
Navigating the Digital Landscape: Trends and Challenges for Museums in the 21st Century

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ABSTRACT

This paper examines the current and future state of museums in an ever-evolving digital landscape. With the rise of digital technology and changing cultural expectations, museums must adapt to remain relevant and appealing to their audiences. The report analyzes key trends, including the diversification of content, collaborative curation, changing demographics, and the impact of the Creators' Movement, specifically 3D printing technology. The report emphasizes the need for museums to be innovative, interactive, and socially and culturally relevant in order to maintain their significance in the 21st century.

Keywords: User experience and service, Digital experience, 3-D printing, Museum

INTRODUCTION

Museums have had to adapt to a rapidly changing social and technological landscape in the last 20 years, and digital technology has played a crucial role in this transition (Giannini and Bowen, 2022). As museums continue to adapt, they must remain relevant and engaging to visitors. In this paper, we explore the challenges museums face in the digital landscape and the potential for 3D printing technology to enhance the user experience.

One of the key challenges museums face is the need to diversify their content and adapt to changing cultural expectations. The traditional focus on Western art and history is no longer sufficient, and museums must cater to a wider range of cultures and perspectives. This requires museums to develop new partnerships, engage with diverse communities, and be more inclusive in their programming.

Collaborative curation is another trend that has emerged in recent years, with museums engaging with communities and stakeholders in the development and presentation of exhibitions. This approach not only helps museums to better represent diverse perspectives but also creates more meaningful and relevant experiences for visitors.

The Creators' Movement, with its emphasis on technology and innovation, has also had a significant impact on museums. 3D printing technology, in particular, has opened up new possibilities for museums, allowing them to create highly detailed replicas of artifacts and artworks for visitors to explore and interact with. This technology also offers opportunities for museums

to expand their collections and preserve fragile or rare objects in a digital format.

In order to remain relevant and engaging in the digital age, museums must continue to be innovative, interactive, and socially and culturally relevant. This requires a willingness to embrace new technologies, engage with diverse communities, and experiment with new approaches to curation and programming. The potential of 3D printing technology to enhance the user experience and expand the possibilities for museums is an exciting development that will undoubtedly shape the future of museums in the digital age.

Diversification of Content

As museums continue to adapt to the needs and expectations of their audiences, it is important to consider how to present their content in a way that appeals to different groups in society. With the widespread availability of digital technology and unlimited access to information, museums must find ways to incorporate digital interfaces and immersive experiences into their exhibitions, while also providing a more traditional museum experience for those who prefer it. For example, the British Museum in London has introduced digital guides, mobile apps, and interactive exhibits to enhance the visitor experience, while still maintaining their traditional focus on object-based displays (Satsumoto and Piao, 2016).

The National Museum of African American History and Culture in Washington, D.C. is an example of a museum that has successfully diversified its content to appeal to different groups. The museum includes digital interactive exhibits, immersive experiences, and a range of programming to appeal to different ages and backgrounds (Banks and Banks, 2016). This approach is important as society becomes increasingly diverse, and museums must cater to different visitor needs and preferences.

The changing demographics of society also present a challenge for museums, as the population is ageing at the same time as the population of millennials is growing. Museums must cater to the needs and preferences of both groups, which can be achieved through the use of different presentation styles and technologies. For example, the Cleveland Museum of Art has incorporated augmented reality and virtual reality into their exhibitions to appeal to younger audiences, while also offering traditional guided tours for older visitors (Dafoe, 2019).

In summary, museums must find a balance between traditional and digital presentation styles to appeal to different groups in society. By diversifying their content and using a range of presentation techniques, museums can engage visitors of all ages and backgrounds, ensuring their continued relevance and appeal in the 21st century.

Collaborative Curation

Visitors increasingly seek personalized and interactive experiences, museums are adopting new approaches to curation that involve the public in the creation of exhibits. For example, the Museum of Contemporary Art in



Figure 1: Exploration of 3D artworks using photogrammetry, allowing you to zoom and manipulate gesture-based 3D projected models to see all angles of an artwork. (ehirsch, 2017).

Los Angeles has launched a project called “We Rise” that invited community members to share their stories and collaborate with artists to create murals and installations that address mental health issues (knight, 2019). The National Museum of Natural History in Washington, D.C. has also adopted a collaborative approach by inviting the public to participate in a digitization project that aims to make the museum’s collections more accessible and engaging (Magazine, 2020).

This approach has led to a more engaging and interactive museum experience, allowing visitors to contribute their own perspectives and experiences to exhibits. By involving visitors in the creation and curation of exhibits, museums are able to create a more meaningful and personalized experience for visitors.

Changing Cultural Expectations:

The British Museum in London is an example of a museum that has had to adapt to changing cultural expectations. The museum has faced criticism over its collection of artefacts from other cultures and has taken steps to address these issues, including adding more context to exhibits and providing additional information on how objects were obtained (Hicks, 2021). This is important as museums must constantly re-think their focus and relevance to changing cultural expectations.

The Creators’ Movement

The Smithsonian Institution in the US has been at the forefront of using 3D printing technology to enhance the museum experience. The institution has used 3D printing to create replicas of objects in its collections, allowing visitors to touch and interact with these objects in a way that was previously impossible (Wilson et al., 2017). The institution has also used 3D printing to create models of archaeological sites, providing a new way to understand and engage with these sites.

The Creators’ Movement, with its emphasis on technology and innovation, has disrupted traditional approaches to curation and presentation in

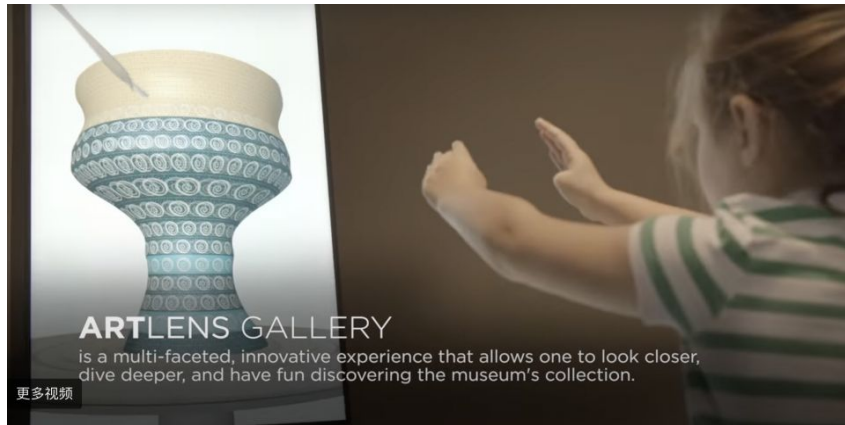


Figure 2: Artworks, including 3D objects, in the space are scannable using the “Scan” feature in the ArtLens App, allowing you to access even more interpretive content. (ehirsch, 2017).

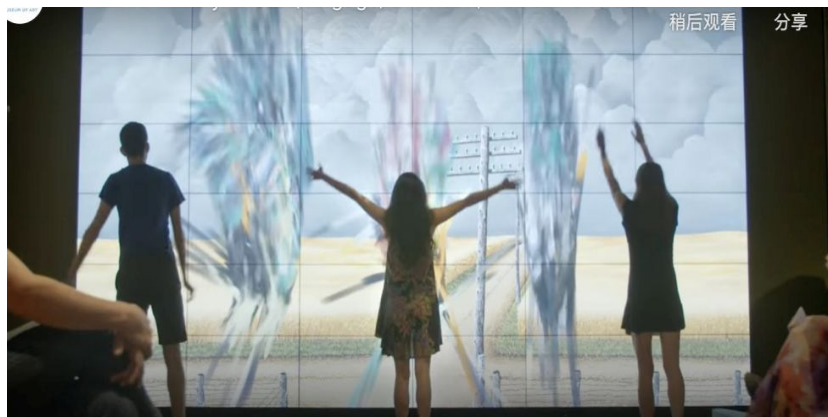


Figure 3: Body language: visitors guess the different emotions expressed by figures in an artwork by mirroring the poses of each figure. By matching gesture with emotion, visitors realize the narrative of an artwork through the interaction between the figures. (ehirsch, 2017).

museums. By leveraging emerging technologies such as 3D printing, augmented reality, and virtual reality, museums can offer new ways for visitors to engage with exhibits and artifacts. These technologies offer museums the opportunity to create more immersive and interactive experiences that cater to a diverse range of interests and learning styles.

The Smithsonian Institution in the US has been at the forefront of using 3D printing technology to enhance the museum experience. The institution has used 3D printing to create replicas of objects in its collections, allowing visitors to engage with these objects in a tactile and interactive way. The museum has also used 3D printing to create models of archaeological sites, which provide visitors with a new way to understand and engage with these sites.

In addition to 3D printing, virtual and augmented reality technologies offer museums new opportunities to create immersive and interactive experiences.

The American Museum of Natural History in New York, for example, has used virtual reality to create a vivid and realistic exploration of animal habitats. This approach not only engages visitors in a more meaningful way but also allows for new educational and conservation opportunities.

The Museum of the Future in Dubai provides another example of how the Creators' Movement has influenced museums. This museum focuses on using technology and innovation to address pressing global challenges, such as climate change and sustainable development. By incorporating interactive technologies such as augmented reality, the museum creates personalized and dynamic experiences for visitors that inspire them to take action towards a better future.

Overall, the Creators' Movement has opened up new possibilities for museums to engage with their audiences and stay relevant in a rapidly changing digital landscape. By embracing emerging technologies, museums can create more dynamic and interactive experiences that cater to a diverse range of interests and learning styles.

CONCLUSION

Museums face significant challenges in navigating the digital landscape, and must constantly adapt to remain relevant and engaging to visitors. The potential of 3D printing technology to enhance the user experience and engagement with museum collections is significant. However, museums must also diversify their content, collaborate with visitors and adapt to changing cultural expectations. By doing so, museums can remain relevant and engaging in the 21st century.

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