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The Museum Wiki: A Model for Online Collections in Museums

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by
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Abstract

Museums increasingly use the Internet, digitization, and **social tagging** to publicize their collections in online databases. However, these **online collections** museums frequently lack contextual and interpretive information that objects require to be understood by the general public. Other sources, such as **Wikipedia**, consistently deliver more in-depth information on artworks than museums. **The Museum Wiki** proposes a solution for the **Museum Studies** field to address this information gap by emulating Wikipedia's framework of interlinked articles for online museum collections. Additionally, this model raises the online visibility of these collections by editing relevant Wikipedia articles with information from articles written for the museum's collection. These Wikipedia edits are then cited back to the museum website to drive visitors to the collection. The Museum Wiki uses the **Haggin Museum** in Stockton, CA to pilot the project with its collection of **Albert Bierstadt** paintings.

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Acknowledgements

I would like to thank my family for their incredible support. I would also like to thank all of my friends, professors, and classmates.

Chapter 1: Introduction

The Museum Wiki is designed to improve the depth and availability of information in museums' online collections. Many museums showcase their collections in searchable online databases. However, these online collections fail to provide in-depth context and interpretation to the objects they display; most collections offer only basic levels of identification. Without proper context to accompany these objects, online collections fail to serve as adequate research sources and provide only shallow viewing experiences.

The detail of information in online museum collections frequently pales in comparison to other available online resources. Even museums such as the Louvre, which offers entries for the most famous paintings in its online collection, cannot compete with other sources. The museum's entry for the Mona Lisa is 600 words (Mona Lisa, 2016), while Wikipedia's entry boasts a 4,000 word description (Mona Lisa – Wikipedia, 2016). Museums need to address this information gap to justify their status as valuable educational and research institutions.

As museums continue to build online platforms, their collections will become increasingly important tools for public access, research, and community engagement. The Museum Wiki presents a public research database model that accomplishes these goals by emulating Wikipedia's interlinked articles on museums' online collections. This model uses Wikipedia itself to improve the collection's online profile by editing Wikipedia pages and citing the host museum's website as a source. This strategy drives researchers to the museum's website and inserts the collection into more mainstream paths of information flows.

The model proposed in this project is intended to be implemented at the Haggin Museum in Stockton, CA, with its collection of paintings by Albert Bierstadt. The project serves as a pilot

program for The Museum Wiki's goals on a small scale. Although this project is intended to serve a specific institution, its core elements and ideas can be tailored to other small museums.

By adopting The Museum Wiki, the Haggin Museum can improve the public's access to its collection, facilitate exploration of its collection, and drive researchers to the museum's website. Museums represent a unique set of organizations that the public overwhelmingly views as trustworthy sources of information (Griffiths, 2008). The Museum Wiki harnesses that trust to offer researchers a convenient, credible, and effective resource for understanding a museum's collection and objects' historical context. The goals of this project provide a framework to develop content for online museum collections and serve as an extension of museums' goals to make collections accessible to the public.

This capstone paper explores many facets of The Museum Wiki. First, I review relevant literature regarding museums' attempts to engage audiences online through their collections. In the past decade, museums have experimented with various strategies to publicize their collections including social tagging and Wikipedia integration. This interest in online engagement reflects a transition from museums' unilateral curatorial authority to a more participatory model. Second, I explain the scope of The Museum Wiki and its importance to the museum field. This project is designed for implementation at the Haggin Museum. The project uses the museum's collection of paintings by Albert Bierstadt to pilot its goals and procedures.

Third, I present an action plan for The Museum Wiki's implementation at the Haggin Museum. The project will be implemented over a six month period and requires cooperation from the museum's marketing team, education department, and a team of volunteers. Finally, I review metrics for the project's success and explain how the Haggin Museum can expand its scope in the future.

Chapter 2: Review of Literature

Introduction

Museums are finally making their collections accessible through online databases and websites. Although digitization is a time and labor intensive process, hundreds of museums now have their collections more accessible to the general public than ever before. In the past, museums could "only display between one and five percent of their collections at a time" (Tam, 2015, p. 34). Online access now allows collections to be viewed year-round. As online collection tools become the new norm, museums are looking for ways to engage visitors with their collections, improve online awareness of their collections, and build a participatory environment that facilitates the exchange of knowledge.

The proliferation of online collections coincides with the rise of the Information Age. Despite the benefits of digitization, rapid technological development has undermined many of the competitive advantages museums have enjoyed over the past hundred years. The Internet has disrupted museums' previously unchallenged power to interpret culture and history through their collections. As the designated protectors of society's most valued objects, museums had developed a respected voice to disseminate knowledge to the public. Museums were the easiest places to see and learn about art, natural history, and archaeology. In many cases, museums were the only places to see these things.

Museums are still held in high regard throughout the world. However, people no longer receive their information from a single source. The Internet facilitates learning and knowledge-sharing through an environment that "encourages collaboration, sharing, and digital engagement" (Phillips, 2013, p. 219). Open-sourcing and crowdsourcing have paved the way for this revolution by enabling millions of people to contribute to software development and online

content creation. Museums must learn from this revolution and its technologies to offer relevant online experiences that resonate with audiences.

Museums and Social Tagging

One of the main developments in online collections has been the implementation of Web 2.0 technologies. Web 2.0 designates a new stage of internet development that precipitates the "distributed, open-sourced, grass-roots involvement of web users" (J. Becvar, K. Becvar, Boast, Srinivasan, 2009, p. 270). The popularity of Wikipedia, Google Maps, YouTube, and other websites has been defined by their insistence upon letting users contribute content for others to view. "Museum 2.0" is an ongoing trend in which museums have adopted this philosophy and focused on encouraging communities to socialize with museums and each other (J. Becvar, K. Becvar, Boast, Srinivasan, 2009, p. 271). This push for inclusivity is a remarkable development for museums that have long received criticism for serving as restrictive "gatekeepers of knowledge" (Cairns, 2013, p. 107). Museums that once disregarded or ignored opinions from average people now welcome their feedback.

Social tagging is a prime example of this participatory element. Social tagging is a practice that allows "members of the public to tag digital objects in their collections with descriptive keywords, a practice that is like adding a label or description to a photograph" (Cairns, 2013, p. 109). Keywords are selected, shared, filtered, and vetted through online discourse that allows participants to engage with museum collections in their own vocabulary (Chae & Kim, 2011, p. 133). This system allows museums to collect valuable metadata that explains how the general public interprets and classifies artwork. Metadata, or data about data, optimizes search engines and allows people to discover items in a collection quickly and easily.

Although metadata was originally used in commercial search engines and social media outlets, it has also been useful in museum collections (Chae & Kim, 2011, p. 133).

Steve: The Museum Social Tagging Project highlights this success. By collaborating with museums throughout the country including the Metropolitan Museum of Art and the San Francisco Museum of Modern Art, this project revealed that "86 percent of terms provided by taggers were not found in museum documentation…[and] museum staff felt that 88 percent of taggers' terms would be useful for searching" (Cairns, 2013, p.110). Social tagging is useful precisely because the contributed knowledge comes from the public. This pool of knowledge builds up a "folksonomy" of informal and responsive terms that transcend traditional curatorial thought.

For example, in the Powerhouse Museum's online collection, a stuffed animal toy of cartoon character Sylvester the Cat has been tagged by users as "puddy tat." Although this reference to the character's counterpart, Tweety Bird, is a departure from more formal academic descriptors, this tag allows searchers to "easily make the semantic connection between this object and its user keyword" (Chan, 2007). Previously, curators assumed that artworks "belonged to exclusive categories and were studied and interpreted within these categories" (Chae & Kim, 2011, p. 136). Publicly sourced knowledge allows museums to learn about their collections by deviating from the standard "wall of authoritative museum knowledge" (Chae & Kim, 2011, p. 136). Tagging allows museums to learn about their collections through colloquialisms and social context that might otherwise be lost.

The implications of social tagging extend beyond self-referential online databases. Thinkers in the museum field also believe this knowledge can be used to inform curation strategies and better link the general public's thoughts and opinions with exhibitions (Chae &

Kim, 2011, p. 136-137). This data can also be used as a form of surveying to understand how viewers across different demographics perceive artworks (Chae & Kim, 2011, p. 137). Other museums, such as the Art Institute of Chicago and the Louvre, allow website visitors to use social tagging to build personalized digital collections (Marty, 2011, p. 211).

Social tagging has also received a fair share of criticism. Because tags are created and viewed without any context, it may be difficult to discern why a given tag was assigned to an artwork. Tagging systems may also be subject to spam and slang that undermines their usefulness (Chae & Kim, 2011, p. 138). Research also suggests that website visitors simply are not interested in using tags to create personalized collections because of their isolation from other collections. These systems do not cross-cut institutions; an individual cannot create a single collection that draws upon the collections of multiple museums (Marty, 2011, p. 217). Finally, when museums incorporate social tagging into their websites, they co-opt systems perfected by websites such as Flickr and Facebook. Critics emphasize that it is important that "museums…do not become lost in a sea of social computing" (Marty, 2011, p. 218) by trying to emulate platforms with different purposes. Platforms like Flickr Commons address some of these concerns by allowing historical organizations to upload their images to the website and encouraging individuals to tag items. However, this strategy means that museums yield control of their images to the public. These issues of control and transparency raise concerns regarding copyright and intellectual property (Marty, 2011, p. 218). As museums integrate their collections online and collaborate with other organizations, these issues will become even more complex to navigate.

Museums and Wikipedia

Museums are also challenged by how to present and interpret digitized objects online. Although the consensus among museum professionals is that "simply making [collections] available [does] not necessarily make [them] more accessible or engaging" (Cairns, 2013, p.110), most museums have failed to move beyond this basic level of online access. Instead, external websites have stepped in to bridge the gap between access and interpretation. The most popular of these resources is Wikipedia. Wikipedia is a public encyclopedia with a decentralized power structure. When it was founded in 2001, any of its readers could edit its content. While this openness is still a major part of the organization, the Wikipedia community has since developed "an inner hierarchical structure based on meritocracy" (Staub & Hodel, 2015, p. 15). The website features various editing rules and principles, all of which are guided by the following fundamental "pillars" (Wikipedia: Five Pillars, 2016):

1. Wikipedia is an encyclopedia.
2. Wikipedia is written from a neutral point of view.
3. Wikipedia is free content that anyone can use, edit, and distribute.
4. Editors should treat each other with respect and civility.
5. Wikipedia has no firm rules.

Contributors that fail to meet these standards have their content overwritten or erased by various watchdogs and page managers (Staub & Hodel, 2015, p. 15). Wikipedia has been criticized for its decentralized structure and frequently demonized in academic communities as being unfit for serious research. Academia tends to view Wikipedia with skepticism on the grounds that it "[fails] any quality analysis due to its sketchy authority" (Phetteplace, 2015, p. 109). Wikipedia nonetheless remains the sixth most popular website in the world with over 30 million articles available in hundreds of languages (Galloway & DellaCorte, 2014, p. 85). Additionally, the encyclopedia's accuracy compares favorably to more socially accepted

contemporaries such as Encyclopedia Britannica (Staub & Hodel, 2015, p. 17). In the past few years, the website has gained acceptance as a "convenient entry point for research [that] gives a valuable introduction to a given subject matter" (Staub & Hodel, 2015, p. 17). While Wikipedia is still not valued as an academic research source, it has value as a learning resource to launch deeper discussion and research.

Museums and libraries have recognized this value and have experimented with Wikipedia editing projects to boost the online profile of their collections. University libraries in particular have launched various Wikipedia initiatives and typically use student volunteers to perform edits (Galloway & Dellacorte, 2014; Elder, Westbrook & Reilly, 2012; Lally & Dunford, 2007; Pressley & McCallum, 2008). For example, student volunteers at the University of Pittsburgh needed to learn the Mediawiki software platform for Wikipedia as well as adapt their writing and research strategies to meet Wikipedia's standards (Galloway & Dellacorte, 2014, p. 89). Wikipedia's No Original Research policy, which requires all content be "attributable to a reliable, published source" (Wikipedia: No Original Research, 2016), was difficult for students to comply with because of the library's considerable archive of unpublished primary sources (Galloway & Dellacorte, 2014, p. 90). Pittsburgh students worked around this restriction by citing materials published by their university that referenced materials from the library's collection. Instead of linking articles directly back to the collection, students "created opportunities for driving more web traffic to [library] content" (Galloway & Dellacorte, 2014, p. 90). Although the methods used to work around Wikipedia's standards were tedious, the results have proven positive for these libraries as website analytics have indicated increases in web traffic linked from Wikipedia (Galloway & Dellacorte, 2014; Elder, Westbrook & Reilly, 2012; Lally & Dunford, 2007; Pressley & McCallum, 2008).

Museums' efforts to directly collaborate with Wikipedia have yielded mixed results and contentious relationships. From 2013 until 2014, Wikimédia France collaborated with the Pompidou Centre in Paris to produce over 50 articles for Wikipedia in six months. The museum organized two groups to edit pages concerning art that the museum exhibited. The first group was comprised of a general audience that attended workshops "concentrated on an introduction about how to use Wikipedia…followed by a second series devoted to the editing of the articles" (Machefert, 2015, p. 36). The second group targeted the museum's scholarship students and contributors to the museum's exhibition catalogues. This group aimed to "improve articles about past exhibitions that had been held by the Pompidou Centre's Musée national d'art moderne" (Machefert, 2015, p. 36).

The first group created 15 articles, well short of the project goal. Machefert (2015, p. 36) cited many problems with this group that hampered its production such as members' difficulties in learning the Mediawiki software. This group also lacked consistent attendance and was marked by dwindling participation over time. Although this group improved the sizes of existing articles by an average of 5,000 characters, this absolute gain was diminished by the project's cumulative length of 40 hours (Machefert, 2015, p. 36). The second group of scholarship students saw much higher levels of participant retention. Despite having only 16 total hours devoted to this group, the project yielded significantly greater returns with contributors producing an average of 61,000 characters. Members of this group were much more homogenous in regards to their software proficiency (Machefert, 2015, p. 36). The study concluded that while the edited Wikipedia articles were improved, "the investment of time by the Centre's personnel and the [contributors] seems out of proportion to this enrichment" (Machefert, 2015, p. 37-38). It

was unclear if the museum would consider continuing the project due to its concerns with efficiency and time investment.

Other interactions between museums and Wikipedia highlight the legal implications of digitization as well as the conflicting priorities of the respective institutions. London's National Portrait Gallery threatened Wikipedia with a lawsuit in 2009 over its publication of thousands of high resolution images of paintings on Wikipedia Commons. These images had been downloaded from the National Portrait Gallery's website. The Gallery's website allows visitors to download and print available images for private, non-commercial use (Fouseki & Vacharopoulou, 2013, p. 4). The National Portrait Gallery argued that the publication of these images prevented the museum from gaining licensing revenue and "[threatened] the museum's ability to reinvest in the digitization program and…make more images available" (Fouseki & Vacharopoulou, 2013, p. 4). Wikipedia contended that the National Portrait Gallery's argument conflicted with its educational mission saying that "it is hard to see a plausible argument that excluding public domain content from a free, non-profit encyclopedia serves an interest whatsoever" (Fouseki & Vacharopoulou, 2013, p. 4-5). Although the two organizations resolved this dispute without going to court, this case demonstrates how museums' and Wikipedia's differing philosophies on the dissemination of information threaten healthy partnerships between the organizations.

Museums have also tried to collaborate with Wikipedia through Wikipedian-in-residence programs. In 2010, a Wikipedian spent a month at the British Museum with the goal of "building a relationship between the Museum and the Wikipedian community through a range of activities [by] creating…articles about notable items…of specific [relevance] to the collection" (Fouseki & Vacharopoulou, 2013, p. 5). The relationship between the museum and Wikipedia in this context

again proved difficult. Rather than build a symbiotic relationship, the Wikipedian-in-residence took special care to not "monopolize or own articles about British Museum topics, but [instead] provide an added resource for existing editors to improve the speed and quality of their work" (Fouseki & Vacharopoulou, 2013, p. 5). Project participants specifically avoided potentially controversial or contentious topics when working together.

At the heart of these disputes lies a tension that defines the core differences between museums and Wikipedia. Museums are "interested in producing knowledge that [can] enhance interpretation of the collections" (Fouseki & Vacharopoulou, 2013, p. 6). They are reluctant to relinquish curatorial authority over images or context. Wikipedia is focused on sharing information with as wide an audience as possible (Fouseki & Vacharopoulou, 2013, p. 6). Museums' protectiveness of their collections represents a struggle between their desire to maintain an authoritative curatorial voice and the perceived need to improve overall public access. Fouseki and Vacharopoulou (2015) clearly identify these differences:

> Museum experts view themselves as the appropriate guardians of heritage and the producers of knowledge (we will call this institutional knowledge), a belief that contradicts with the type of knowledge that is produced and consumed mainly by 'non-expert' Wikipedians (we will call this social knowledge). Institutional knowledge is perceived by experts as accurate and objective, while social knowledge is perceived to be fluid and changeable… (p. 2)

Despite welcoming digitization for the benefits it brings to collections access, museums still feel threatened by their inability to maintain control over the images they release (Tam, 2015, p. 34). Maniak (2014) notes that "museums build their identity on the exhibits and masterpieces they possess" (p. 87). Museum professionals fear that this historical legitimacy "as the only institutional figure permitted to choose what will be exhibited" (Pulh & Mencarelli, 2015, p. 48) is threatened by online access. Museums believe that unguided online access threatens not only their authority, but also their very existence.

It is important to note that Wikipedia's "social knowledge" has not been exempt from criticism. Wikipedia's pillar of neutrality is frequently undermined by the public discourse it relies upon to sustain itself. When an "editing war" broke out as a result of intense debates surrounding an article on climate change, website administrators were forced to intervene and prohibit one side from editing the page while placing the other on a probationary period. Fouseki and Vacharopolou (2015) go on to state that "when dissemination of information becomes a war and there is no conformation to Wikipedia's [emphasis on neutrality], both sides of this 'war' are liable" (p. 3). Wikipedia's goal of neutrality is also compromised by the fact that over 90 percent of its editors are men (Phetteplace, 2015, p. 110). In Phetteplace's experience, this bias resulted in gender-based discrimination towards attempts to edit pages of female artists.

Phillips (2013) believes that future collaborations between museums, Wikipedia, and similar entities will resolve these differences and maladies under a new model of Open Authority that "brings together the museums' established expertise with the contributions of broad audiences through collaborative virtual platforms" (p. 220). Phillips maintains that edit-a-thons and Wikipedian-in-Residence programs, while imperfect, are the only the beginning of museums experimenting with the Open Authority philosophy.

Museums and the Open Authority Model

Several museums have fully embraced practices similar to Open Authority through in-house methods and technology. The most notable example of this experimentation is at the Cooper Hewitt, Smithsonian Design Museum in New York. The unique renovation of this museum was driven by the desire to reconcile two contrasting demands:

1. Whatever was designed for the galleries would give visitors a reason to visit physically rather than only digitally.
2. Nothing would be artificially held back, content-wise, from the web (Chan & Cope, 2015, p. 355).

The design team at the museum wanted to make a persistent experience that linked online access with physical immersion. In addition to releasing an online tool to browse the museum's collection, the designers also placed large touch-screen tables throughout the museum to allow visitors to search the collection on location. Binding these online and physical components together is The Pen, a device that allows visitors to scan objects in the museum. This innovation enables visitors to "'collect' designers, entire exhibitions, or even architectural elements from the building itself…by reading tags placed around the museum with their Pen" (Chan & Pope, 2015, p. 360). Users can then access these collections on the museum's website later.

While it does not integrate its online experience into its physical galleries like the Cooper Hewitt, the Amsterdam Rijksmuseum is also cited as a major force in online collections access through the Rijksstudio. Visitors to the museum's website can not only browse images of the collection, but they can also "process the images of objects by cutting them into pieces, making collages…[Users] can also order posters and prints with their personalized reproductions or download them" (Maniak, 2014, p. 86). Meanwhile, the Metropolitan Museum of Art's Heilbrunn Timeline of Art History allows web users to browse the museum's collection; the website "pairs essays and works of art with chronologies" (Heilbrunn Timeline, 2016). The essays are written by curators and emulate the exploratory environment of Wikipedia in which "each piece of information that has its own separate entry is given a hyperlink that takes the reader to a completely different article" (Bremen, 2011, p. 118). The distinct differences in these online strategies reflect the vast array of online engagement ideas within the museum world.

Conclusion

All of these online systems and integrations required significant financial investments to initiate. The Cooper Hewitt's renovation cost the museum $91 million over three years (Chan &

Pope, 2015, p. 354). Most museums will never have access to the capital that makes these projects possible. Furthermore, while these museums' attempts to provide engaging and participatory digital content are admirable, they are also self-contained ventures designed to promote the authority of the museums. Small museums without the name recognition of these larger institutions will not be able to imitate these online platforms and draw the same audience numbers. Instead, Lori Phillips's call for Open Authority will come from small museums that must collaborate with others to achieve success online. However, it is unclear which strategies will work best for smaller institutions. Museums looking to engage visitors online must therefore take into account what their collections contain as well as the audiences they are trying to reach.

Despite the surge in online content over the past decade, even the largest museums still only offer basic information to researchers. The project discussed in this paper proposes a model for small museums to engage their audiences through online collections. By using the authority that they have built up over years of trust and goodwill, museums have the opportunity to develop online content that facilitates research and insight among casual researchers. This integration into the mainstream flow of inquiry represents the next step in online collections and provides the base for The Museum Wiki.

Chapter 3: Project Proposal

The Museum Wiki

Collection access is an essential component of a museum's online footprint. Digitization of artworks and artifacts has made it easier than ever for museums to make their collections viewable. Despite the proliferation of online collections in the past decade, few museums offer competent levels of interpretive content or contextualization for their newly digitized collections. Many museums eschew even basic object descriptions in favor of traditional tombstone information giving only artists' names, the artwork titles, the years of origin, and the artistic mediums used. When museums do offer descriptions of artworks online, their interpretive material often pales in comparison to the detail that can be found elsewhere on the Internet. For example, the Mona Lisa, perhaps the most famous painting in the world, is exhibited and cared for by the Louvre in France. The length of this painting's entry on the museum's website is 600 words (Mona Lisa, 2016). The painting's description on Wikipedia is over 4,000 words (Mona Lisa – Wikipedia, 2016). This discrepancy in detail is a testament to museums' failures to use online platforms to educate the community, provide adequate research resources, and publicize the objects they conserve.

To address this interpretive gap, I propose a new framework for online collections that embraces these concepts through The Museum Wiki. This wiki will update stale online collections with detailed object descriptions that are cross-linked to web pages on similar artworks, artists, artistic movements, and more. Furthermore, I propose that the information in this wiki be sourced to external websites, such as Wikipedia, to drive researchers to the museum's website and improve its online profile. By encouraging online exploration and

engagement, museums can facilitate the use of their collections as credible online research sources and publicize their own valuable research.

The Haggin Museum

The Haggin Museum in Stockton, CA is the ideal museum to deploy this strategy. This medium sized museum receives between 25,000 and 35,000 visitors annually and features an impressive collection of fine art. In contrast to other fine art museums, the Haggin Museum is located in a small city that is largely insulated from tourism traffic. This isolation combined with the museum's focused collection makes it a great case study to pilot this project because its intended effects can be more easily studied and controlled. The museum is undergoing a massive renovation project to its galleries; these updates are the most significant the museum has seen in the past 85 years. The museum design firm Gallagher & Associates is leading this overhaul with sparse artwork labels that range from 40 to 60 words and focus on concrete information. These labels will be accompanied by slightly larger focus panels that contain about 75 words of context and background information.

Gallagher & Associates will support these renovations with in-gallery kiosks that provide in-depth information on artists, paintings, and art history on digital displays. This second pillar of improvements reflects the Haggin Museum's new commitment to online and digital content. The museum has expressed interest in new ways to improve its online presence. Although the museum has experimented with Wikipedia integration in the past, it has never tried anything as comprehensive or focused as what this project proposes.

The Haggin Museum's online collection currently features over 40 artists from many different backgrounds and movements. My proposed project will focus on developing content around one of these artists: Albert Bierstadt. The Haggin Museum has one of the largest

collections of Bierstadt paintings in the country and features 12 of these paintings on its website (Fine Art Collection, 2016). Because these paintings are a small but high profile component of the Haggin Museum's collection, they represent an ideal case study to measure the effects of The Museum Wiki.

Goal #1 – Improve Interpretive Content

The first goal of this project is to provide comprehensive interpretive content for the Albert Bierstadt paintings in the Haggin Museum's online collection. These resources will be essential to expand what the Haggin Museum's online collection can offer to web visitors. Instead of giving only the most basic information and provenance regarding Bierstadt paintings, these articles will provide valuable insight into the artist's life, his individual paintings, and his artistic choices. Currently, the Haggin Museum's website offers a general artist biography for Bierstadt as well as entries for 9 of his 12 paintings in the online collection. The lengths of these entries range from 93 words to over 450 words.

This goal will be achieved primarily through two core objectives. The first objective is to expand upon the existing articles for Bierstadt paintings and write entries for paintings that do not have descriptions. Entries will be expanded to be at least 400 words each. The second objective is to produce a series of peripheral articles explaining the many artistic techniques Bierstadt used as well as artistic movements and historical and cultural contexts that impacted his career. These articles may include the Hudson River School artists, landscape art, the San Francisco Art Association, Luminism, and the opening of the American West. All of these articles will be produced by a team of volunteers supervised by the Haggin Museum's curator. This crowdsourced model, vetted by curatorial oversight, will expediently produce articles faster than individual effort.

The importance of this goal and these objectives is embodied by an idea in the tech world known as "the whole product model." This theory proposes that "there is a gap between the marketing promise made to the customer…and the ability of the shipped product to fulfill that promise" (Moore, 1991). Gaps in the marketing promise and the shipped product are bridged by auxiliary products and services. This bridging is important to maintain positive relationships with customers and prevent them from feeling let down or cheated. This philosophy can be applied to many other industries and products, including museums. Online collections promise an informative and reliable encyclopedia to users; the reality is that these databases are difficult to navigate and are only as useful as the information they provide.

When an online collection fails to provide information that users are seeking, it undermines the museum's educational promise. In the tech world, this failure contributes to "disillusionment with high tech's inability to deliver on its promise…to customers" (Moore, 1991) and leads consumers to look for alternatives. In regards to online collections, incomplete data entries may result in disillusionment that undermines users' faith in the museum itself and drives them to other sources of information. This philosophy underlines why having entries for each painting is an essential component of this project.

Goal #2 – Facilitate Exploration of Collection

The second goal of this project is to facilitate exploration of the Haggin Museum's online collection and resources. Although museums like the Haggin are relatively small, many of these organizations still care for thousands of objects. Traditional online catalogs discourage exploration and discovery by failing to guide users to artworks similar to the ones they are viewing. Combined with their lack of interpretation, online collections' lack of suggested content makes user exploration akin to rummaging aimlessly through a trunk of artworks instead of an

informative educational experience. Essentially, traditional online collections are only useful for users who know exactly what object or artist they are researching. The Haggin Museum can circumvent this effect by providing a roadmap to navigate its collection and the relationships between the artworks.

This roadmap will be achieved by crosslinking the Haggin's articles on the Bierstadt collection to each other. Each article will contain hyperlinks to at least three other related articles. This strategy will build a network of pages that encourages exploration of the Haggin's collection without leading users to dead ends. In addition to building a series of interrelated hyperlinks to guide user experiences, this goal will be achieved by allowing users to search the collection through tagging. Social tagging is an emergent technology that allows users to search through collections via various keywords. Although this practice is usually crowdsourced to the general public, the Haggin Museum Wiki will provide its own set of tags for users. These tags will be informed by public feedback through surveys at museum events. Respondents will be asked to describe paintings in three words or less and build the base for a social tagging system at the museum.

Wikipedia demonstrates the benefit of having interlinked sets of articles. Articles are packed with related material that encourages users to stay on Wikipedia's website while providing valuable educational resources. For example, Albert Bierstadt's Wikipedia page contains over 30 in-article hyperlinks to other Wikipedia pages, many of which directly relate to Bierstadt's contemporaries and history (Bierstadt, 2016). By comparison, the Haggin Museum's biography of Bierstadt contains just 12 related links, one for each of his paintings (Fine Art Collection, 2016). Although it is foolish for museums to compete directly with informational behemoths such as Wikipedia, this discrepancy reflects online collections' inability to encourage

exploration of their sizable holdings. Wikipedia fosters exploration through its interlinked articles. This endless exploration is known colloquially as a Wiki-hole, and is described as "going to Wikipedia to look up a simple piece of information, and ending up spending several hours reading about things you didn't know existed" (Urban Dictionary, 2006). By modeling its online collection after this format, the Haggin Museum can foster natural and casual exploration of its collection that is educational and self-starting.

Goal #3 – Improve Online Visibility of Collection

The third goal of this project is to improve online discoverability of these resources external from the Haggin Museum's website. Although the museum has a large collection of fine art, the usefulness of any database or online collection platform is dependent upon the public's awareness of its resources. By integrating its resources into the mainstream flows of information and discovery on the Internet, the Haggin Museum can improve its collection's online profile and raise public awareness of its educational resources.

In regards to the museum's Albert Bierstadt collection, this goal can be achieved by editing Bierstadt's Wikipedia page with content from the articles written for the Haggin Museum's website. These edits will be sourced back to the Haggin Museum's online collection. This strategy will passively drive Wikipedia users researching Bierstadt to the Haggin Museum's website. In addition to passive engagement with users, this goal will be accomplished through an awareness campaign on social media and in the museum itself. Actively engaging its audience will raise awareness of the museum's educational resources and establish the museum as a go-to source of information on Albert Bierstadt.

As referenced in the previous section, libraries have increasingly experimented with Wikipedia projects to drive visitors to their online collections. The University of Pittsburgh's

initiative enacted through a team of student interns yielded increased website hits directed from Wikipedia as a result of their efforts. Other university libraries have experimented with similar projects and observed similar results. These success stories are a result of natural research strategies students employ when beginning projects. Wikipedia represents a mainstream "information 'flow'" (Galloway & Dellacorte, 2014, p. 86) that libraries and museums can tap into to drive researchers to their collections. Improving Wikipedia pages with the information from the Haggin Museum's articles facilitates collection access and simultaneously serves as publicity for the collection as a whole. This publicity can be amplified through more traditional campaigns in the museum or on social media.

A New Model for Online Collections

The model presented by this project represents a step forward in how museums use the Internet. Online collections should not be seen as an afterthought of digitization. Instead, they should be treated as an extension of museums that require the same level of interpretation and context that is a foregone conclusion in traditional gallery settings. The Museum Wiki model is an opportunity for museums to build a narrative of art history, natural history, or cultural history using their collections. By using their leverage as trusted institutions, museums can use this model to establish themselves as citable sources for casual researchers.

The Museum Wiki model can also serve as a marketing tool for a museum's collection. Raising awareness of a museum's holdings can drive visitors to the museum to see the objects in person, increase academic research requests for objects, and increase donations to the museum. The Museum Wiki's benefits are obvious and relatable to the casual user. This project takes the next leap in collection digitization by investing in the needs of the public to properly enjoy and explore museum collections.

Chapter 4: Action Plan

Key Project Managers

Project Supervisor

The Haggin Museum Wiki will be accomplished by utilizing the museum's staff and volunteers and is outlined in the Gantt chart found in Appendix C. The Project Overview Meeting on February 1st will assign a supervisor for this project. The key points of contact in other departments will also be present at this meeting. This supervisor will oversee the project's development over its five month timeline. He or she will manage the volunteer team that will write articles for this project as well as make appropriate edits on relevant Wikipedia pages. The supervisor will also be the main point of contact with other key staff members.

Volunteer Contributors

The volunteer team of contributors plays the most important role in making this project a success. This team will be responsible for creating the articles' content and making appropriate edits on relevant Wikipedia pages. Volunteer recruitment will begin the day after the initial onboarding meeting and will run for a month. The project will need at least four volunteer contributors to produce the proper number of articles within the scheduled 75 day period from the end of February to mid-May.

Although anyone will be welcome to serve as a volunteer for this project, the museum will target current volunteers with an established relationship with the Haggin Museum and knowledge of art history. This focus on current volunteers will mitigate project abandonment and ensure long-term commitment to the project. After the initial orientation on February 26th, volunteers will operate freely to research and write their articles. Check-in meetings will be

scheduled throughout the research process to ensure that volunteers receive proper oversight from the supervisor. Volunteers will report directly to the project supervisor.

Webmaster

The Haggin Museum website webmaster also plays an essential role in the completion of this project. This individual will be in charge of publishing the entries written by volunteers, instituting the social tagging system, and hyperlinking each article together. The webmaster will ensure that the collection user interface reflects the goals of The Museum Wiki. Although the webmaster will be present for the February 1st onboarding meeting, the first meeting with this point of contact will not occur until May 5th. This meeting marks a major transition in this project from content creation to website management as the supervisor will begin to place greater emphasis on marketing the content to the public.

Marketing

The marketing team will be responsible for publicizing the new collection wiki. The marketing manager will oversee the creation and distribution of brochures in the museum advertising the website. The marketing manager will also direct a social media awareness campaign to highlight the newly written articles. The project supervisor will coordinate with the marketing manager to accomplish these tasks. The first marketing meeting will not take place until April 1st. This timeline allows the project supervisor to ensure that the core component of article creation is on track before focusing on marketing efforts.

Education

The education department will enable The Museum Wiki to implement the project's tagging system for the paintings. Surveys will ask visitors to describe Bierstadt paintings in simple terms. The results of this survey will inform the tags in The Museum Wiki that users can

use to search the collection. The project supervisor will meet with the education coordinator in early February to discuss incorporating a survey into events at the Haggin Museum. This survey will be developed by the project supervisor and education department.

The survey component of this project runs concurrently with the development of the articles themselves. The education department will essentially act independently over the 75 day period to administer surveys and collect data. This dynamic is possible because the development of the survey and its incorporation into already planned events is not dependent upon the creation of the articles. However, the webmaster will be reliant upon the education department to relay their recommendations in order to incorporate the tags into the final product.

Key Milestones

The core element of this project is the research and writing of the articles for the The Museum Wiki. Except for the social tagging component, every section of this project is dependent upon the completion of the article series. Within the article writing phase, recruitment and orientation are the two most important components. These events will ensure that the article writing phase has enough volunteers to complete the project.

The completion of the writing phase will allow the project supervisor to initiate the meeting with the webmaster and prepare the written material for online publishing. The webmaster's management of the article materials presents the next major milestone in this project. Additionally, the Wikipedia editing phase can only begin once the initial article materials have been published.

Project Funding

This project will primarily be funded through the museum's general operating budget by using existing staff members' talents and expertise. This manpower will be bolstered by volunteer support. Additional funding may need to be budgeted for marketing brochures as needed, but this is not anticipated.

Chapter 5: Conclusion

Measuring Success

The success of this project will be measured through a variety of metrics based on the three core goals of improving interpretive content online, facilitating exploration of the collection, and improving the online visibility of the collection. These metrics for The Museum Wiki will be determined within the context of the Haggin Museum and the content written for the Albert Bierstadt paintings currently featured on the museum's website.

The first goal of improving interpretive content will be measured by the expansion and completion of articles concerning Albert Bierstadt. The Haggin Museum can measure the success of this goal by tracking the progress of the volunteer contributor team. Over the course of two and a half months, these volunteers will be researching and writing articles for this project. Success will be determined by their ability to reach the 400 words per article standard previously described. This threshold should also apply to the peripheral articles concerning the art historical movements and techniques in which Bierstadt was involved. The volunteer team may contribute up to 20 new articles total. The Haggin Museum must note how many articles are ultimately planned at the outset of the project. Upon the project's conclusion, the Haggin Museum should not only measure how many articles were actually written, but also what proportion of produced articles met the 400 word standard. Furthermore, the project supervisor must determine each article's informational worth on a case-by-case basis.

The core pillar of The Museum Wiki, regardless of where it is being implemented, is content production. None of the subsequent goals or objectives can be undertaken without content. Because content production is inseparable from the project itself, the Haggin Museum can accurately gauge the success of this first goal by comparing the produced articles to the 400

word standard. If only half of the articles produced reach this standard, then the Haggin Museum will have immediate feedback regarding both the depth and quality of these articles. Conversely, the Haggin Museum can rate this goal as an immediate success if the volunteer team produces all of the planned articles on time and above the 400 word threshold.

The second goal of facilitating exploration of the online collection will require more complex metrics to accurately determine its success. The objectives for this goal necessitate the interlinking of articles on the Haggin Museum's website. Similar to Wikipedia, linking articles together will build branching webs of content that easily allow website users to navigate the collection and similar topics. The museum can therefore measure the success of this goal by tracking and aggregating website user statistics. In addition to aggregate totals of page views, sessions, and total users, the most important statistics for the Haggin Museum to measure the effectiveness of the interlinking process are the number of pages visited per session and the average session duration. When considering website metrics, a session refers to the total number of interactions a single user has while engaged on a website. By implementing The Museum Wiki, the Haggin Museum will be attempting to increase the number of interactions that its website users have with its online collection as well as the duration of time that users are engaged with each page.

This project can be considered a success if the museum observes increases in these metrics on the pages containing the produced Bierstadt articles. Increases in session duration and pages visited per session on Bierstadt pages will reflect users' engagement with the content as well as the website's effectiveness in guiding users from page to page through its links. Additionally, increases in these metrics may reflect the overall quality of the articles. Furthermore, the Haggin Museum should not limit itself to these measurements of success.

Aggregate totals of website users, sessions, and page views are also essential in evaluating this project as they indicate the articles' overall popularity.

The last goal of this project, improving the online visibility of the museum's collection, involves these aggregate metrics as well as unique measures regarding web traffic sources. The objectives employed to achieve this goal require the Haggin Museum to edit relevant Wikipedia articles to drive casual researchers to the museum's website. The museum will also engage in social media promotion to highlight these articles. The specific metrics required to measure the success of these endeavors are referral paths that track the sources of traffic to a website. The Haggin Museum will need to use this metric with special consideration to Wikipedia, social media, and overall website visits to accurately gauge its website's popularity. If this component of The Museum Wiki succeeds, then the Haggin Museum will see an increase in overall web traffic as well as an increase in referrals from Wikipedia pages on Albert Bierstadt.

It is important to note that the Haggin Museum currently does not track most of these website usage statistics. Before undertaking this project or publishing any written material to the website, the museum must employ the use of tracking tools such as Google Analytics to track these statistics for at least a few months. This precaution will enable the Haggin Museum to compare these statistics before and after the project's completion and prevent confirmation bias from skewing any interpretation of the statistics.

Future Expansion

The Haggin Museum's implementation of The Museum Wiki has the capacity to make big changes at the museum over the long term. By using its collection of paintings by Albert Bierstadt to pilot the project, the Haggin Museum will test the core tenets of the Museum Wiki in a small, controlled setting with one of the more notable aspects of its collection. This small scale

will benefit the museum by limiting the resources it needs to devote to the project while still ensuring it can evaluate its effectiveness. If the museum reviews the results of this project and finds it successful, it will have already laid the groundwork for its expansion to other artists in the collection. The Haggin Museum will continue see more traffic to its website as the number of articles in its online collection grows. As the project expands its scope, the museum can slowly establish itself as a reputable source for casual research on its artists. Even as it uses Wikipedia to publicize its collection, this expertise has the potential to provide information that is more in-depth than its open-sourced counterpart. Even if the museum chooses not to continue expanding its online content, the articles created for this pilot project still have value to the general public as educational resources. However, successful implementation of this project at the Haggin Museum will provide a model for other small museums to produce educational and interpretive content for their online collections.

Although outside the scope of this project, The Museum Wiki concept presents specific challenges to museums regarding curatorial authority and control. By directly publishing content to the web through a team of volunteers, museums employing this model circumvent the rigorous peer-reviewed process of academic publishing. Some institutions may refuse to undertake such a process as it faces the risk of publishing false information. The Museum Wiki model addresses this concern by focusing on factual information in its articles vetted by curators, but organizations may still not be comfortable with ambiguously implied endorsements of factual information. The online publishing strategy proposed by this project represents a new era of museums that challenges the role of the curator in the museum. Pushing educational content online requires curators to rethink what interpretive content belongs in the museum itself.

Despite its enthusiasm and interest in this project, even the Haggin Museum expressed severe concerns and hesitance towards direct online publishing. Consulting with the Haggin Museum for this project has taught me the value of coalition building in project management. Projects like The Museum Wiki, which represents uncharted territory for organizations, only underline its importance. While notoriously slow-moving institutions like museums frequently resist new ideas, open dialogues build trust that allows ideas like The Museum Wiki to flourish.

The participatory curation unlocked by The Museum Wiki will also allow museums to fully embrace the accessibility that interpretive content in online collections enables. With The Museum Wiki, thousands of researchers and individuals will be able to view and learn about museum collections that may not have otherwise been able to visit. This underserved audience may not live near the museum or may be limited by physical disabilities. Accessibility is an essential component of social justice and the Internet allows museums to address these issues in many ways. The Museum Wiki facilitates unprecedented access to museums' collections and rewards curiosity and inquiry through its uniquely structured system of interlinked and externally promoted articles. In regards to the Haggin Museum, the improved visibility enabled by this project may drive visitors to the museum itself to see Albert Bierstadt's paintings in person. Despite the advantages of The Museum Wiki, it cannot replicate the immense scale and detail of Bierstadt's paintings on a computer screen. As online collections develop richer content, museums will be able to focus on improving the already grand experience of seeing their objects in person. The Museum Wiki provides a model to develop that content and facilitate self-guided research and discovery of museum collections.

Appendix A: Annotated Bibliography

Becvar, J. F., Becvar, K. M., Boast, R., Srinivasan, R. (2009). Digital Museums and Diverse Cultural Knowledges: Moving Past the Traditional Catalog. *The Information Society*, Volume 25, 265-278.

This article discusses the effects that Web 2.0 technologies are having on traditional museology. The authors argue that museums should integrate these innovations into actual cataloging techniques as well general participatory initiatives in exhibits. Museums have long adhered to an intellectualist approach to curation and education. Although the relativistic nature of cultural objects favors a pluralistic approach, museums have general eschewed this strategy. Web 2.0 technologies such as social tagging encourage this pluralistic collaboration by involving the public. The Museum Wiki expands upon this implementation of Web 2.0 technology to build a self-referential database of the Haggin Museum's collection through both social tagging and the interlinking of articles.

Bremen, S. (2011). Wikipedia Links and Viral Loops. *Curator: The Museum Journal*, 54 (2), 117-122.

In this article, the author examines how museum exhibitions facilitate information and conversation. Museums accomplish this through their choice of objects in the exhibit as well as how those objects are organized. She emphasizes how an exhibit's success or failure is dependent upon the visitor's ability engage with its content regardless of their background. She also draws parallels between museum exhibitions and Wikipedia entries. Similar to how Wikipedia contains endless hyperlinks to other entries, museum exhibitions link visitors to paintings, artist biographies, and historical context.

This dynamic creates viral loops that facilitate continued sharing and interaction. Although this article is focused on museum exhibitions, this philosophy directly relates to the goals of The Museum Wiki. By enveloping users in interlinked articles, the Haggin Museum can build a story around its collection that encourages online users to explore and learn.

Cairns, S. (2013). Mutualizing Museum Knowledge: Folksonomies and the Changing Shape of Expertise. *Curator: The Museum Journal*, Volume 56 (Issue 1), 107-119.

This article explains how social tagging in online collections leads museums and users to co-create content in a process called mutualization. The digital age has upended the traditional relationship of dissemination between experts and non-experts in favor of an approach that favors knowledge sharing. This new relationship contradicts how most museums treat their online collections. Social tagging can be a bridge between these approaches as a means for museums to learn about how the public interprets their collection.

Steve: The Museum Social Tagging Project is a means through which museums have researched how the public views art. The Museum Wiki emphasizes usability and practicality over strict object classification. By understanding how people actually use online museum collections, The Museum Wiki positions itself to organically facilitate users' navigation of its online collection.

Chae, G., Kim, J. (2011). Rethinking Museum Management by Exploring the Potential of Social Tagging Systems in Online Art Museums. *The International Journal of the Inclusive Museum*, Volume 3 (Issue 3), 132-140.

This article explores the potential of social tagging in the context of museums. Social tagging uses keywords chosen by participating individuals to understand and interpret works of art in simple and generalized ways. Social tagging has been used at large museums such as The Metropolitan Museum of Art to build a set of references to artworks. Based on findings from various tagging analyses, the authors propose several new strategies to incorporate social tagging into museum management.

The first involves tracking and monitoring collections of tags used in online collections to develop a layman's vocabulary for public art thought. The second strategy involves letting the public use tags to curate their own collections. Finally, the others recommend using tagging as a means to survey the public on their thoughts regarding specific artworks. This article outlines the many ways the Haggin Museum can benefit from the social tagging component of The Museum Wiki beyond its strict implementation online.

Chan, S., Cope, A. (2015). Strategies against Architecture: Interactive Media and Transformative Technology at the Cooper Hewitt, Smithsonian Design Museum. *Curator: The Museum Journal*, 58 (3), 353-368.

This article explains how the Cooper Hewitt Smithsonian Design Museum was redesigned to include technology into its exhibit space. The $64 million renovation expanded into a $91 million endeavor built a strategic plan based on fully integrating web technology and its online collection into the museum. One of the main innovations of this project was The Pen, an interactive tool users could use to scan objects in the museum. The Pen links the museum's physical space with its online collection. Users can use the pen to interact with digital tables that display the museum's collection. The Pen allows users to navigate the collection and enables them to "save" objects for later viewing.

Although, The Museum Wiki does not have the budget of this Smithsonian renovation, the Cooper Hewitt's philosophy of digital integration and exploration resonates with the themes of my project. The Museum Wiki uses the themes of the Cooper Hewitt renovation to build a comprehensive online experience for smaller museum like the Haggin Museum.

DellaCorte, C., Galloway, E. (2014). Increasing the Discoverability of Digital Collections Using Wikipedia. *Pennsylvania Libraries: Research & Practice*. Volume 2 (Issue 1), 94-96.

This case study analyzes the results of a project at the University of Pittsburgh in which the University Library System improved its collection's online profile through Wikipedia. Upon discovering that Wikipedia was a major driver of website traffic to the library's collection, the university's librarians developed an internship program to edit Wikipedia articles and use university content as linked sources. To evaluate the success of this initiative, the university monitored website traffic after edits had been approved and noticed increases in web hits and referrals.

This student lead project provides another interesting framework to building a Museum-Wikipedia partnership. The Museum Wiki uses the lessons learned from this university endeavor as a base for its goals. The organizational structure of this project is intended to avoid the pitfalls of Wikipedia's strict neutrality rules.

Draper, J., Wasserstein, S. (2014). Stepping through the Exhibit Glass: Bringing Archive and Museum Content to Life Online. *eContent Quarterly*, Volume 1 (Issue 3), 18-30.

This paper explains the goals and projects of Cengage Learning and its library division, Gale. The organization has been involved in many digitization projects throughout the world. Gale has done archiving for the Associated Press, the British Library Manuscripts, and the Smithsonian Institution. The organization envisions a future of museums where physical exhibitions are only the start of the experience and cross-linked information can be found a click away online. This goal is noble, but the topic of this paper seems tangential to the goals of my project. Furthermore, it is unclear how this paper qualifies as peer-reviewed because it reads as an advertisement for the company.

Elder, D., Westbrook, R., Reilly, M. (2012). Wikipedia Lover, Not a Hater: Harnessing Wikipedia to Increase the Discoverability of Library Resources. *Journal of Web Librarianship*, 6 (1), 32-44.

This study is an example of how organizations can use Wikipedia to improve the public visibility of online collections. The University of Houston piloted a project to experiment with Wikipedia integration for its library materials. The university noted that learning Wikipedia's policies regarding non-advertising and neutrality entailed a steep learning curve. The university also noted increased usage of its collection as a resource after taking part in this project. The Museum Wiki hopes to emulate the success of this pilot program by using the Haggin Museum's collection. However, my project expands the scope of the University of Houston project by providing its own interpretive articles on the Haggin Museum's website.

Fouseki, K., Vacharopoulou, K. (2013). Digital Museum Collections and Social Media: Ethical Considerations of Ownership and Use. *Journal of Conservation and Museum Studies*, Volume 11 (Issue 1), 1-10.

   This article analyzes three cases of museums interacting with Wikipedia. These museums include the Victoria and Albert Museum, the British Museum, and the National Portrait Gallery. At the core of many disputes between museums and Wikipedia is one of access to high-resolution images that violate copyright while simultaneously improving access to the public. Online access through sites like Wikipedia threatens the authority of museums and their ability to influence their audiences. Dilemmas like these are demonstrated through Wikipedia's unauthorized posting of over 3,000 images from the National Portrait Gallery. Meanwhile, places like the British Museum embraced Wikipedia through its Wikipedian-in-Residence program to improve online access. Case studies like these demonstrate the tenuous relationship between museums and Wikipedia. This perspective is important to understand when considering The Museum Wiki as it requires the Haggin Museum to relinquish some of its curatorial authority to improve its collection's accessibility both internally and externally.

Lally, A., Dunford, C. (2007). Using Wikipedia to Extend Digital Collections. *D-Lib Magazine*, 13 (5), 1-13.

   This project review presents how the University of Washington used Wikipedia to raise the online profile of its library. After learning to abide by Wikipedia's editing policies, the university monitored the impact the project had on online use of its collection. Over the period of multiple months, the university saw a steady increase in traffic directed from Wikipedia. The university also noted that other reference sites began linking back to its collection. This project demonstrates how The Museum Wiki can have a cascading effect on the flow of researchers to the Haggin Museum's online collection.

Machefert, S. (2015). Improving the articles about modern art in Wikipedia: a partnership between Wikimédia France and the Pompidou Centre. *Art Libraries Journal*, Volume 40 (Issue 3), 34-40.

   This case study summarizes and analyzes the collaboration between the Pompidou Centre in France and Wikimedia France to create a number of museum-supported Wikipedia articles. The partnership involved a series of public workshops to build content as well as a second set of workshops targeted towards student contributors. The workshops for general public proved difficult to manage as people joined the project with varying levels of familiarity with the Wikipedia software. Furthermore, this group experienced significant churn throughout the project and participants were not replaced. The second group consisted of people with similar backgrounds and saw significant contributions from each individual.

   This project demonstrates one of the main problems facing The Museum Wiki: volunteer turnover. Without consistent participation from its volunteer contributors, the project will suffer from a lack of content. The project plan attempts to address some of this risk by ensuring that volunteers are hand-picked and vetted by museum staff before beginning the project.

Maniak, K. (2014). Is There a Difference? An Analysis of Museum's Web Presence. *The International Journal of the Inclusive Museum*, Volume 4 (Issue 3), 85-93.

This article explains the opportunities and challenges facing museums as the move online. The author notes that online collection engagement is difficult for museums because traditional web experiences only allow the viewing of a single object at a time. Projects and Institutions such as the Google Art Project and the Amsterdam Rijksmuseum promote new ways to interact with collection objects online through customized grouping and sharing.

Many museums are afraid of this new level of access as they are challenged by declining visitor numbers and legal boundaries of online access. Additionally, this article explores the ideas surrounding "participatory culture" in which visitors can contribute and alter content. Although The Museum Wiki is not fully participatory, it incorporates aspects of this article's examples by facilitating exploration and research of its collection through its structured and interlinked articles.

Marty, F. (2011). My Lost Museum: User Expectations and Motivations for Creating Personal Digital Collections on Museum Websites. *Library & Information Science Research*, Volume 33 (Issue 3), 211-219.

This research report explores how museum visitors use personal digital collection features for online collections. Examples of personal collection technology include bibliography tools for online libraries and social tagging systems that allow visitors to "tag" images with associative words. Studies show that interaction with these tools appears to be very superficial. Many online visitors only use these tools once. This study sought to determine what visitors' expectations were for these tools to improve their usage. The results indicated that users of personal collection tools were largely driven by desires to create lists of favorite objects or identifying objects after a museum visit. Visitors tended to ignore more complicated tools that required a large time investment. Although this study focused on a specific type of online engagement through personalized collections, its lessons should be useful for the purposes of The Museum Wiki. Instead of emphasizing personalized collections, my project intends to facilitate research of the collection through informational and contextual articles.

Phetteplace, E. (2015). How Can Libraries Improve Wikipedia? *Reference & User Services Quarterly*, 55 (2), 109-113.

In this article, Eric Phetteplace explains how Wikipedia has slowly been embraced by the academic community as a valuable resource in exploratory research. However, Wikipedia also faces challenges regarding its pool of editors. Because over 90 percent of editors are men, the site suffers from content bias regarding women. Phetteplace discusses how the Art+Feminism Edit-A-Thon suffered from this gendered bias by editors that failed to recognize that a newly uploaded image to a female artist's entry was the artist herself. This article demonstrates that The Museum Wiki must be careful in how it presents information to prevent institutional bias in both its entries and the edits made on Wikipedia.

Philips, L. B. (2013). The Temple and the Bazaar: Wikipedia as a Platform for Open Authority in Museums. *Curator: The Museum Journal*, Volume 56 (Issue 2), 219-235.

In this article, Ms. Philips explores the role Wikipedia and open-source intelligence tools play in affecting museums' curatorial authority. She compares two articles: Duncan Cameron's "The Museum, a Temple or a Forum" and Eric Raymond's "The Cathedral and the Bazaar." The former explores museum's role as an objective source of knowledge (a temple) or an open exchange of ideas (a forum). Meanwhile, Raymond's article compares the top-down software development strategies employed by computer behemoths like Microsoft with the open-sourced, collaborative strategies used in the development of software such as Linux. According to Philips, the Internet age has accelerated the need for museums to adopt a more open approach not only in its physical space, but online as well. Museums can achieve the ideal of "open authority" online by collaborating with Wikipedia to improve its articles with curator-informed content. This article is foundational for The Museum Wiki. The "open authority" model guides both facets of my project: updating online museum collections with cross-linked articles and updating existing Wikipedia articles.

Pressley, L., McCallum, C. (2008). Putting the Library in Wikipedia. Online, 32 (5), 39-42.

This article outlines the challenges facing libraries hoping to use Wikipedia as a means to publicize their collections. The authors present several rules to guide libraries in future projects. These rules emphasize following Wikipedia's policies on non-advertising, neutrality, and verifiability of sources. The rules in this article were instrumental in designing The Museum Wiki to avoid these pitfalls and ensure that the volunteer contributors' edits on Wikipedia remained intact.

Pulh, M., Mencarelli, R. (2015). Web 2.0: Is the Museum-Visitor Relationship Being Redefined? *International Journal of Arts Management*, 18 (1), 43-51.

This article outlines the effect that Web 2.0 technologies have had on the relationship between museums and their visitors. Museums have long operated with little input from its visitors. As museums have experimented with Web 2.0 technology including social media and blogging, they have been challenged to make themselves more participatory organizations. However, this integration forces the museum to relinquish its curatorial authority over its collection, a dynamic that many museums consider their organizational legitimacy. In regards to The Museum Wiki, its successful implementation is dependent upon organizational buy-in. The host museum must be ready to transform its relationship with its visitors for the project to succeed. The Museum Wiki has been designed to appeal to the museum's authority while providing the opportunity to engage with web users.

Staub, T., Hodel, T. (2015). Wikipedia vs. Academia: An investigation into the role of the
    Internet in education, with a special focus on collaborative editing tools such as
    Wikipedia. eLearning & Software for Education, 1, 13-19.

    This article compares and contrasts the academic and Wikipedia communities. Wikipedia
is a self-organized meritocracy that emphasizes quality of content. Although academic often
criticizes Wikipedia for inaccuracies, research has shown that Wikipedia articles have a similar
level of accuracy as more formal encyclopedias. Furthermore, the errors in Wikipedia articles are
often eliminated quicker than its counterparts. The article concludes that despite not having the
rigor of academic research, Wikipedia is a valuable entry point for introductory research. The
Museum Wiki intends to this value of Wikipedia to drive researchers to museums' websites as
research resources. By following the rules of content creation on Wikipedia, museums can
improve the online profile of their collections and establish themselves as trustworthy authorities
on issues related to their collections.

Tam, E. (2015). Digital Museums: A Necessary Evil or Blessing in Disguise? *ArtAsiaPacific*,
    Issue 96, 34.

    Eve Tam, director of the Hong Kong Museum of Art, explores the benefits and
challenges posed by digitization in museums. Digitization raises questions regarding
authenticity, copyright restrictions, and democratization of curatorial authority. This overview of
the issues in collection digitization is limited, but useful as a means to ascertain the online access
landscape. This article provides more context to the challenges facing The Museum Wiki. The
success of the project will be dependent upon organizational buy-in at the Haggin Museum or
any other museum that uses this project as a model.

Appendix B: Project Stakeholders

Project Stakeholders

Haggin Museum

As the main beneficiary and host site of The Museum Wiki, the Haggin Museum is the project's largest stakeholder. The fine art museum is located in Stockton, CA and receives between 25,000 to 35,000 visitors every year. The museum receives an estimated 10,000 more visitors annually during offsite visits and off-hours tours. From its founding in 1931 until 2001, the Haggin Museum had no admission fees until decreases in attendance for the organization to institute a price of $5. Approximately 50% of the museum's visitors come from the Stockton area while the other half largely consists of a West Coast audience with specific interests in the artists featured in the museum's collection. These artists include 19th century masters including Albert Bierstadt, William Merritt Chase, and George Inness.

The museum has recently undertaken a large renovation project for its building. In addition to these renovations, the museum is revising gallery spaces with consulting from Gallagher & Associates. Paintings will be accompanied by digital kiosks that contain contextual information on paintings in the collection. This interest in digital technology has also led to interest in revising the museum website. The Museum Wiki is catered towards providing a model for the museum to use and expand upon in developing its website and online collection. It is imperative that the museum approves of the overall project design and plan. As a traditional fine art museum, the Haggin wields significant curatorial authority over its collection. Although The Museum Wiki challenges this authority through its volunteer driven research and Wikipedia integration, the project also uses the museum's voice to establish an online presence for the organization.

Haggin Museum Staff

The Haggin Museum is operated by a small staff of about ten paid employees as well as a team of volunteers. The success of The Museum Wiki will be dependent upon the museum's staff understanding their responsibilities and working in harmony. In addition to high-end staff administration, the most important members of the museum staff include the museum webmaster, the marketing team, and the education department. The webmaster will be responsible for implementing all changes proposed for this project. The project's minimum threshold of success requires full cooperation of the webmaster. This importance makes him essential to the project's development and timeline.

The marketing team will be responsible for publicizing the new articles. Although the project can proceed without the approval of the marketing team, their work will be crucial in maximizing the Museum Wiki's impact among followers of the Haggin Museum on social media. Finally, the education department will be responsible for building and administering a survey to museum visitors to recommend potential tags for the Museum Wiki.

Volunteer Contributor Team

The team of volunteer contributors is vital to the completion of this project. A team of four to five volunteers will be handpicked by the project supervisor to manage the research and writing of articles. These volunteers will also be responsible for editing relevant Wikipedia articles with the content written for the Haggin Museum. In addition to having an art history background, these volunteers will need to be willing to learn how to write for the web and Wikipedia. The proposed timeline for The Museum Wiki is dependent upon how quickly these volunteers can produce articles. Furthermore, the project supervisor will need to cater to the needs of these volunteers to prevent overworking them and producing an unsustainable level of volunteer turnover.

Other Stakeholders

The Haggin Museum Members are among the other key stakeholders in this project. As annual donors to the museum, members have an indirect financial stake in this project. Members should be notified of its goals to drive interest in the project. Members should also be contacted when the content is published.

Museum visitors represent another stakeholder for this project. Visitors may be drawn to visit the museum's website to learn more about a particular painting. The marketing should be encouraged to publicize The Museum Wiki to these stakeholders when it is completed to maximize its utility.

Researchers of Albert Bierstadt's work are another stakeholder for this project. As individuals interested in the painter but unaware of the Haggin Museum's collection, this audience is the core target of The Museum Wiki. By producing articles on Albert Bierstadt, publishing them on the museum's online collection, and using Wikipedia to cite back to the Haggin Museum's website, the Haggin Museum can guide these researchers to its website as a trustworthy resource. These researchers may feel compelled to visit the museum or submit research requests for specific paintings. As The Museum Wiki expands in its scope, the Haggin Museum will have a larger capacity to cater online researchers of other painters.
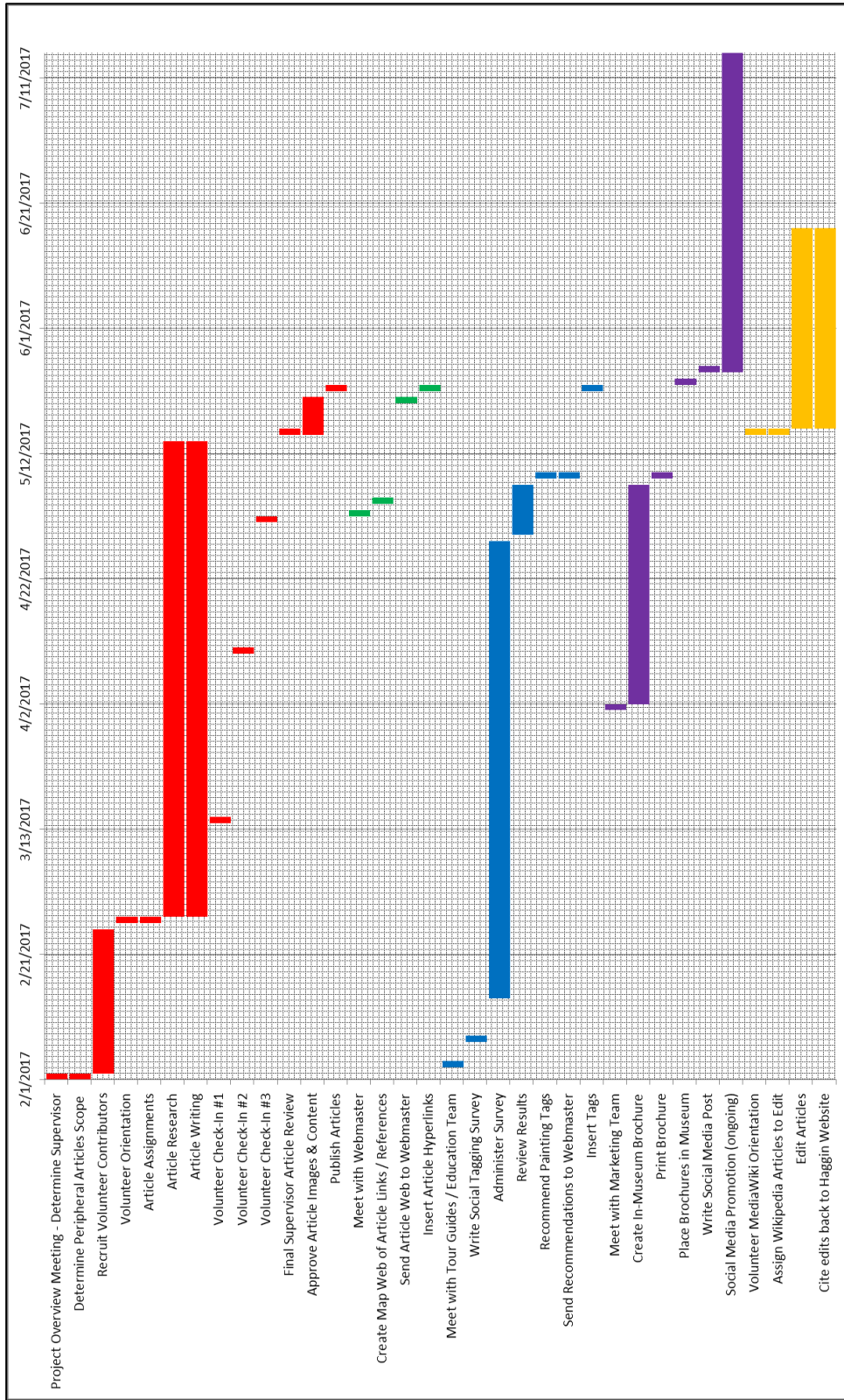
Appendix C: Project Gantt Chart

Figure 1 - Museum Wiki Gantt Chart

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