NMDC response to DCMS Commons Inquiry into the growth of 'immersive and addictive technologies'
January 2019

1. The National Museum Directors' Council (NMDC) represents the leaders of the UK's national collections and major regional museums. Our members are the national and major regional museums in England, Northern Ireland and Scotland, the British Library, the National Library of Scotland, the National Archives and Royal Botanic Gardens Kew. NMDC acts as an advocate on behalf of members and their collective priorities and provides them with a valuable forum for discussion and debate and an opportunity to share information and work collaboratively. While our members are funded by government, the NMDC is an independent, non-governmental organisation. For more information about NMDC and our activity see our website: www.nationalmuseums.org.uk

Introduction

2. NMDC welcomes the opportunity to respond to the DCMS Commons Inquiry into the growth of immersive and addictive technologies. This response does not address all questions in the inquiry, only those most relevant to the museum sector, focusing on the section 'the wider uses of gamification and VR/AR'.

3. Digital engagement with museums' collections, digital content and staff expertise is ever-growing, and as technology develops, audience expectations of how they are able to engage with museums digitally is changing. Making digital part of everything a museum does – from fundraising to collections management – is both a challenge and an opportunity.

4. Museums provide a wide range of opportunities for visitors to engage with their collections, from the physical museum experience, to increasingly online collections, touring exhibitions, virtual experiences, augmented reality and online activities such as games. New technologies are increasingly being adopted by the sector to enhance the museum experience and reach new audiences.

How is "gamification" being used to promote positive outcomes?

5. Interactive games are proven ways of engaging audiences with science collections and science concepts. The Science Museum has incorporated interactive elements in the visitor experience dating back to the 1930s. In recent decades the museum has introduced digital games as part of its core offer, both in the museum and beyond its walls online and in app form. These games present complex content, underpinned by real science in a fun and engaging way and can be hugely popular. The museum's free games apps have had over 2.8 million downloads and its online games receive over 50,000 visits per month.[1]

6. Tate developed Tate Kids[2] with a range of games and interactive features to encourage children to learn about or enjoy art through play. The games area is a very successful section of Tate Kids and is the most common entry point to that part of the website.

---

[1] https://www.sciencemuseum.org.uk/games-and-apps
[2] https://www.tate.org.uk/kids/games-quizzes

Children who arrive at Tate Kids are most likely to come because they have searched for online games, not for art, so this entry route offers them a way into art and creativity, as well as Tate collections.

7. National Museums Scotland has developed a range of game-based projects over the past few years. 'Capture the Museum' uses gamification to create a live team game played out across the museum space[3], and GEN is an online game where visitors learn about biological objects from the museum catalogue to diagnose and treat an online creature.

How are other industries and art forms using gaming and VR/AR?

8. The Science Museum is actively exploring ways in which it can bring its collections to life using immersive technology. The collections have powerful stories to tell about the formation of the modern world and what the future might bring. Immersive technology is uniquely positioned to address this challenge in ways that deeply engage audiences. The Science Museum has produced two virtual reality experiences and is part of a successful consortium to deliver a mixed reality experience as part of Innovate UK's Audiences of the Future funding stream. Space Decent VR with Tim Peake[4] retraces the astronaut's 400km journey back to earth in the Soyuz capsule. It was developed to coincide with a major tour of the Soyuz spacecraft by Samsung and the Science Museum.

9. Tate has produced a selection of 360 videos; best viewed on a mobile device, the films provide viewers with an immersive view of two key artist studios, the architecture of Tate Modern, and a curator's tour[5]. Tate has also produced one fully immersive VR project – The Ochre Atelier. This recreated Modigliani's final studio in room-scale VR with embedded narration from letters and diaries and curator comments. All of these pieces were designed to enrich visitors' experience of visiting Tate and/or viewing art. They provide context and interpretation by giving people the sense of being transported to an artist's time and space, or into a conversation or experience they couldn't otherwise have. These pieces have been extremely well received by visitors. In particular the Modigliani VR experience demonstrated an increased Net Promotor score for the exhibition, and was of particular interest to people visiting as part of a family group. Tate had over 72,000 users of the VR during the exhibition, approx. 23% of the total exhibition audience. Of those around 50,000 were experiencing VR for the first time and valued Tate as a safe space to do it.

10. The V&A's 'We Wear Culture' project[6], took one object – a Vivienne Westwood corset from her 1990 Portrait collection – and considered it in 360 degrees, both physically and metaphorically, as it stars in a virtual reality (VR) experience. The VR experience explores how humans go to extraordinary lengths to refashion their bodies. The V&A has also worked with Google to create ultra-high-resolution Gigapixel images[7] from key pieces from its fashion and Asia collections to reveal details previously hidden to the naked eye.

11. The Natural History Museum has recently used virtual reality to provide unprecedented access to the museum's most precious specimens. Hold the World, commissioned by Sky VR Studio takes visitors behind the scenes of the museum on a guided tour by Sir David Attenborough, recreated as a lifelike 3D hologram.[8]

---

[3] http://www.capturethemuseum.com/

[4] https://www.sciencemuseum.org.uk/see-and-do/space-descent-vr-tim-peake

[5] https://www.tate.org.uk/art/360-video/new-mexico

[6] https://www.vam.ac.uk/blog/digital/we-wear-culture-a-new-virtual-fashion-experience

[7] https://artsandculture.google.com/partner/victoria-and-albert-museum

[8] http://www.nhm.ac.uk/discover/news/2018/march/explore-the-museum-with-sir-david-attenborough.html

12. The National Gallery has committed to a 5 year investment in its digital transformation, placing digital at the heart of the organisation and strategic planning. The Gallery has had particular success combining elements of existing platforms on projects such as Sunflowers Live[9], which utilised a Facebook Live relay to five venues around the world each with a version of Van Gogh's famous painting alongside a 360 virtual gallery that brought the paintings together for the first time. Partnerships have been an important factor in helping to realise ambitious technical delivery of more playful experiences in the Gallery, for example working with Google Arts & Culture on the Credit Suisse Exhibition Monet & Architecture. Trial experiments working with Smartify are bringing more readily accessible interfaces to visitors, who can now scan paintings and use existing mobile AR features to explore content.

13. The National Gallery is also a content challenger on the recently awarded StoryFutures project[10], funded by the Arts and Humanities Research Council (AHRC) through their Creative Clusters Programme. StoryFutures is led by Royal Holloway and brings together academics, audio-visual and creative technology experts with partner institutions to create compelling content and story experiences in next generation technologies. The resulting project - Visualising Veronese - will explore new innovative ways of using digital to share research about the Gallery's collection with a wider audience by using digital to reunite paintings with their original context. The Gallery is also demonstrating its commitment to new technology by creating an innovation lab to explore new models for the display and consumption of art over the next three years.

14. UKRI has recently announced new support for research in the area of immersive technology as a commitment in the Industrial Strategy for the 'Audience of the Future Fund'[11]. The highly competitive 'Demonstrator Programme' is providing £18 million to industry-led consortia in the creative industries to create new immersive experiences and test them with large audiences. Two national museums are involved in one of the winning Audience of the Future bids. A pioneering collaboration led by creative content studio Factory 42 and including the Science Museum Group, Natural History Museum, Almeida Theatre, and the University of Exeter will look at how AI and mixed reality will shape the way we consume science and culture and reimagine the future of museums by using storytelling and cutting-edge technology that will allow visitors to experience them like never before.[12]

What are the limitations of 'gamification'?

15. The use of the term 'gamification' doesn't necessarily capture museums' approach to digital engagement and immersive experiences though the use of games in museums is a common way of engaging visitors and online audiences. Some projects do use game mechanics or an element of game play, but many more rather seek to allow visitors to experience museum collections in a new way or to explore objects and environments in greater depth.

16. Barriers to further adoption of VR/AR experiences in a museum can include availability of hardware and the restrictions of increased need for staff to be on hand to deliver meaningful experiences, as some studies have found[13] that if visitors are 'left to their own devices' they can be much less willing to engage, e.g. if they have to download an app or go to a website to unlock an experience. Unless working with a technology partner, museums may face barriers to being able to resource portable devices for self-guided

---

9 https://www.nationalgallery.org.uk/about-us/press-and-media/press-releases/van-gogh-sunflowers-facebook-live

10 https://storyfutures.com/

11 https://www.ukri.org/innovation/industrial-strategy-challenge-fund/audience-of-the-future/

12 https://blog.sciencemuseum.org.uk/reimagining-museums-for-audiences-of-the-future/

13 https://theconversation.com/augmented-reality-promises-to-rescue-dying-museums-so-why-dont-visitors-want-to-use-it-107845

digital experiences. There is also a challenge around how to create a shared experience for groups, perhaps with multiple devices, or sharing one device.

17. Though some projects such as Tate's Modigliani studio and the Science Museum's Space Descent VR attracted large audiences, other museums have only been able to offer immersive experiences to much smaller audiences, often due to the need for more physical space to accommodate activities and the cost of set up and running. However, some museums have piloted small scale VR projects as a way of experimenting with the technology and to learn more about how these new activities can be incorporated into the existing museum experience, with a view to developing them further.

18. Many museums expect to look more to immersive technology in the future, but take-up will be dependent on access to funding and suitable tech partners to facilitate development. Further adoption of these technologies will also depend on the nature of each museum's aims and their assessment of whether immersive technology is an appropriate fit with their collection and social purpose. Although immersive experiences seem like a natural fit for museums, with such a great wealth of content and stories available, the reality is often that funding production to a high enough standard can be prohibitive, especially for smaller museums. The current formats through which museums can engage audiences with technology may also limit adoption until they can be replicated on a mass scale for a larger audience. However, there is a great willingness to explore further projects, especially as the technology develops, becomes more affordable and adaptable.

How successfully is the Government's 'Culture is Digital' agenda advancing immersive technologies?

19. The Digital Culture Project signalled a welcome focus and acknowledgement from Government of the importance that digital could play in the future of the culture sector.

20. The commitments in 'Culture is Digital' for Arts Council England and Heritage Lottery Fund to give added focus to digital skills development, and to centre some grant funding around digital capacity was welcomed. The commitment for the National Archives to 'develop a new strategic approach to the digitisation and presentation of cultural objects' was also a useful step in ensuring the future digitisation of museum objects is approached in a strategic way. However, the report could have gone further to address the long-term digital infrastructure needs of the museum sector, as outlined by NMDC in evidence submitted for the 2016 Culture White Paper.[14]

21. The museum sector needs to meet long term challenges of macro collections management, digital preservation, digitisation and digital engagement by consideration of the wider digital infrastructure of the sector, rather than a project-by-project approach. Creating a shared digital infrastructure would mean that the public will be able to find content they are interested in without having to visit each individual museum's website. Investment in a core service platform (along the lines of Culture Grid[15]) would provide suitable infrastructure to pool data and make it available for re-use elsewhere, such a platform would be of particular benefit to smaller and medium-sized museum collections who may lack the resource to build their own database. A core service platform would encourage the creative re-use of collections information by developers, curators and the public.

---

[14]
https://www.nationalmuseums.org.uk/media/documents/responses_position_statements/culture_white_paper_submission.pdf
[15] http://www.culturegrid.org.uk/

22. Making high-quality digital copies of collection items increases public access, but is also an essential conservation strategy. Digitisation reduces the wear and tear on the original material and is often the only way to preserve content before the physical artefact degrades beyond use. Large-scale digitisation requires large-scale digital storage and on-going digital preservation strategies to ensure the resulting content is kept future-proofed. Many museums have digitised discrete parts of their collections, many with external funding from corporate partners or trusts, however with vast quantities of collections not currently available in digital form, more resource is needed.

In case of any queries regarding this response or if you require any further information please contact Kathryn Simpson, Policy and Projects Manager, National Museum Directors' Council: kathryn.simpson@nationalmuseums.org.uk / 020 7942 4076.