



**Steppingstones Partnership, Inc.**

A Business and Internet Consulting Company

## **A Literature Review**



Pioneer Churches on the Prairies  
*PioneerChurches.ca*

## **Virtual Tours for Museums and Historic Sites**

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## 1. Introduction

Museums have always been an integral part of any society, despite their declining attraction over time. But what makes them so enticing in the first place? People are drawn to them for a number of reasons. They may simply desire entertainment (Phelan et al., 2018), or they may just be curious about what a museum has to offer. Some people may not even have a choice in this matter—they are simply dragged along by their partner or friends. (Brida et al., 2017) Others may decide to visit a museum because they have wish to share their experience with the world via social media. (Phelan et al., 2018)

## 2. Motivations for Visiting Museum Websites

### 2.1. Basic Information

Perhaps the most important reason for people to visit a museum's website is to gather basic information about the museum. (Marty, 2007) Users may want to learn about a museum's open hours, mission statement, exhibitions, etc. (Sabin, 1997) this is especially true in cases where the museum is completely unfamiliar to the visitor. In fact, in a survey (Marty, 2007), it was found that 89 percent of visitors were likely to visit a museum's website if it was unfamiliar to them. It was also found that, in general, users generally visited a museum's website before visiting the museum in person, and that they were 81.9 percent likely to visit the website.

### 2.2. Viewing Exhibits Virtually

When the Minneapolis Institute of Arts restored one of their paintings in 1999, they created a website that allowed users to track the restoration process online. This allowed them to provide a rich experience to visitors, who were able to learn more about the institute's projects that were not in the spotlight. (Sayre, 2000). Today, thanks to the

development of innovative tools and technologies, users can virtually analyses a museum's paintings online and even determine the exact composition of any color used (Douma and Henschman, 2000). Some museums even allow users to create their own digital collections of their favorite artifacts, such as the Metropolitan Museum of Art. (Bowen and Filippini-Fantoni, 2004) All these advancements have helped eliminate physical barriers and allowed users to interact with artifacts regardless of their physical location. (Galani and Chalmers 2002)

### 2.3. Attending Presentations and Lectures

A sizeable portion of a museum's physical and virtual visitors includes education visitors, who hope to gain detailed information about a museum and its history. (Booth, 1998) It is important to cater to the needs of such visitors by hosting presentations and lectures on a museum's website. Most museum websites already offer a host of educational materials that can encourage online learning. (Lin and Gregor, 2007) These can be also be a source of enjoyment for visitors.

### 2.4. Educational Games and Interactive Activities

Although museum websites can make use of educational games and interactive activities, these are not very common. In a study of 225 cultural institutions in the US, it was found that only 5 percent offered interactive learning resources. (Chong and Smith, 2017) These resources included games in which learners could assess their background knowledge of some topic and then, upon learning new information, such as moving their cursor over a number to reveal the answer to a question, they could compare their prior knowledge with this new revelation. Some museum also made use of interactive animations to explain scientific concepts.

### 3. Demographic and Psychographic Characteristics of Visitors

#### 3.1. On-site Visitors

In the UK, a report revealed that 52% of people visited a museum at least once in 2016/17, and 74% people visited a heritage site. A greater number of women (63 percent) than men (39 percent) visited museums. In terms of age groups, 10 percent of visitors were within the ages of 16-24, 16 percent within 25-34, 18 percent within 35-44, 15 percent within 45-44, 18 percent within 55-64, and 23 percent 65 and over. In all groups, the great majority (81-95 percent) of visitors were white, with the second most dominant racial group being Asians. (The Audience Agency, 2018)

For psychographic characteristics, a study (Falk, 2006, 2008) found that museum visitors could be divided into five categories based on their motivations. There are *Explorers*, who consider themselves to be curious people and visit museums to learn more about the themes and motifs on display. There are *Facilitators*, whose motivation for visiting museums is mainly to appease their friends or families. Thirdly, there are *Professionals/Hobbyists*, who are looking for something very specific and are hoping a visit to a particular museum would add to their background knowledge. The fourth group are *Experience Seekers*, whose motivation is to try out new experiences and to hope to gain some leisure out of them, and perhaps be able to boast to their friends about the experience. The final group, *Spiritual Pilgrims*, are attracted to museums to be able to sit in silence and reflect on themselves. They hope to get inspired by the items on display.

#### 3.2. Online Visitors

Again, due to limited availability of data, we are forced to confine ourselves to the UK. In a

survey done on the National Museums Liverpool website, consisting of 537 participants, the following demographics were noted. 61 percent of the participants were female while 37 percent were male. The most common age group was 35-54 (36 percent), followed by 55-64 (26 percent), 18-34 (20%), 65-74 (15%), and lastly 75 and over (3%). Of these participants, 11 percent were high school graduates, 24 percent had further education, 34 percent had a bachelor's degree, 21 percent had a master's degree and 6 percent had a doctorate degree. 4 percent of participants did not choose standard qualifications. In addition, 170 members held proficient certificates. In terms of employment status, 56 percent held either a full-time or a part-time job, 22 percent were retired, 10 percent were students, and 12 percent were unemployed. (Walsh et al., 2020)

We can observe a similar pattern between these two categories of visitors. Both groups contain higher proportions of females than males, with the most dominant age group being people aged 55 and older.

### 4. What Makes a Visit Satisfying?

#### 4.1. On-Site Visits

The satisfaction that visitors derived from their visits depends on their motivations as well as the outcome of the visit. In Marty's study, for example, (Marty, 2007), *Explorers* reported increased satisfaction of the visit if their curiosity was satisfied. *Experience Seekers* reported increased satisfaction if they felt more relaxed after the experience. Similarly, the satisfaction of *Spiritual Pilgrims* was contingent on whether or not they had a spiritual experience. For *Professionals / Hobbyists*, satisfaction depended on the degree to which their professional interests were satisfied.

Another interesting study pointed out that the highest satisfaction ratings after a visit were given by visitors who had the least knowledge

or experience, while the lowest ratings were given by visitors with the most knowledge or experience. From this we can infer that the satisfaction of a visit is directly tied to the expectations of the visitor. Those with the least knowledge usually have lower expectations and thus derive more satisfaction from the visit. An implication of this result is that satisfaction does not necessarily correlate with visit quality. (Morris Hargreaves McIntyre, 2007)

## 4.2. Online Visits

In the case of online visits, visitor satisfaction depends on a number of factors, such as the perceived usefulness of a museum's website. This is tied to the degree that the website improves the user's quality of work, life, and learning. (Casalo et al. 2008, Pavlou 2012). In a study, it was reported that information quality, perceived usefulness, perceived usability, and museum image were factors that had a direct impact on visitor satisfaction. (Dang & Segers, 2019) Museums can make use of these results to develop visitor-oriented strategies that provide valuable information to the visitor in a convenient manner. (Davidson, 2015)

## 5. Tools and Options for Virtual Tours

### 5.1. 360-degree Photos and Videos

There are many variations to this approach. (Laubheimer, 2020)

1. 3D walking tours, in which users are free to move about and observe their virtual environment.
2. 360 degree video tours
3. A series of 360 degree photos linked together

The first option is offered by Artland on their website. The second option is offered by the

National Marine Sanctuaries, and the by the Vatican museum.

The problem encountered by museums implementing these strategies is that users often believe they would have to put in a lot of effort to understand how the virtual tour works, so they would prefer instead to just take a look at photo galleries, which can be swiped across quickly and can also let users focus on certain details and block out the rest. In some cases, however, such as virtual tours by real estate websites, users found that 3D tours offered them more information, such as how big a room was. Such details cannot be captured in flat images.

Another point to consider when implementing such tours is that users prefer having an expert to guide them, instead of having to do all the work themselves. In some cases, they would prefer watching a 2D video with narration before moving on to the 3D tour.

Lastly, navigating through 3D spaces can be tricky for users. While, in real life, users can simply turn their bodies around, in a virtual tour they would have to initiate a whole series of movements just to turn around. Similarly, they may not be sure of their exact position in the virtual space, and thus way finding may be difficult for them.

### 5.2. Live Zoom Sessions

The National History Museum of LA hosts interactive presentations over Zoom. Students can join these presentations to take a look at the museum's collection and to ask any questions they may have. (Richardson, 2021) These sessions are more interactive than recorded presentations and provide a better overall experience. Museums can also monetise this, providing an additional revenue stream for them.

### 5.3. Games

Games can be an innovative way for museums to offer virtual tours. They can, for example, make use of the very popular game Minecraft to construct a virtual environment that replicates their physical museum.

In 2021, the Metropolitan Museum of Art made their collection available to players of Nintendo's popular game Animal Crossing. Players can purchase these artworks and share them with their friends on social media, providing a creative way for the museum to earn money as well as gain more publicity for its artworks. (Richardson, 2021)

Such an approach, however, may not be suitable for small museums who lack the funds or publicity to get their collections featured in a similar manner. However, they could try creating simple games, perhaps quizzes or trivia that allow users to learn more about their collections in an interactive way.

### 5.4. Social Media

Many museums have taken to social media to engage a wider audience. The National Cowboy Museum in Oklahoma began a series of humorous tweets revolving around a fictional character named Tim. Similarly, the Shedd Aquarium in Chicago shared a video on Twitter showing one of their penguins walking around in their building. This video attracted more than 160,000 likes. (Richardson, 2020) A lot of other museums have jumped on the bandwagon as well.

As of 2019, roughly 42% of the world's population uses the popular social media platforms Twitter, Facebook, and Snapchat. Museums can leverage this to devise a social media marketing campaign targeted at specific audiences. They would have to consider a lot of factors, though, such as whether to use a humorous approach or a serious approach, whether to engage with the audience via

comments and replies, which hashtags to use, etc. (Richardson, 2021)

### 5.5. Animations

Some museums may decide to make use of animated videos to share their collections. For example, the Uffizi Gallery in Italy regularly creates and posts on TikTok animations that feature some of the most valuable items in their collections. The number of views on some of these videos easily exceeds 100,000. (Charr, 2021)

Using animations can be a fun way for museums to engage with their audiences, providing easily accessible information in an entertaining way. However, it needs to be determined beforehand whether the costs of creating such animations will be outweighed by the results they bring. In most cases, it should be fairly easy.

### 5.6. Augmented Reality

Augmented reality allows people to use their phones to superimpose images on top of what they are actually seeing, showing them an altered version of reality. This is an exciting way to add more information to museum tours. Museums have started using this technology in innovative ways. For example, the Muséum national d'Histoire naturelle in Paris launched a project named REVIVRE. It allows visitors to see and interact with animals that are extinct in the real world. Similarly, the National Gallery in London placed QR codes on busy streets in London and allowed users to access these artworks by scanning the QR codes through their phones. A final example of this is the Art Gallery of Ontario, which created a project named ReBlink in 2017. Users could use their phones to see the subjects of the museum's paintings come alive. According to feedback received for this project, 84 percent of visitors reported feelings of engagement with the art owing to this technology, and 39 percent had another

look at the images after using the app. (Coates, 2021)

There are concerns, however, that such technology may exclude older generations who may not know how to use these apps and thus feel left out. There are also concerns of unauthorized augmentations, such as when a group of artists took over an AR gallery in 2018. Despite these drawbacks, however, the use of Augmented Reality technology should allow museums to provide a more engaging experience to its visitors and keep their focus for longer. By helping artworks come to life, AR will allow users to develop a better understanding of the art and encourage them to try to learn more.

### **5.7. Online Courses**

Online courses are a great way for museums to impart knowledge to its audience. A lot of museums are beginning to capitalize on the boom in online learning, using platforms such as Udemy and Skillshare. The Museum of Modern Art, for example, has a Youtube series that teaches viewers the process of making artwork by taking inspiration from some of their most popular artists. There is a Q&A session that allows viewers to ask any questions that they may have. Apart from these Youtube videos, there are also formal short courses that are conducted on Microsoft Teams. (Wombell, 2022)

In order to do this, though, museums would have to invest in recording equipment, including a camera, microphone, etc. They would also have to decide which platform to use. Youtube, for example, would allow students to take classes for free, but in order to make money, the museum would have to make use of Youtube ads. On the other hand, platforms like Udemy would allow museums to register and host courses for free and earn a share of revenue for every student that enrolls.

### **5.8. Podcasts**

Podcasts are growing in popularity everywhere. More than half of Americans over the age of 12 have listened to a podcast. Museums can leverage this to engage with their audience regardless of their location. The Brooklyn Historical Society has a podcast named Flatbush & Main in which they share captivating stories from Brooklyn's history. Similarly, the Minneapolis Institute of Art has a podcast named The Object in which each episode explains in depth a particular item in the museum's collection. (Carlsson, 2022)

A podcast can thus offer a more casual platform for a conversation with the public. It also works as an educational tool, providing its listeners with informative, entertaining content in the form of a story that keeps them engaged.

The drawbacks, however, include the cost of purchasing the recording equipment, and ideally a proper recording studio. There would also be the pressure of consistency—museums would have to regularly come up with new content for their podcasts in order to ensure the success of the podcast. There would be no point in starting a podcast if the museum stops delivering content after just one or two podcasts.

## 6. Monetization and Revenue Generation

### 6.1. Asking For Donations

This model has been used by the newspaper The Guardian. Although it is not related to museums in any way, it has been a successful strategy for them. Over 1 million people have made donations to the newspaper, with 500,000 making donations on an ongoing basis. This model is very easy to implement, and the public, being aware of the impact that COVID-19 has had on museums, would be eagerly willing to donate. (Richardson, 2020)

### 6.2. Sponsorships

Museums can persuade businesses to sponsor their online content. In this way, they would receive funding in exchange for publicity for the business. This approach was tried by the Philbrook Museum of Art, which hosted live streams of concerts in sponsorship with a local company. (Richardson, 2020) However, this depends on whether a museum has any activities that it could obtain sponsorships for.

### 6.3. Special Benefits and Upgrades

Museums that provide free content to users can devise creative strategies to sell a premium membership. Perhaps users could receive monthly newsletters or digital versions of printed publications or discounts on merchandise. There needs to be a balance, however. If most of the useful features require a premium membership, the website may see a drop in visitors. (Richardson, 2020)

### 6.4. Advertising

Museums can easily monetise their websites by offering space for advertising. This is a very reliable method and works well in most cases. The revenue generated will be directly proportional to the number of visitors on the website. The downside, however, is that, again, there needs to be a balance. If the

website contains too many ads, visitors may find it distracting and hard to navigate. (Richardson, 2020)

### 6.5. Virtual Courses

Museums can offer courses in areas that they specialise in. For example, the Denver Museum of Nature and Science offers virtual science classes for students and entire classrooms. Similarly, the Asheville Art Museum has started offering a series of classes for skills such as digital photography. Museums can take this further and offer entire summer camps. Implementing this approach would require carefully choosing an appropriate price and ensuring that the museum has employees that would be comfortable with teaching online. (Cuseum, 2020)

### 6.6 Online Fundraisers

Fundraisers often generate thousands or millions of dollars for museums. Due to the COVID-10 pandemic, however, such events have had to be postponed or cancelled. An alternative would be to host them online. This has been done by the Institute of Contemporary Art Boston, which held a virtual gala in June 2020. Other museums have been drawn to this approach too, including The National Museum of Dance and Newport Art Museum. (Cuseum, 2020) Before taking this approach, however, a museum would have to consider whether its target audience would be interested in online fundraisers, whether, for example, the potential donors fall in a segment that could be targeted by online marketing. Another factor that needs to be considered is whether the museum is technologically capable of hosting an online event that would include hundreds or thousands of participants without causing the server to crash.

## 7. Conclusion

This paper has analyzed people's motivations for visiting museums, both on-site and online. It has also presented a demographic breakdown of museum and museum website visitors and their psychographic subgroups. It has offered a set of criteria for evaluating the satisfaction of a visitor's experience. At its core, though, this paper has presented various approaches to virtual tours and analyzed the benefits and drawbacks of each. Lastly, this paper described some online monetization strategies for museums.

With the worst phase of the COVID-19 pandemic over and the world returning to a semblance of normalcy, some museums are gradually getting back to business, while others have shut their doors due to insufficient funding. Regardless, if there is one key point that can be extracted from this paper, it is that museums must be willing to put effort into establishing an online presence if they wish to keep afloat in this post-COVID era.



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