "accessibility" have become buzzwords in the world of public history.[27] Outside of reaching governmental legal standards, public historians should therefore view diverse learners' engagement as a "chance to reach a new or expanded audience, build community relationships, and engage stakeholders."[28] As such, a crucial factor in any experimental design is the acknowledgment of the diversity of users. Preference aside, design decisions must be made in light of the potential physical, mental, and emotional limitations of museumgoers. The passage of the (ADA) informed museums all around the world that they were far behind in creating truly accessible environments.[29] The Universal Design for Learning (UDL) is a progressive exhibit design tool focused on diverse learners, which can set a standard regarding pedagogical offerings.[30] Exhibition coordinators and curators are seeking effective ways to sustainably improve opportunities for engagement for all visitors, as the United States has "witnessed a

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[27] Clary & Dillian, "Printing the Past: Building Accessibility and Engagement Through 3-D Technologies," 44. doi: https://doi.org/10.1525/tph.2021.43.2.41
[28] Clary & Dillian, "Printing the Past: Building Accessibility and Engagement Through 3-D Technologies," 44. doi: https://doi.org/10.1525/tph.2021.43.2.41
[29] Gabrielle Rappolt-Schlichtmann and Samantha G. Daley, "Providing Access to Engagement in Learning: The Potential of Universal Design for Learning in Museum Design" *Curator the Museum Journal* 56, no. 3 (July 2013): 307.
[30] "Universal design provides accessibility for all people, all the time, regardless of ability, age, impairment, or knowledge." Katie Stringer Clary, Carolyn Dillian, "Printing the Past: Building Accessibility and Engagement Through 3-D Technologies" *The Public Historian* 43, no. 2 (May 2021): 46. doi: https://doi.org/10.1525/tph.2021.43.2.41

conceptual shift within formal public education away from accommodation, toward greater interest in providing 'personalized' curricular materials."[31]

In the museum world, this means moving past simply physical access to museum exhibits to flexible engagement opportunities that are geared specifically towards the non-traditional learner. To accomplish this, both the methods and materials utilized must have wide variability to include all visitors. Although this is time-consuming and costly, as a public-serving institution, adaptations need to be made. The traditional text-heavy exhibit design model does not serve all, either in ability or preference, so another option must be considered: perhaps multimedia interactives.[32] With all learners in mind when designing museum exhibits, I believe that "rich, engaging, and unencumbered learning environments for everyone" can not only be created but will benefit all.

Museum professionals have approached the accessibility question in fascinating ways, by utilizing technology to rethink the exhibit experience. While this project focuses on touch screens in exhibition design, innovative technology with a pedagogical focus has been introduced including 3-D printers to reproduce artifacts for visitor handling. Katie Stringer Clary and Carolyn Dillian in their article, *Printing the Past*, discussed the use of 3-D printed artifact replicas using "a Creality10s 3-D printer with Cura software for manipulation of 3-D files" in an experimental exhibit in partnership with the Horry County Museum in South Carolina.[33] After consulting community stakeholders with and without disabilities, and post-display

[31] Gabrielle Rappolt-Schlichtmann and Samantha G. Daley, "Providing Access to Engagement in Learning: The Potential of Universal Design for Learning in Museum Design" *Curator the Museum Journal* 56, no. 3 (July 2013): 309.
[32] Gabrielle Rappolt-Schlichtmann and Samantha G. Daley, "Providing Access to Engagement in Learning: The Potential of Universal Design for Learning in Museum Design" *Curator the Museum Journal* 56, no. 3 (July 2013): 312.
[33] Clary & Dillian, "Printing the Past: Building Accessibility and Engagement Through 3-D Technologies,"55. doi: https://doi.org/10.1525/tph.2021.43.2.41

questionnaires, the scholars noted that both traditional and diverse learners appreciated the

opportunity to physically interact with 3-D printed artifact replicas and to listen to the audio

version of the text.[34] Although many updates in the non-profit sector are cost-prohibitive, the

benefits for visitors with "visual disabilities, neurodivergence, and sensory processing

differences" as well as all visitors at large are invaluable.[35]

Methods

Museum Exhibition Evaluation Framework

The two pieces of traditional scholarship authored by Nia Simon and Kathleen McLean

were selected by the client, Dr. Paul Durica as they are pivotal to his ethos of exhibition design

and it was important to him for them to be included. Systematically evaluating the direct impact

of museum exhibits is challenging due to the countless potential variables that encompass the

visitor experience.[36] Titled in 2010 in her book *The Participatory Museum*, Nina Simon

challenged the world of public history to base visitor engagement strategies on reflective data

analysis. This movement has gained significant traction as technological advancements have

opened new doors for visitor interaction with collection materials and innovative historical

narration. Nina Simon analyzed the role of the participatory museum as crucial to the lasting

relationship of historical education institutions in local and online communities. She argued that

exhibition designers' role in participatory experiences does not end in the development phase, as

it is necessary to consistently reevaluate visitor engagement to ensure that the exhibit is reaching

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[34] Clary & Dillian, "Printing the Past: Building Accessibility and Engagement Through 3-D Technologies," 52 & 59. doi: https://doi.org/10.1525/tph.2021.43.2.41
[35] Clary & Dillian, "Printing the Past: Building Accessibility and Engagement Through 3-D Technologies," 49. doi: https://doi.org/10.1525/tph.2021.43.2.41
[36] Kate Noble, "How To: Evaluate an Exhibition," *University of Cambridge Museums & Botanic Garden*, 1.

its fullest potential. Through this, more dynamic exhibits can be created/ adapted inspired by research-based insights. Equally, the Participatory Museum movement advocates for a continual relationship between scholars, designers, and the public, through that relationship, more effective educational experiences can be offered in museums. Nina Simon is amongst many other public historians in this call to create and maintain evaluative criteria in exhibition design, but her model is particularly intriguing as she centers her scholarship on interactive history, proving its applicability to the aims of this project. Simon separated evaluating impact into three steps: 1) stating your goals, 2) defining behaviors and outcomes that reflect those goals, and 3) measuring or assessing the incidence and impact of the outcomes via observable indicators.[37] It was especially important at the beginning of this project to utilize a thematic strategy to then be able to create a specific research plan that could inform streamlined and effective data collection practices.

Additionally, this project adapted two of Kathleen McLean's types of exhibition evaluations. McLean's figuration included audience research, front-end analysis, formative evaluations, and summative evaluation.[38] As defined, audience research asks, who does and does not come to museums, and why? This is examined through visitor surveying and standardized questionnaires. Front-end analysis consists of interviews and focus groups to learn visitors' interests, and knowledge, and uncover misconceptions that may be prompted by the exhibition design or content. Formative evaluation is arguably the most valuable type of evaluation. It focuses on ways to refine the exhibit through visitor reflection provided by questionnaires and open-ended interviews with the public. This is the last chance for the exhibition designers to

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[37] Nina Simon, *The Participatory Museum* (Santa Cruz: Museum 2.0, 2010), 302.
[38] Kathleen McLean, *Planning for People in Museum Exhibitions (*Washington D.C.: Association of Science-Technology Centers, 1993), 71-75.

adapt the displays to ensure that the intended experiential goals are being met. These evaluation

types are all done before the exhibit is fully developed to remediate any areas of potential

concern before the official opening. The final evaluation occurs after the exhibit has been open

and operating for an extended period. Summative assessment is concerned with documenting

how visitors experience the exhibit and asks if the originally intended learning, process, and

behavioral goals differ from those present. This type uses pre and post questionnaires, and visitor

observations to answer its research questions. In the case of potential multimedia updates to

Chicago: Crossroads of America, I first utilized summative assessment techniques to analyze the

productivity of the existent multimedia inclusion in the two newer exhibits, *Back Home: Polish*

Chicago and *City on Fire: Chicago 1871* and second, audience research to inform my

recommendations for a new multimedia interactive in the main exhibit. Similar to the strategic

evaluative framework provided by Nina Simon, Kathleen McLean reminds us that the work of

public historians is never done.

Qualitative Data Collection Framework

Without a comprehensive framework for this project, when it came to moving past the

theoretical stages to the actual research process, I sought examples from qualitative UX (user

experience) data collection and analysis strategies in other fields. Due to the nature of the

research problem and the limited relevant literature, I chose to take on an evaluative framework

for strategic development common in qualitative marketing research.[39] I did so because my

requested deliverable by the Chicago History Museum was very similar to that of a consultant in

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[39] Mike Imms & Gill Ereaut, An Introduction to Qualitative Market Research, (SAGE Publications Ltd, 2002), 77.

a marking analysis position. Within the existing methodology of museum evaluation, the actual data collection process followed six steps:

> "1. Defining the research problem. 2. Designing the research schemata and research planning (defining the number of respondents, the number of interviews, the location, selection criteria, and choice of the moderator, etc.). 3. Setting up the interviews (recruitment, preparation of the interview guide and research materials, e.g., projective techniques). 4. Conducting the interviews (moderating). 5. Analysis and interpretation of results. 6. Write-up of a report."[40]

In reflecting upon the time and resource constraints for this project, along with the director of exhibitions Dr. Paul Durica, I determined that interviews and focus groups would produce a realistic and productive data set. I chose to conduct both individual and group interviews as they serve different purposes. Individual interviews are best at collecting personal preferences and opinions, not influenced by others, they also often provide more in-depth information about "needs, motives, values" associated with potential barriers.[41] Group interviews on the other hand are best for "rich contextual material."[42] By engaging with multiple participants at a time, more generalized information can be gathered and new insights can be sparked by one group member hearing another's experience, providing a more complex answer.[43] I also chose to conduct a docent focus group, in order to provide a diverse data set through this mixed methodology.

Since Dr. Durica requested in-person interviews, the recruitment strategy entailed the interviewer (me) randomly approaching visitors asking "can I ask you a few questions about your experience in the exhibits? The survey will take roughly two minutes." If the visitor or visitor group agreed, the interview would commence. This is reflective of "convenience

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[40] Dominika Maison, *Qualitative Marketing Research Understanding Consumer Behaviour*, (New York: Routledge, 2019), 104.
[41] Maison, *Qualitative Marketing Research Understanding Consumer Behaviour*, 64 & 78.
[42] Mike Imms & Gill Ereaut, An Introduction to Qualitative Market Research, 78.
[43] Maison, *Qualitative Marketing Research Understanding Consumer Behaviour*, 64.

sampling" in marketing research.[44] This strategy is defined by how "participants are selected based on their accessibility and willingness to participate rather than their suitability for the research question."[45] Qualitative research often uses this approach to generate various perspectives and experiences. In the case of the docent participants, those participants were selected and organized by the volunteer and docent manager, Marne Bariso, as the focus group was limited to which docents were scheduled to volunteer on my predetermined data collection day and management gathered the present docents during their lunch break in the museum's café. The online survey was emailed to all 40 docents on staff.

Initial Research Questions

Once the project scope, methodology, and timeline were determined, I prepared a framework to scaffold my field observations based on my initial research questions:

1. Have the media activity inclusions in *Back Home: Polish Chicago* and *City on Fire: Chicago 1871* met the Chicago History Museum's learning and participation goals?
    a. What is the intended primary reach demographic and what group is primarily engaging with the media interactives currently?
2. Should media be implemented into *Chicago: Crossroads of America*?
3. What sub-exhibit of *Chicago: Crossroads of America* would benefit the most from a multimedia interactive activity?
4. What would this multimedia interactive provide that is not being provided for visitors already?
5. How can the exhibition team justify the cost of this type of update?

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[44] "Different Types of Sampling Techniques in Qualitative Research," Sago, https://sago.com/en/resources/blog/different-types-of-sampling-techniques-in-qualitative-research/
[45] "Different Types of Sampling Techniques in Qualitative Research," Sago, https://sago.com/en/resources/blog/different-types-of-sampling-techniques-in-qualitative-research/
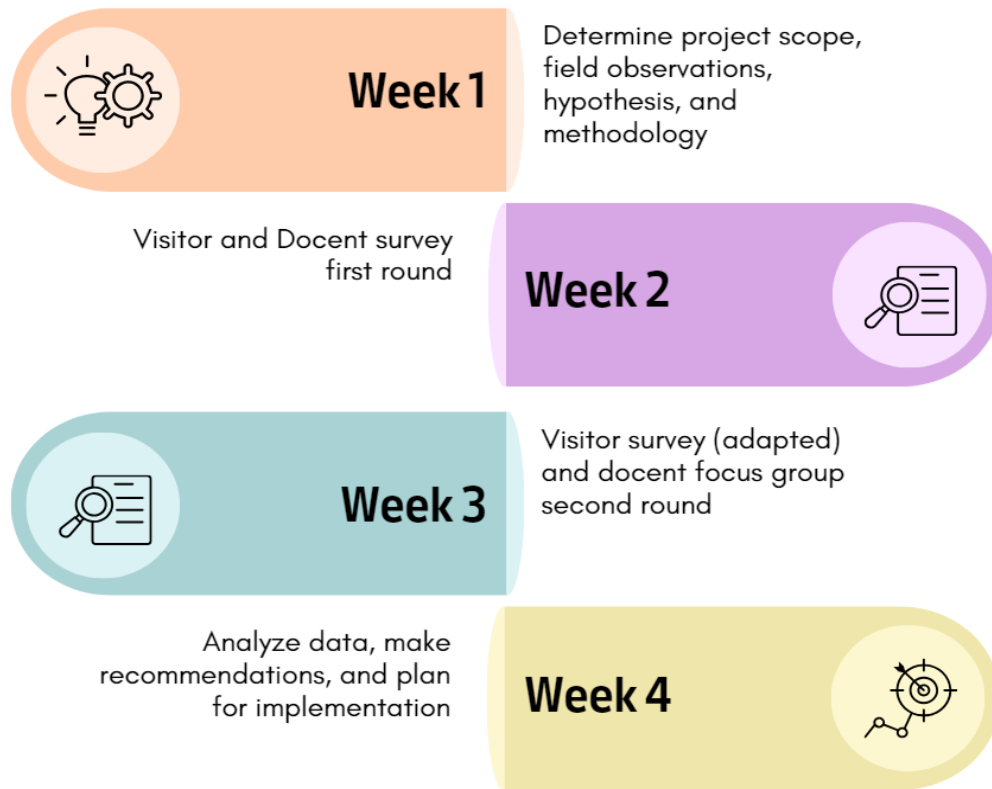
Figure 5: Timeline for Hybrid Data Collection

Initial Ethnographic Field Observations

My first in-person day at the museum focused on ethnographic field observations of both the exhibit's offerings and structures, visitor reactions, and perceived level of engagement/ enjoyment. My observations supported the department's previous conception of the state of all three of the exhibits under this project. I intentionally split up my time between three exhibits, *Chicago: Crossroads of America, Back Home: Polish Chicago,* and *City on Fire: Chicago 1871* so that I could gain a substantial understanding of the typical visitor engagement. I took handwritten notes on every media inclusion, making specific notes for the multimedia interactives in each exhibit. I used this opportunity to hold the intended educational/ experimental goals of the exhibits against observed outcomes in a multilayered analysis. With

the "Participatory Museum" model at the core of this project, I was very curious to observe the varied ways, duration, and verbal reactions that visitors expressed during my field observations.

Chicago: Crossroads of America

Tactile Interactives: Flip/ lift books, "Jazz Talk" lingo cards, and 4 IDEA station games facilitated by docents for school groups.

Media: audio (music, radio, and oral history) initiated by small buttons embedded in displays, video documentaries and newsreels, photo slideshows, and a recording of a History Channel Chicago sports quiz.

City on Fire: Chicago 1871

Media Interactives:

Welfare Application: A "choose your own adventure" style touchscreen activity puts the visitor in the role of a welfare aid applicant whose home was destroyed in the Chicago Fire. The visitor is tasked with making a variety of selections to "fill out" the application. Once they "submit" their application, the program informs the visitor of if their historic Chicagoan would have been given aid. It encourages the visitor to ponder the many struggles of post-fire Chicago.

The "Cyclorama": A primary source-based touch screen activity based on an 1893 painting depicting various scenes from the Chicago Fire. Through the activity, the visitor can zoom in on specific scenes and the program explains how that small depiction relates to the larger narrative of the fire. The audio, touch, and video work together to create the experience of chaos unfolding through this central event.

Shadow Puppet Background Screens: Throughout the exhibit, there are screens with shadow puppets dramatically telling the story of the fire chronologically alongside the text. This greatly adds to the mood of the entire exhibit.

Back Home: Polish Chicago

Oral History and Polish Music: Visitors select from a variety of bubbles that play music and oral history interviews audio. The visitor can filter the bubbles to view just music or just oral history audio. Both the music and oral histories range from recent to multiple generations in the past.

Genealogies/ Cultural Heritage: Visitors can submit photos to the shared gallery relating to their Polish ancestry and the Chicago immigrant experience. They are permitted to submit both photos and write descriptions. This exhibit activity more than any other that I observed provides the space for a personal feel that engages in the neighborhood community ideal.

Chicago-Polish Clubs: An interactive timeline of the creation of Polish cultural clubs in Chicago and a brief history of each. If the listed club is still active, a QR code is provided so that visitors can learn more.

Sending a Package Home: This animated activity allows visitors to select items to "send" back to Poland from three different periods. This not only highlights the importance of connection to one's homeland but the difficulty of shipping including the price, risk of inspection/ theft, and preservability.

There are also two photo slideshows of relevant photographic primary sources.

Observable roles of multimedia

Multimedia interactives allow visitors to physically rest while still engaging with the material. The current offerings are both attractive and stimulating. The "choose your own adventure" style touchscreen activities promote critical thinking through the agency of choice but do not require it. Fortunately, while I was making general observations of the City of Fire exhibit, a school group of fourth graders came into the exhibit for a tour, and I overheard a teacher chuckle to a colleague "They immediately go to the screens." I approached the teacher, briefly explaining my project, and asked her to expand on her comment. The teacher simply explained that her students have been raised in a world of screens and the only way that this generation will engage with museums is if they adapt to the media of the world.

Methodology for Creating Surveys

At the end of my first day, I met with Dr. Paul Durica to discuss my initial field observations, determine the scope and goals of my standardized questions, and agree on a project timeline. The conversation was focused on project design to ensure the most efficient use of my time possible. We determined that I would survey in person with open-ended questions and that I would create and conduct two separate surveys for visitors and docents over two days. Paul also requested that my deliverable not only include the data collection and analysis but also a recommendation for a possible multimedia interactive design for *Chicago: Crossroads of America.* My methodology for analysis of the data was in part quantitative, as it was through the recording and organizing of the survey responses into a simplified ratio of support versus opposition of this specific technological update to *Chicago: Crossroads of America* that influenced my conclusions about the preferences of the museum-visiting public. For a deeper

understanding, I drew connections and relevant concepts from the data set through a thematic framework of identifying shared key terms and noting their frequentness.

Hypothesis

My hypothesis before conducting any interviews was based on my initial field observations and my personal conceptualization of pedagogy in public history as a Chicago secondary educator with three years of progressive experience. Pre-data collection, I inferred that there would be a correlation between age and the endorsement of technological updates. That younger generations would be more attracted to multimedia interactives in exhibition design, and that older generations would prefer the traditional model of static visuals and text. I also hypothesized that although the responses would vary, the majority of the visitors and docents would support the multimedia interactive update at least as a way to provide a variety of experiential opportunities in the museum.

The proposed and completed data collection process was exempt from oversight by the University of Chicago's Institutional Review Board (IRB) due to the non-generalizability of the data collection and its analysis. This is due to the purpose of this research being for internal goals and outcomes specific to the client (The Chicago History Museum). All the human subjects were kept anonymous, only the perceived age and gender of the participants were included. The complete participant responses were provided to the client but is not included in this report.

Reasons for Survey Adaptations and Updated Surveys

Although the first visitor surveys provided interesting data, I decided to slightly adapt the questions set for the second visitor survey round. Also, due to unforeseen circumstances, the first docent interviews were combined into a focus group instead of the intended separate interviews,

so I decided to virtually send a simplified survey to the docent team via Google Forms so that I could track their individual answers.
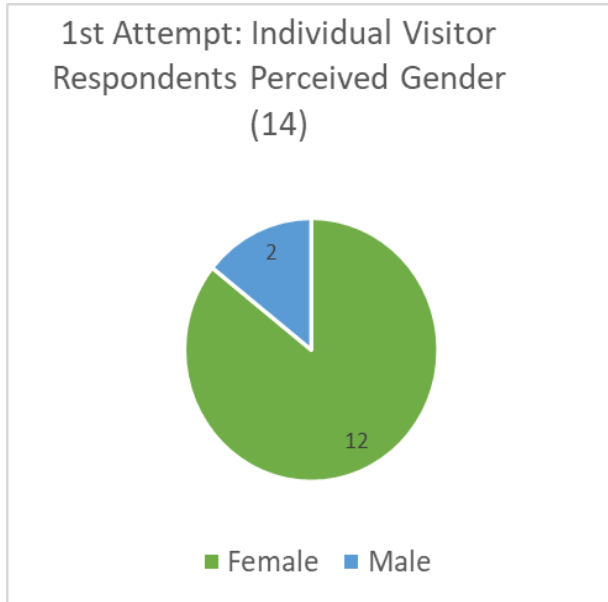
Results

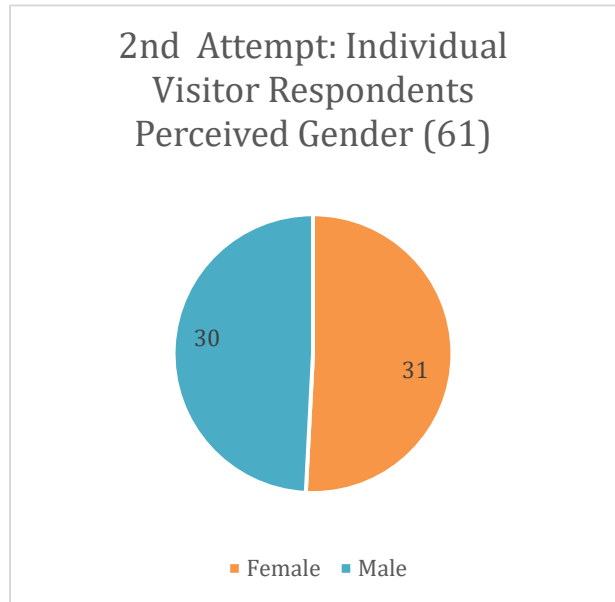1st Attempt: Individual Visitor Respondents Perceived Gender (14)

2
12

■ Female ■ Male

Figure 6: Respondent Chart 1

2nd Attempt: Individual Visitor Respondents Perceived Gender (61)

30
31

■ Female ■ Male

Figure 7: Respondent Chart 2

2nd Attempt: Individual Visitor Respondents Perceived Age (61)

5
14
23
19

■ Child (0-14) ■ Young Adult (15-25) ■ Adult (25-55) ■ Older Adult (55 and Up)
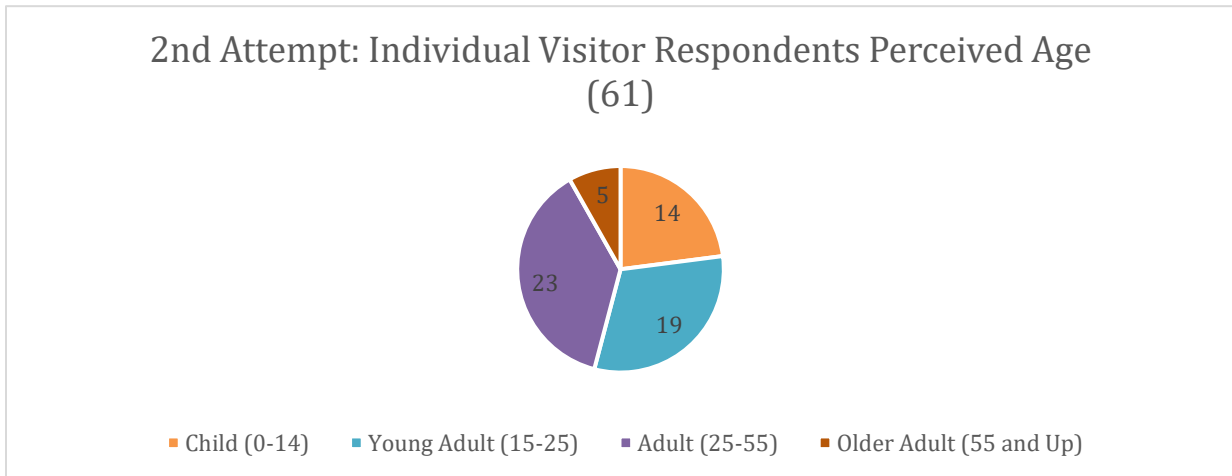
Figure 8: Respondent Chart 3

Group Visitors A & B Response: Would your experience in Chicago Crossroads of America improve if there were multimedia touchscreen interactive exhibits offered?
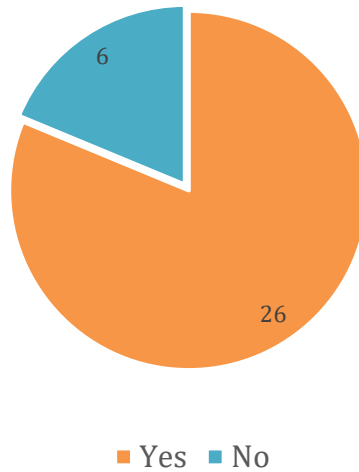
6

26

■ Yes ■ No

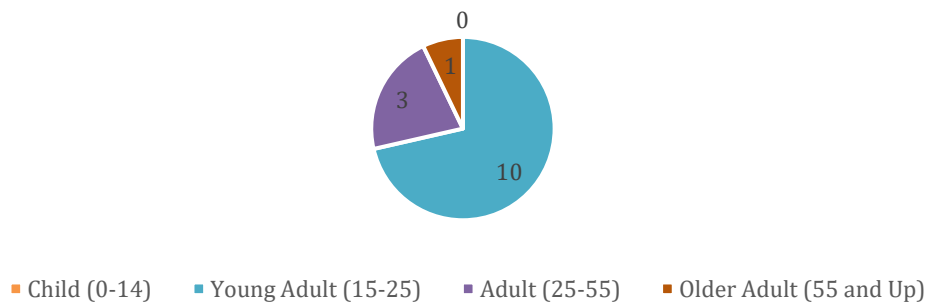## 1st Attempt: Individual Visitor Respondents Perceived Age (14)

0

1

3

10

■ Child (0-14) ■ Young Adult (15-25) ■ Adult (25-55) ■ Older Adult (55 and Up)

<center>**Qualitative Analysis of Data**</center>

With a thematic analytical framework at the center of my reflection, two sets of key terms were identified in the interviews and the focus group. The terms are [generational, young people, kids, and children] and [balance and variety]. Both groupings of similar terms allowed me to synthesize the diverse responses into comprehensible themes that can be applied to my recommendations for future design.

Visitor Survey A

With a limited sample size of seven groups with fourteen individuals, [generational, young people, kids, and children] was referenced twice and [balance and variety] was referenced twice. Within my first three interviews, my theory of the correlation between young people and media preference was disproven. Four of the five individuals who opposed the technological update claimed to be a part of either a high school or college. This response was surprising based on my preconceived understanding of age-tech preferences. These four young adults claimed that since their lives are already so saturated with media, they would be disappointed to not have museums as a place to disconnect. A female Columbia College Chicago student at the museum for a school project stated: "I go home and stare at screens. Media could be impactful to the youth. Media could be an addition, but not a replacement for existing content." This comment includes both of the core themes and provides evidence against the simple assumption that young people always prefer dense tech. Another young adult male commented "Balance is important, the touch screens improved experience. It is cool seeing the videos and multiple representations of the same story. The screens help relate more, nice to not have to read, a break from the (static) displays." In conclusion, five visitor groups supported the update and two did not.

Visitor Survey B

Visitor Survey B's sample size was much larger consisting of twenty-nine groups with sixty-one individuals. [Generations, young people, kids, and children] was referenced thirteen times and [balance and variety] was referenced nine times. The responses that included these terms seemed to value the larger impact of the exhibition design, as all individuals who commented on the positive impact of updated technology on children's education were adults. Also, many who commented on the variety that exhibition design can offer commented on how even though it may not be their preference, they support the update for the potential of mass enjoyment. For example, an adult man said, "The technology can be distracting, keep it classy. It would be good to integrate for children, I can see the point of it being good." This individual noted his preference for the traditional model but is aware that it could benefit others.

In full opposition to the screens in *City on Fire: Chicago 1871,* a young woman claimed, "I already spend a lot of time on my phone, I did not want to use the screens." On the other side of the preference spectrum, a young woman stated "The technology is 1000% productive. It is engaging and amazing at meeting learning goals", an adult man said that the media interactives are "Fun, they help learn in multiple ways", a young boy commented "They were more fun. You get a break from reading," an older woman purported that they are "Helpful, you can dive more in-depth", and finally, an adult woman claimed that "They would only add to the experience and they make it more inclusive. It also would make it easier to update information." Only referenced once was the opportunity for expanded inclusivity for those with disabilities by a young man who said "It can be a great educational tool, especially for those with disabilities." Although this was not a recurring theme, I believe that it should be a primary factor in all future exhibition designs.

Docent Focus Group A

Since the docent sample A ended up transforming into a round table/ forum conversation, my notes are not quantifiable. With that, I would like to mention some of the relevant responses, as they are still telling of the docents' initial thoughts instead of the online responses from sample B in which the docents had time to process their thoughts. One docent claimed that "the media (in the newer exhibits) is serving the visitors well. For instance, in Crossroads there is not as much to do." Another put it plainly, "Crossroads is dry." Towards the end of the conversation when I asked the group for their recommendations for the possible update, a docent argued that "The interactives need to challenge the visitors, not spoon-feed them." This theme of visitor critical thinking in their engagement with the multimedia was common in the forum. Most of the docents present felt that the only way that the update would be worth it is if they challenged the visitors to deeply reflect on the narrative that the museum is attempting to share instead of pure entertainment.

Docent Survey B (Google Form)

The Docents online survey received twelve anonymous responses and all twelve docent responders endorsed the multimedia interactive update to the *Chicago: Crossroads of America* exhibit. Although the survey included eight questions and one open comment section, three of the questions produced the most relevant responses regarding the general goal of this project. RQ1: *through your observation, are visitors more likely to be drawn to archival objects, text, video, or multimedia interactive displays*? Six docents voted for objects and one voted for multimedia interactives. RQ2: *currently, Chicago: Crossroads of America contains no multimedia interactive exhibits. Would the visitor experience in this exhibit improve if there were multimedia interactive activities offered? Why?* Two responses referenced the aspect of

personalization: "Probably improve as it might make aspects of Crossroads more relatable to some visitors" and "Only if the exhibit was updated and reflected their personal connections." Other responses focused on the engagement component for example "Certainly, interactive exhibits garner more interest and thought", and "Yes! This is our new era. When there are no volunteers around and while making a tour, it could be helpful. Also, some are curious, the touching that will bring more educational interest in our digital world." The final valuable theme referenced deepening the existing content as seen in "It could but that would depend on the content provided." Finally, I found RQ3 to be particularly important to ask the docents as they spend more time in Chicago: Crossroads of America than anyone else, staff included *Which area of the Chicago: Crossroads of America would benefit the most from updated multimedia interactive activities?* The most common recommendations that were referenced three times each are Early Days in "City on the Make", Mail Order Catalogs in "Second to None", and The 1893 World's Fair in "My Kind of Town". The Stockyards in "City in Crisis" and the Architecture of Skyscrapers in "Second to None" were also mentioned. One docent simply said "all".
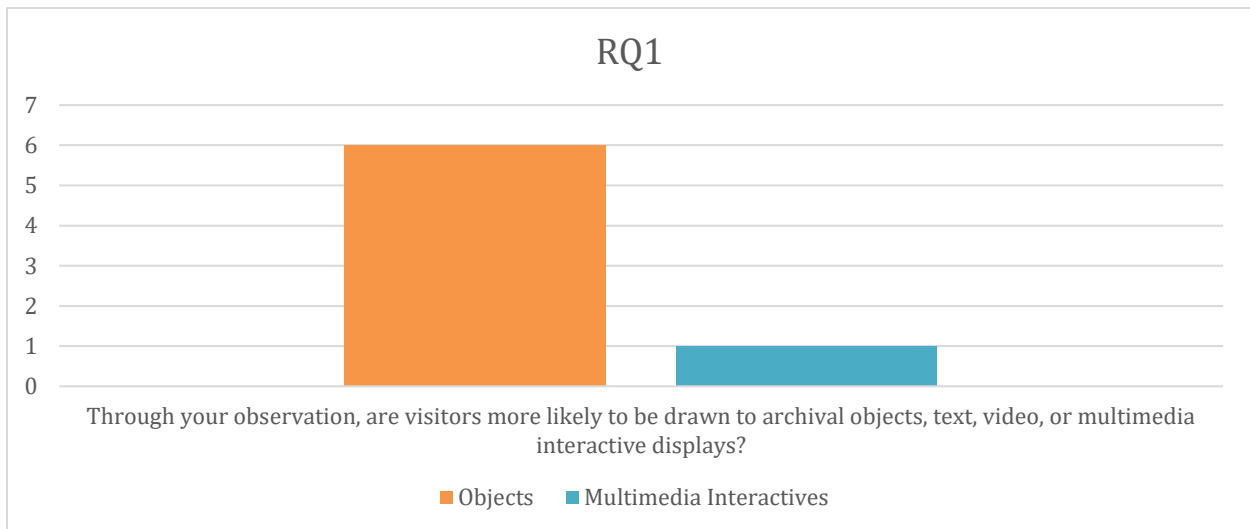
Figure 11: Research Question 1
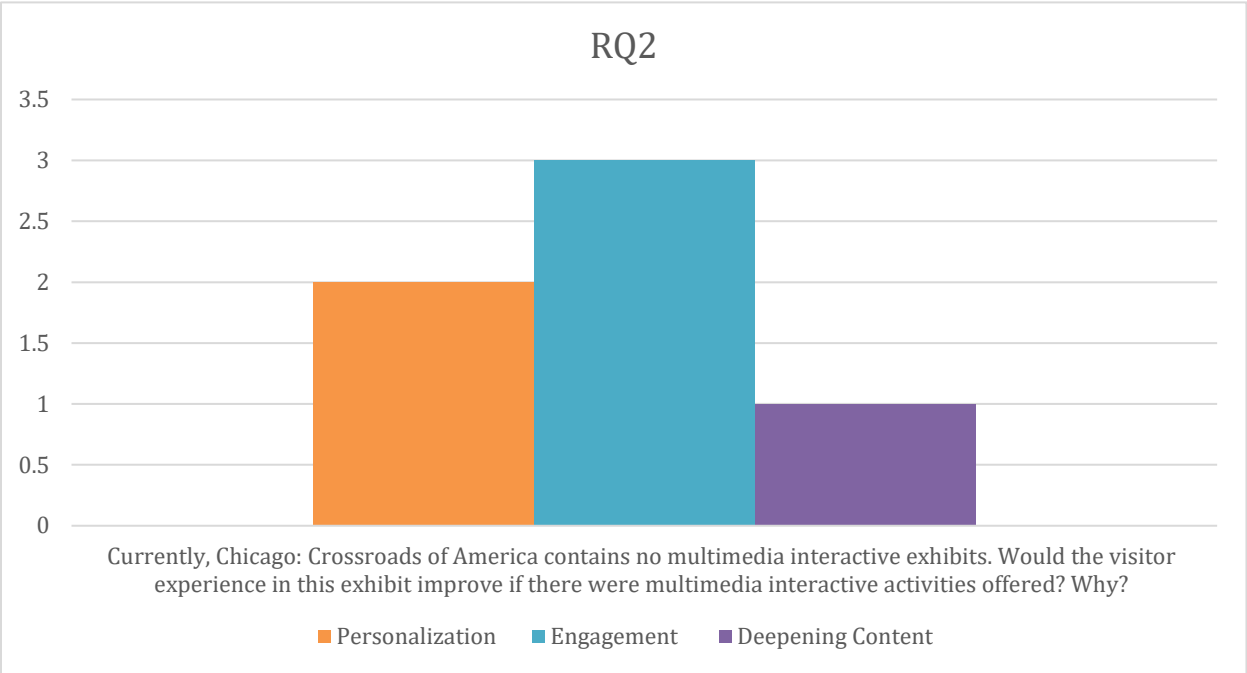
Figure 12: Research Question 2
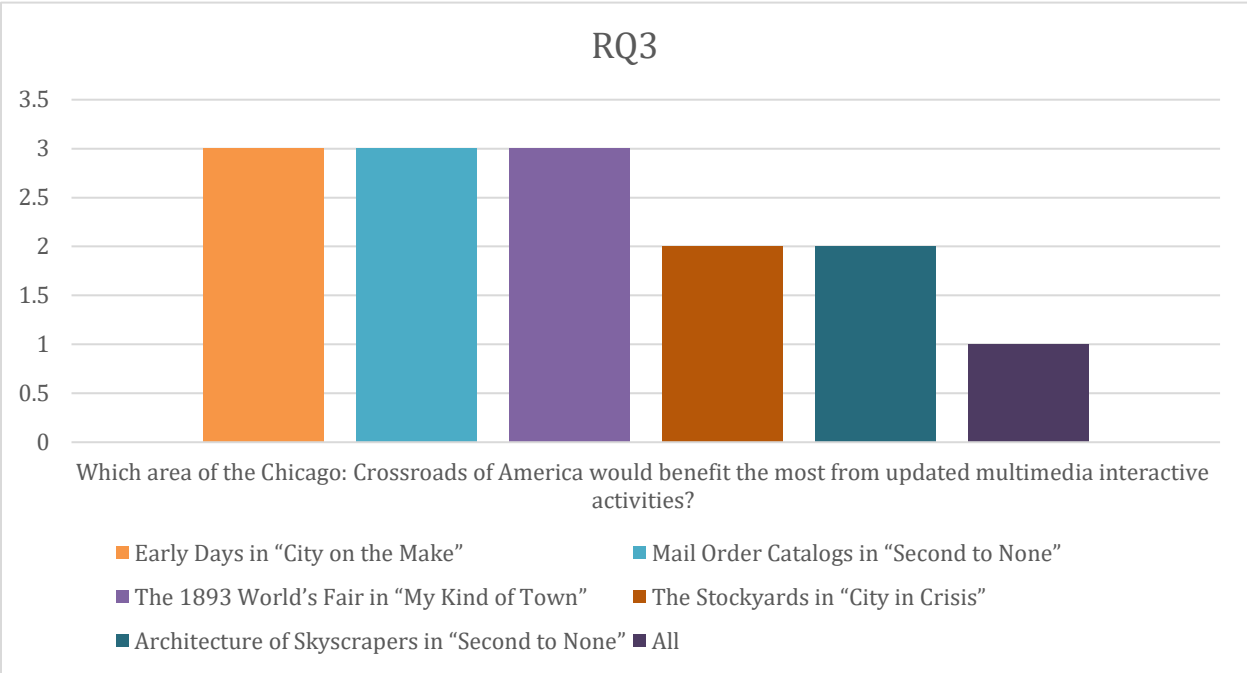
Figure 13: Research Question 3

Recommendations from Respondents (Visitors and Docents)

Throughout all interviews, both visitors and docents mentioned various recommendations and general comments that I feel should be mentioned. When it came to the existing multimedia interactives, multiple visitor groups mentioned their desire to be able to adapt the settings of the screens including the brightness and volume, as well as the implementation of skip-ahead and start-over options. Another larger structural issue was addressed when a visitor asked if there could be a way to funnel the sound so that the others in the area of the screen would not be distracted by the constant sound while trying to read the texts. A young boy mentioned how fun the Chicago sports "quiz" was in the *Chicago: Crossroads of America* exhibit, but he wishes that he could have been able to interact with it as if it were a real quiz. Finally, a visitor noted that in exhibition updates, they would like to see the old products of the catalogs, maybe in some activity that allowed the visitor to "purchase" the goods that taught the pricing and shipping process from that time.

Implications & Recommendations

In my experience, the central offering of museums lies with the institution's archival holdings and the critical analytic narrative that is communicated by professional historians. Hence, should the CHM exhibitions department determine that a multimedia interactive update proves useful if not necessary to the *Chicago: Crossroads of American* exhibit, I believe that the update should utilize the strengths of the organization, primary source engagement, and critical narrative. During my first in-person day at the Chicago History Museum, I identified this opportunity gap in the existing multimedia interactives and began to ponder how this element may serve a specific role in advancing the mission of the museum's exhibit department. Through my historical education background, I found the most impactful learning opportunities to be

those that are hands-on. Opportunities that allow the visitor to transform into the historian by participating in a multi-perspective open-ended analysis of historical objects that point towards not only the themes of the exhibit but that of the macro story of the museum. Therefore highlighted the museum's strengths.

I recommend that a technological update of this type would also support a non-intrusive design in its stimulating components such as factors of volume, brightness, and position. In respect of the numerous highlights in the data of "options" and "choice", a potential update needs to hold that not all visitors will choose to engage in the multimedia, and their choice needs to not be impeded by being in proximity to another visitor making a different choice. This can be avoided by including volume and brightness controls, adding structural sound funneling, so that the majority of the sound is directed at the user, and positioning the interactive technology still within the thematic space that the context correlates to, but not within direct high-traffic lanes allowing visitors to enjoy the existing text and tactics. To also accommodate diverse learners, I recommend including a closed captioning option.

This recommendation was inspired by an article titled "Put 3D Objects at Your Visitors' Fingertips: UVaM on the iPad" by the Institute for Dynamic Educational Advancement in collaboration with the University of Virginia Art Museum. [46] IDEA is an app design company focused on "leveraging game-based learning tools designed to significantly enhance critical thinking and problem-solving skills."[47] This article was authored in 2011, so the technology has certainly advanced since then, but the article provides an exemplar for this type of media update.

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[46] "Put 3D Objects at Your Visitors' Fingertips: UVaM on the iPad," Institute for Dynamic Educational Advancement, November 29, 2011, https://www.idea.org/blog/2011/11/29/put-3d-objects-at-your-visitors-fingertips-uvam-on-the-ipad/

[47] Institute for Dynamic Education Advancement, "Mission & History," IDEA website, accessed March 3, 2024, https://www.idea.org/blog/about/.

A primary source multimedia interactive similar to this model would allow visitors of the

Chicago History Museum to virtually interact with the objects of Chicago: Crossroads of

America in a fresh and reflective way.

The free app presents the mobile visitor with a grid of objects (below, left):

Tapping any object brings up a spinnable 3D detailed view (above middle). The visitor
can spin the object with their fingertip, or pinch to zoom in. Dragging up displays more
of the caption, and tapping the corners or the bottom selects other objects.

A brilliant feature (above right) is a display of wax seal from the rear side of a 17th
century Milanese painting. Wax seals are hard to make out clearly, but the app allows
the user to drag the light source. Moving the light reveals the contours of the wax seal
in a way that would otherwise be impossible. The visitor can see a two-headed eagle
clutching a sword in one talon, and a royal orb in the other.

Figure 14: Put 3D Objects at Your Visitors' Fingertips: UVaM on the iPad

Based on Docent Survey B, I recommend implementing this potential interactive in "Second to None", specifically highlighting the Mail Order Catalog section. I think that visitors would benefit from swiping, zooming in on, and analyzing both the advertisements and the products from this era. Our society is so entrenched in online shopping, that it would not only be an opportunity for personal connection, but illuminating themes like the invention of consumer culture, mass textile production, early marketing strategies, the mail system, pricing, and so much more. I recommend that the museum select 4-6 objects of relevance, including 3-D imaging of advertisements from the museum's vast holding from department stores like Sears, Roebuck and Co., Montgomery Ward and Co. in tandem with objects similar to those in the catalogs. To further adapt the University of Virginia Art Museum's model, I would also recommend adding a feature in which the visitor can press magnifying glass icons on various points of the object's image that will zoom in and explain the historical contextual significance of that specific detail to the object's interpretation. The existing Cyclorama interactive in City on Fire: Chicago 1871 contains a similar function.

Figure 15: "Second to None" Display in Chicago: Crossroads of America

Conclusion

I came into this project with my own preferences and vision for the future of technology in exhibition design, but even more so where I hope to see the field of public history adapt to the needs of the community it serves. Through my field observations, conversations with the department professionals, and the four sets of survey questions that interacted with between eighty-seven to ninety-five individuals, I learned a great deal about the museum visitor experience at large. For one, although visitor preference may be influenced by age and gender, those factors do not conclusively predict their preferences. I also was encouraged by how many responses referenced the impact of such an update outside of their personal experience, acknowledging that their preference may not align with what is best for the general public. I

37

hope that my analysis and the raw data that I gathered over my month-long project benefit the Chicago History Museum's Exhibition department as a grounding perspective of the visitor experience and preferences.

Limitations and Potential Future Study

This project was not without limitations. Due to time restraints and limited access to the Chicago History Museum's existing UX (user experience) data, the results are not as conducive as they could have been with a higher security clearance and a more flexible timeline. Given the opportunity, I would have altered various steps in the data-gathering process. The project would have benefited from one more collection technique alongside the existing surveys and focus group. With the approval of the client, I would have created both an online survey that could be accessed at the discretion of the visitor via a quick response (QR) code posted throughout the three relevant exhibits as well as a physical version to accommodate preferences. The primary limitation of the data that was collected is that the responses were recorded by the interviewer (me) by hand, therefore the subject's words were not represented in full accuracy. The independent survey option would remedy this issue of accuracy. I also believe that a visitor focus group would have been valuable to deepen the responses and provide a space for communal reflection among visitors of diverse demographics. UX data collection and analysis is crucial to the museum world as it ensures continual relevancy, and high engagement, and informs future decisions in exhibition design. The Chicago History Museum has displayed its value in utilizing qualitative research to refine its existing offerings and expand through the creation of new experiences, therefore this institution will remain a leader in Chicago's historical education.

Appendix

Visitor Survey (A)

1. How often do you visit museums per year?
2. What was the primary motivation of your visit?
3. Which exhibits did you experience today? (check all that apply)
   ___*Chicago: Crossroads of America* ___*Back Home: Polish Chicago*
   ___*City on Fire: Chicago 1871*
4. Did you interact with the multimedia touchscreen activities in either *Back Home: Polish Chicago or City on Fire: Chicago 1871?*
5. What did you enjoy most about the multimedia interactive touchscreen exhibits?
6. What did you least enjoy about the multimedia interactive touchscreen exhibits?
7. Currently, *Chicago: Crossroads of America* contains no multimedia interactive exhibits. Would your experience in this exhibit improve if there were multimedia interactive activities offered? Why?

Docent Focus Group (A)

1. How long have you been a docent at the Chicago History Museum?
2. What tours do you traditionally lead/ what exhibits do you interact with the most?
3. Through your observation, are visitors more likely to be drawn to material objects, text, video, or multimedia interactive displays?
4. What observations have you made of visitor interactions with the multimedia displays, what were their reactions? Mostly positive or negative? Explain.
5. What age groups seem to be the most drawn to the multimedia displays?
6. Currently, *Chicago: Crossroads of America* contains no multimedia interactive exhibits. Would your experience in this exhibit improve if there were multimedia interactive activities offered? Why?
7. Which area of the *Chicago: Crossroads of America* would benefit the most from updated multimedia activities?

Visitor Survey (B)

1. How often do you visit museums?
   Once a month __   2-3 Times a year__   Rarely__
2. What was the primary motivation for your visit?
   Education__ Entertainment__ School__ Other__
3. Which exhibits did you experience today? (check all that apply)
   *Chicago: Crossroads of America*__ *Back Home: Polish Chicago*__ *City on Fire: Chicago 1871*__
4. Did you interact with the multimedia touchscreen activities in either *Back Home: Polish Chicago or City on Fire: Chicago 1871?*
   Yes__ No__
5. What did you enjoy most about the multimedia interactive touchscreen exhibits?
6. What did you least enjoy about the multimedia interactive touchscreen exhibits?

7. Currently, *Chicago: Crossroads of America* contains no multimedia interactive exhibits. Would your experience in this exhibit improve if there were multimedia interactive activities offered? Why?

Docent Survey (A)

1. How long have you been a docent at the Chicago History Museum?
2. Do you primarily lead tours, operate the IDEA stations, or have another responsibility?
3. What second-floor exhibits do you interact with the most?
4. Through your observation, are visitors more likely to be drawn to archival objects, text, video, or multimedia interactive displays? Why do you think that is?
5. What observations have you made of visitor interactions with the multimedia interactive displays, what were their reactions? Mostly positive or negative? Explain.
6. What age groups seem to be the most drawn to the multimedia displays? Provide examples if applicable.
7. Currently, *Chicago: Crossroads of America* contains no multimedia interactive exhibits. Would the visitor experience in this exhibit improve if there were multimedia interactive activities offered? Why?
8. Which area of the *Chicago: Crossroads of America* would benefit the most from updated multimedia interactive activities?
9. Further Comments:

**Figures 16-37: Project Visual Presentation**
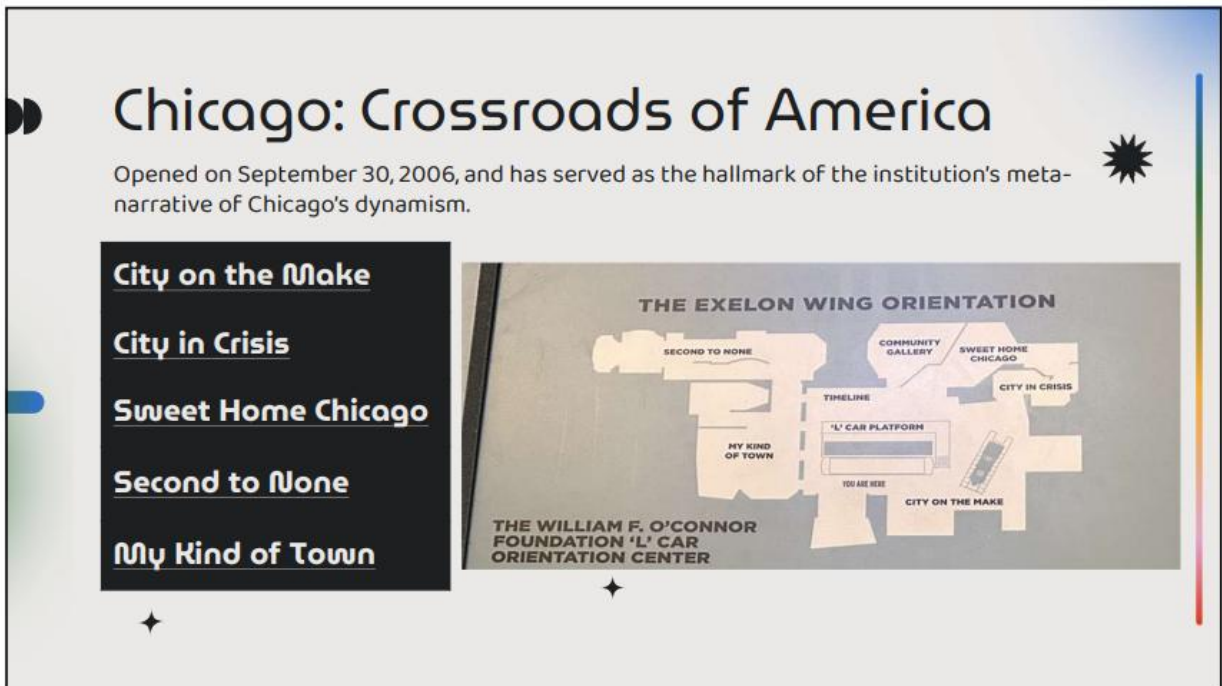
Current C:CA Interactives

- Tactile interactives:
  - Flip/ lift books and 4 IDEA station games facilitated by docents for school groups.
- Media:
  - Audio (music, radio, and oral history) initiated by small buttons embedded in displays
  - Video documentaries, newsreels, and photo slideshows

3

City on Fire: Chicago 1871

Back Home: Polish Chicago

Chicago Crossroads of America
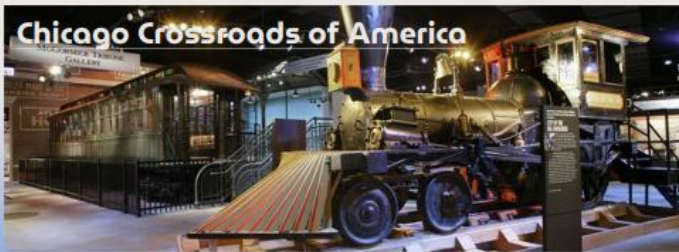
4

Core Research Questions

01

Have the multimedia interactive inclusions in Back Home: Polish Chicago and City on Fire: Chicago 1871 met the Chicago History Museum's learning and participation goals?

02

What sub-exhibit of Chicago: Crossroads of America would benefit the most from a multimedia interactive activity?

03

What would this multimedia interactive provide that is not being provided for visitors already?

04

How can the exhibitions team justify the cost of this type of update?

5

Methodology

The Participatory Museum by Nina Simon

Evaluating impact:
- stating your goals
- defining behaviors and outcomes that reflect those goals
- measuring or assessing the incidence and impact of the outcomes via observable indicators
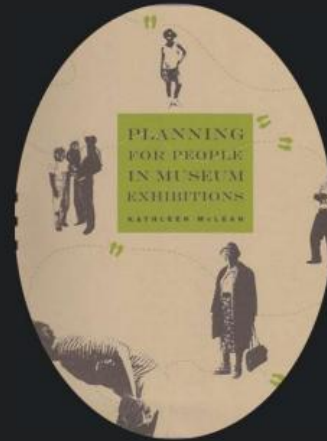
Methodology

Kathleen McLean's types of exhibition evaluations

Audience research: asks, who does and does not come to museums and why do they or do they not come? Examined through visitor surveying and standardized. questionnaires .

Front-end analysis

Formative evaluations

Summative evaluation: asks if the originally intended learning, process, and behavioral goals differ from those present. Uses pre and post questionnaires, and visitor observations.

PLANNING FOR PEOPLE IN MUSEUM EXHIBITIONS
KATHLEEN McLEAN

7

Visitor Survey (A & B)

|	
How often do you visit museums per year?	How often do you visit museums? Once a month __ 2-3 Times a year__ Rarely__
What was the primary motivation of your visit?	What was the primary motivation of your visit? Education__ Entertainment__ School__ Other__
Which exhibits did you experience today? (check all that apply) ___Chicago: Crossroads of America ___Back Home: Polish Chicago ___City on Fire: Chicago 1871	Which exhibits did you experience today? (check all that apply) ___Chicago: Crossroads of America ___Back Home: Polish Chicago ___City on Fire: Chicago 1871
Did you interact with the multimedia touchscreen activities in either Back Home: Polish Chicago or City on Fire: Chicago 1871?	Did you interact with the multimedia touchscreen activities in either Back Home: Polish Chicago or City on Fire: Chicago 1871? Yes__ No__
What did you enjoy most about the multimedia interactive touchscreen exhibits?	What did you enjoy most about the multimedia interactive touchscreen exhibits?
What did you least enjoy about the multimedia interactive touchscreen exhibits?	What did you least enjoy about the multimedia interactive touchscreen exhibits?
Currently, Chicago: Crossroads of America contains no multimedia interactive exhibits. Would your experience in this exhibit improve if there were multimedia interactive activities offered? Why?	Currently, Chicago: Crossroads of America contains no multimedia interactive exhibits. Would your experience in this exhibit improve if there were multimedia interactive activities offered? Why?

Docent Survey/ Forum (A & B)

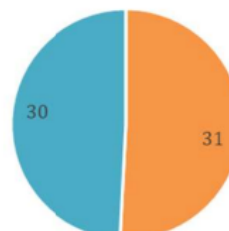|	
How long have you been a docent at the Chicago History Museum?	How long have you been a docent at the Chicago History Museum?
What tours do you traditionally lead/ what exhibits do you interact with the most?	Do you primarily lead tours, operate the IDEA stations, or have another responsibility?
Through your observation, are visitors more likely to be drawn to material objects, text, video, or multimedia interactive displays?	What second-floor exhibits do you interact with the most?
What observations have you made of visitor interactions with the multimedia displays, what were their reactions? Mostly positive or negative? Explain.	Through your observation, are visitors more likely to be drawn to archival objects, text, video, or multimedia interactive displays? Why do you think that is?
What age groups seem to be the most drawn to the multimedia displays?	What observations have you made of visitor interactions with the multimedia displays, what were their reactions? Mostly positive or negative? Explain.
Currently, Chicago: Crossroads of America contains no multimedia interactive exhibits. Would your experience in this exhibit improve if there were multimedia interactive activities offered? Why?	What age groups seem to be the most drawn to the multimedia displays?
Which area of the Chicago: Crossroads of America would benefit the most from updated multimedia activities?	Currently, Chicago: Crossroads of America contains no multimedia interactive exhibits. Would your experience in this exhibit improve if there were multimedia interactive activities offered? Why?
	Which area of the Chicago: Crossroads of America would benefit the most from updated multimedia activities?
	Further Comments:

9

Visitor Participants

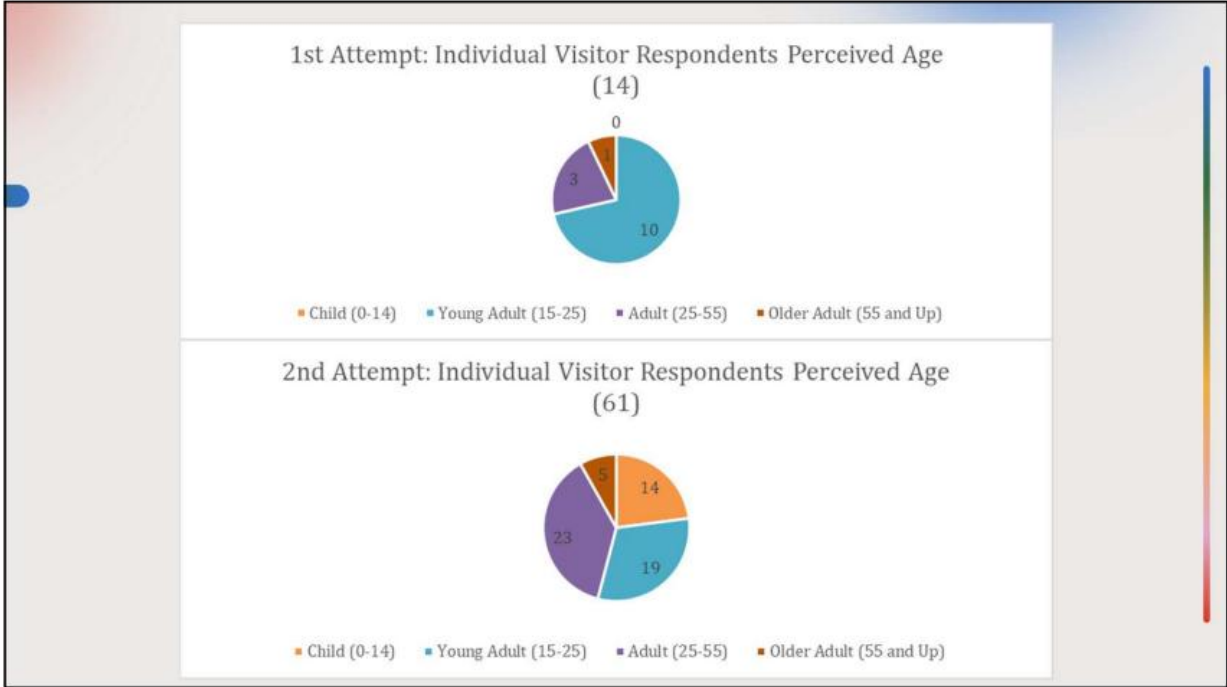### 1st Attempt: Individual Visitor Respondents Perceived Gender (14)
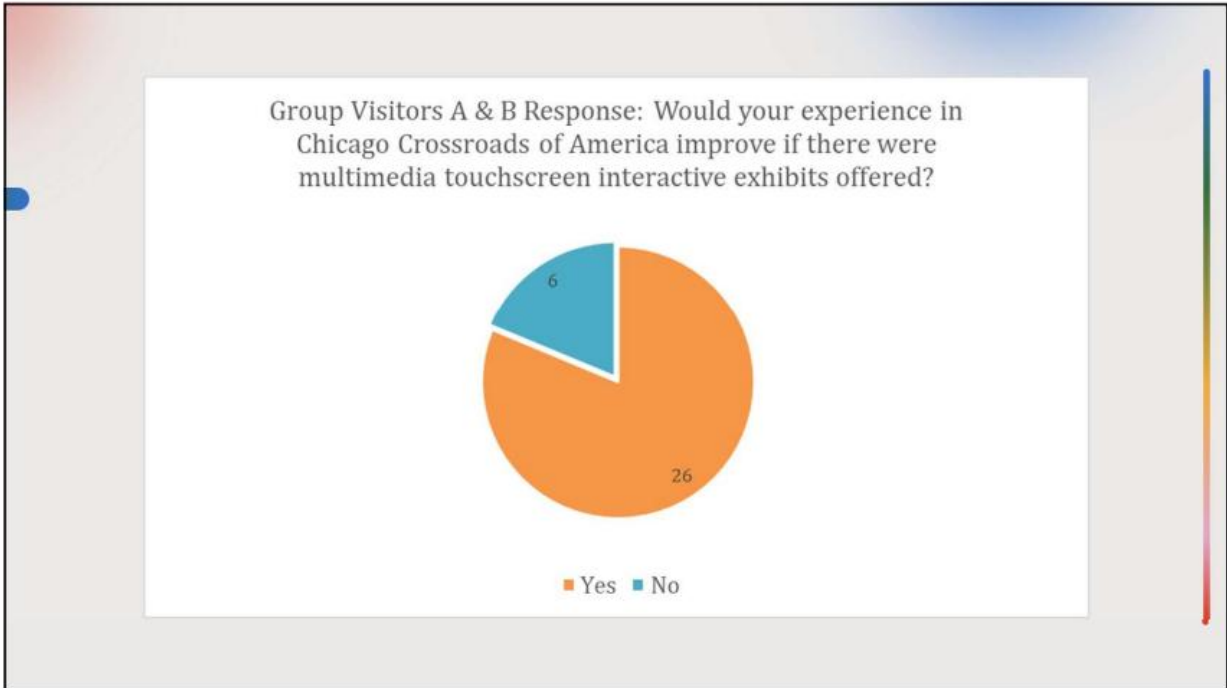

2
12
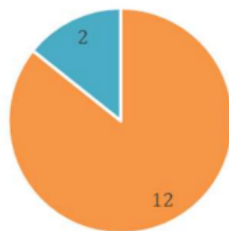
■ Female ■ Male

2nd Attempt: Individual Visitor Respondents Perceived Gender (61)

30
31

■ Female ■ Male

1st Attempt: Individual Visitor Respondents Perceived Age (14)

2nd Attempt: Individual Visitor Respondents Perceived Age (61)

11

Group Visitors A & B Response: Would your experience in Chicago Crossroads of America improve if there were multimedia touchscreen interactive exhibits offered?

46

Visitor groups A & B Quotes

"Balance is important. It is cool seeing the videos and multiple representations of the same story."
— Young Adult Male (A)

"I go home and stare at screens. Media could be impactful to the youth. Media could be an addition, but not a replacement for existing content."
—Young Adult Female (A)

"They were more fun. You get a break from reading."
— Young Boy (B)

"I already spend a lot of time on my phone, I did not want to use the screens."
— Young Adult Woman (B)

"It can be a great educational tool, especially for those with disabilities."
— Young Adult Man (B)

"Helpful, you can dive more in-depth."
— Older Adult Woman (B)

13

Docent A Quotes

How can we challenged the visitors to deeply reflect on the narrative that the museum is attempting to share instead of pure entertainment?

"The media (in the newer exhibits) is serving the visitors well. For instance, in Crossroads there is not as much to do."

"The interactives need to challenge the visitors, not spoon-feed them."

"Crossroads is dry"

Docent B (Google Form) Quotes

Would the visitor experience in this exhibit improve if there were multimedia interactive activities offered? Why?	Which area of the Chicago: Crossroads of America would benefit the most from updated multimedia interactive activities?
"Probably improve as it might make aspects of Crossroads more relatable to some visitors"	Early Days in "City on the Make": 3
"Only if the exhibit was updated and reflected their personal connections."	Mail Order Catalogs in "Second to None": 3
"Certainly, interactive exhibits garner more interest and thought."	The 1893 World's Fair in "My Kind of Town": 3
"Yes! This is our new era. When there are no volunteers around it could be helpful. The touch screens will bring more educational interest in our digital world."	All: 1

15

Methodology: Thematic Analysis

- Identifying shared key terms and noting their frequentness.
- Numerically recording the radio of support versus opposition of the update.

generational/ young people/ kids/ children
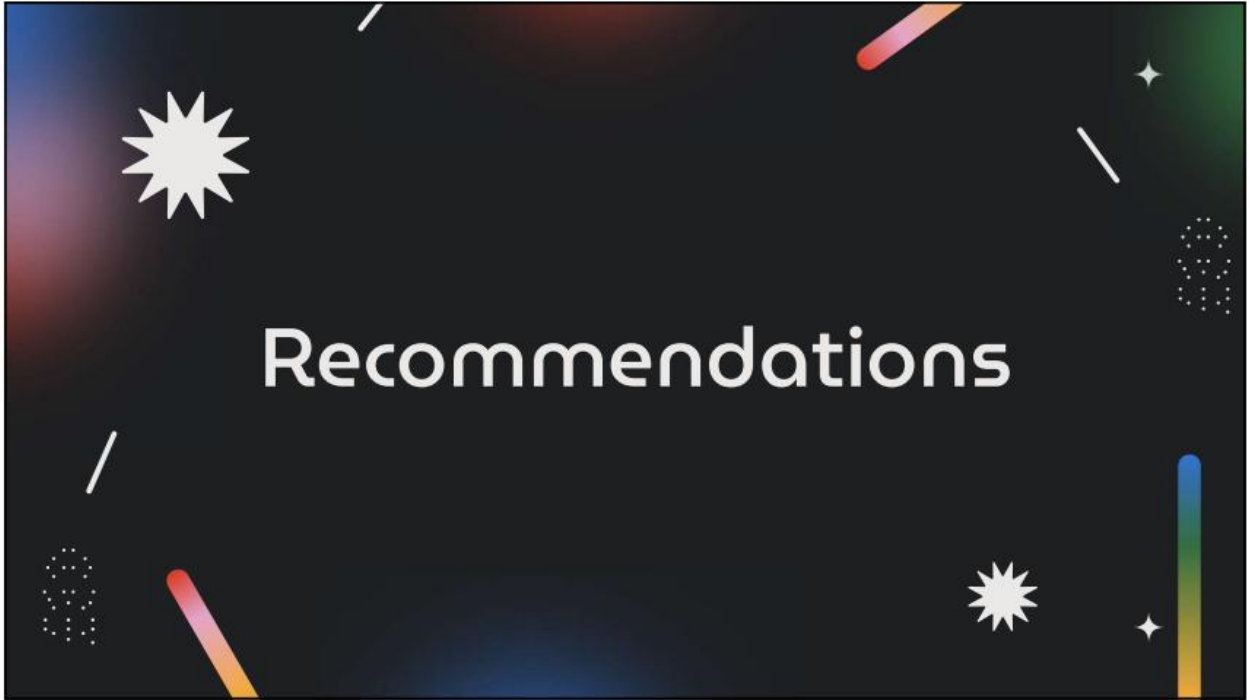Survey A: 2
Survey B: 13

balance/ variety
Survey A: 2
Survey B: 9

1909

Recommendations

Archival holdings and analytic narrative

Primary Source engagement: How to transform the visitor into the historian

Mail Order Catalogs in "Second to None"
- Consumer culture
- Mass textile production
- Early marketing strategies
- The mail system
- Pricing
- Ect.

UVaM on the iPad

by the Institute for Dynamic Educational Advancement in Collaboration with the University of Virginia Art Museum

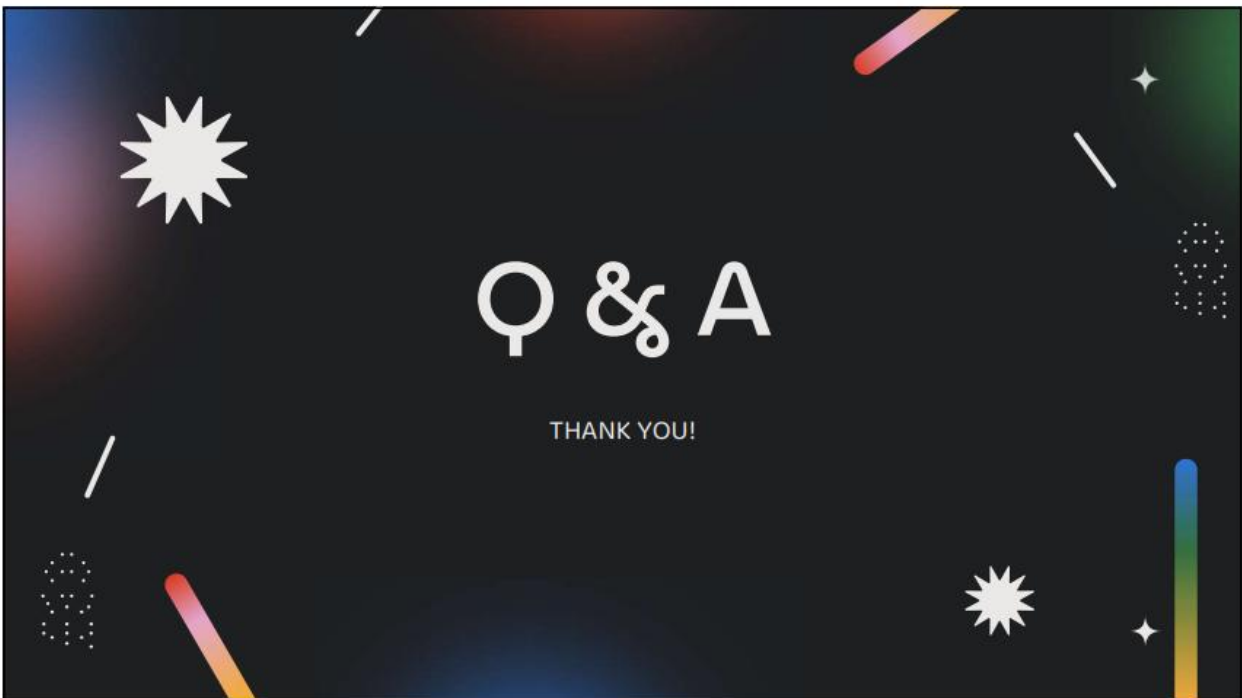The free app presents the mobile visitor with a grid of objects (below, left):

Tapping any object brings up a spinnable 3D detailed view (above middle). The visitor can spin the object with their fingertip, or pinch to zoom in. Dragging up displays more of the caption, and tapping the corners or the bottom selects other objects.

A brilliant feature (above right) is a display of wax seal from the rear side of a 17th century Milanese painting. Wax seals are hard to make out clearly; but the app allows the user to drag the light source. Moving the light reveals the contours of the wax seal in a way that would otherwise be impossible. The visitor can see a two-headed eagle clutching a sword in one talon, and a royal orb in the other.

19

Q & A

THANK YOU!

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