

A Review of Interactive Displays in Museums

Active Design Research for Experience Design II Project

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Introduction

Museums maintain a special significance in many cultures, housing great collections of artefacts, or serving an educational function to the greater public. Over time, museums, much like any institution, have had to adapt to continuous changes in technology. Museums also must maintain insight into how technological-based learning has changed, as this directly alters perspectives of content delivery and educational expectations of their exhibits by varying generations of patrons.

As Gillette, O'Brien, and Bullard point out, "The use and application of technology in museum spaces is not a new occurrence. Much like libraries, technology has been evolving in museums for some time." They continue to explain that as early as 1903, "art historian, Dr. Lichtwark, envisioned a "great revolution in the equipment and methods of museums," (Griffiths, 2003) and curators and museum staff communicated the need to make museum exhibits and spaces more accessible to the public." (p. 584, 2011)

The museum space becomes a perfect setting for testing new ideas and research based around technological advancements. Museum patrons often visit a museum hoping for a certain spark of inspiration, or educational fulfilment, and a good museum will satisfy their curiosities. Experience design becomes an important feature for employing these technologies and creating memorable experiences for visitors. There is a large amount of research done into how museums effectively use the technology to create these experiences. Also discussed will be how one museum, the London Science Museum, has enticed its visitors with interactive experiences.

Significant Research

A large portion of the research available in the area of museums implementing interactive technologies is in the form of creating, implementing, and studying the effects of technology in one museum at a time using a specific technology. One study, however, did comparatively explore several different technologies to measure the effectiveness of one over another. This paper also categorises common types of interactive displays, including virtual reality, augmented reality systems, haptic displays, and multi-touch tables. They also included a control group using a traditional exhibit and paper-based map. (Michael, Pelekanos, Chrysanthou, Zaharias, Hadjigavriel, & Chrysanthou, 2010) This study focused on children aged 9-10, which is particularly relevant to the user group of the application design of the Experience Design group project, currently known as Sesame¹.

The group project is a projected experience, simulating multi-touch, in the form of a table or some other surface. The relevant research also includes a few examples of projected displays or multi-touch tables, with one in the form of a wall installation as a virtual reality tour, and in the same research study the same content as a multi-touch table. (Michael et. al., p. 251 & 253, 2010) Both the VR tour and the table were favourable amongst the children, though the table was the overall favourite. One other study also reviewed an interactive table, which

¹ Experience Design II Group Blog: Retrieved from <http://www.jahe.posterous.com/>

appealed to museum-goers, stating that it “served well for small groups of visitors.” It also facilitated spontaneous learning and discussion as they gathered around it. (Flavia, 2004)

London Science Museum

Relevant field research led to a couple of visits to the Science Museum in London. Science museums, like this one, are generally interactive by nature, with plenty to educate and to entertain people of all age groups. A symbol on the map noted some exhibitions as interactive areas where people are welcome “to touch.” The interactive exhibits seemed especially designed for a younger audience in mind, incorporating various hands-on activities. It is important to point out that in the context of a science museum, interactive exhibits do not always refer to “screen-based” displays, and they can be physical objects or displays often experienced without the help of digital technology.



Figure 1: "Do Not Touch" - Part of an interactive exhibit on electricity. A nearby kiosk does explain the installation, but the true interaction comes from touching the pole, which emits electricity.

Though sprinkled throughout the museum were plenty of examples of digital kiosks or touch-screen displays. One exhibit called *Antenna* allowed users to share opinions about a few pre-defined questions. Museum patrons can “like” or “vote” on any of these issues. They are even encouraged to “share” the stories (though only via email).

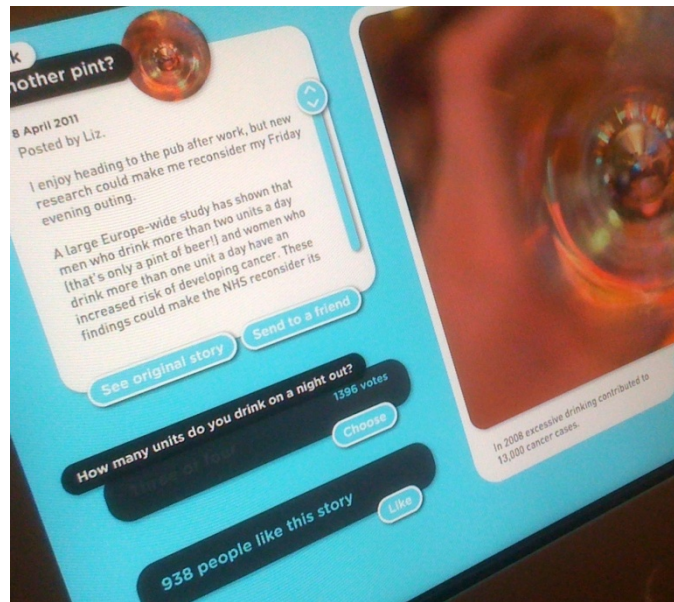


Figure 2: "Antenna" - Allows users to share comments, like articles, and send information to an email address.

In another part of the *Antenna* exhibit was a small gallery of recycled clothing, entitled *Trash Fashion*. A nearby kiosk enhanced the physical objects with a digital gallery of clothing examples, displayed from online sources. A least one item was pulled from Flickr² and displayed in the digital gallery, but it is unclear what other sources the museum used.

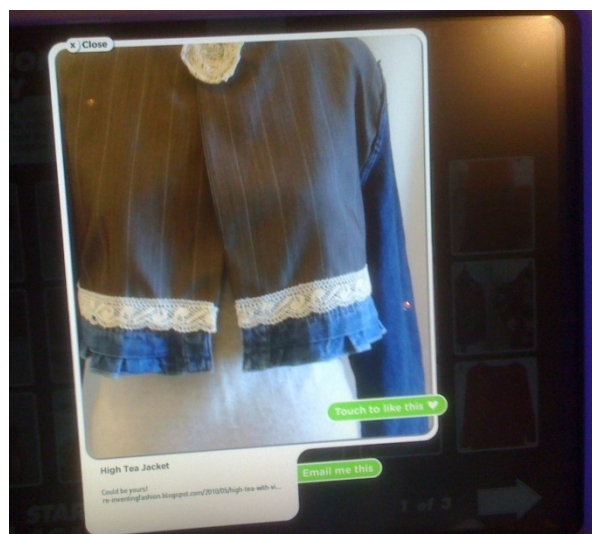


Figure 3: "Trash Fashion" - Digital kiosks allow users to vote up things they would like to see in the museum from a gallery, this item from another user's Flickr page.

The exhibit called *Cosmos & Culture* matched museum objects up with enhanced digital information using several kiosks. These kiosks allowed users to highlight an object that interests them to find out more information.

² Flickr: Retrieved from <http://www.flickr.com/>

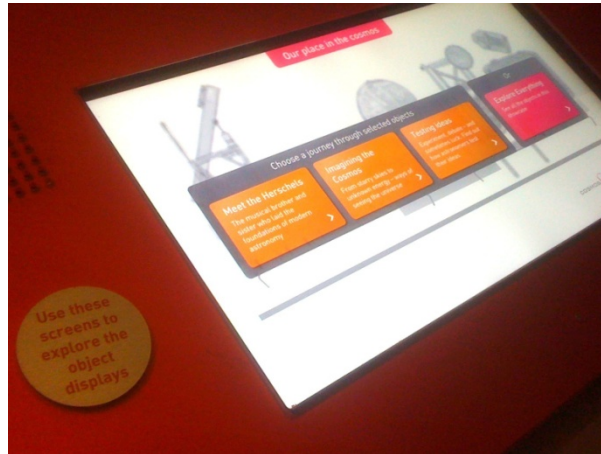


Figure 4: "Culture & Cosmos" - An example of kiosks being used to explain physical artefacts in the museum.

These were only a few examples; however, the digital kiosks and exhibits did range in variety and to what limits there were in types of interactivity available to the user.

Conclusion

The interest in user-centred design and interactive digital technology is a natural fit for many museums. The enclosed exhibits allow designers to focus on the most relevant content for the user and to enhance existing physical artefacts. Their appeal to a general audience also allows them to experiment and innovate without much disruption in user expectations. Research in this area will continue to grow as the technologies shift. Many museums are already investing in 3D or 4D exhibits, or haptic and immersive technology to create multi-sensory experiences for their patrons.

References

- Flavia Sparacino. (2004). Scenographies of the Past and Museums of the Future: From the Wunderkammer to Body-Driven Interactive Narrative Spaces. *Proceedings of the 12th annual ACM international conference on Multimedia, MULTIMEDIA '04* (p. 72–79). New York, NY, USA: ACM. doi:10.1145/1027527.1027541
- Gillette, E., O'Brien, H. L., & Bullard, J. (2011). Exploring technology through the design lens: a case study of an interactive museum technology. *Proceedings of the 2011 iConference, iConference '11* (p. 583–590). New York, NY, USA: ACM. doi:10.1145/1940761.1940840
- Griffiths, A. (2003). Media technology and museum display. *MIT Communications Forum*. Retrieved May 21, 2011 from <http://web.mit.edu/comm-forum/papers/griffiths.html>.
- Michael, D., Pelekanos, N., Chrysanthou, I., Zaharias, P., Hadjigavriel, L. L., & Chrysanthou, Y. (2010). Comparative study of interactive systems in a Museum. *Proceedings of the Third international conference on Digital heritage, EuroMed'10* (p. 250–261). Berlin, Heidelberg: Springer-Verlag. Retrieved from <http://portal.acm.org/citation.cfm?id=1939603.1939626>