Abstract of the Master Thesis

Master's Degree

International Project Management

(Building, Real Estate and Infrastructure)

Enhancing user experience in exhibitions through the implementation of augmented reality technology

Challenges and opportunities augmented reality technology introduces to the exhibition design field

Submitted by: Raya Hiyasat
Matriculation no. 810725

Submission date: 21.01.2019

Supervisors: Prof. Christine Kappei
University of Applied Sciences Stuttgart

Prof. Eberhard Schlag
Atelier Brückner GmbH Stuttgart
Title of the thesis: Enhancing user experience in exhibitions through the implementation of augmented reality technology. Challenges and opportunities augmented reality technology introduces to the exhibition design field.

Author: Raya Hiyasat

Supervisors: Prof. Christine Kappei

Prof. Eberhard Schlag

Submission date: 14/01/2019

Publisher: Hochschule für Technik Stuttgart / University of Applied Sciences

Topic: Stakeholder Management

Word count: 490

Abstract

Throughout history, the museum sector has turned to a variety of traditional methods in order to mediate available content to their audience within their exhibition spaces, including the support of 2D graphics and visuals, posters and guided tours along with the authentic tangible exhibits. However, the emergence of new technologies such as Virtual Reality (VR) and Augmented Reality (AR) in the last decades has presented the sector with advanced methods of communicating available information and potentially enhance User Experience (UX) and achieve better public engagement.

The technology of VR is conceptually a 3D alternative reality that produces a fully synthesized environment with the aid of technology. Furthermore, AR deals with the superimposition of virtual layers as informative visuals that seem to co-exist within the boundaries of physical reality. Mixed realities (MR) are a combination of both VR and MR in an advanced interactive level that allows for a highly immersive and intuitive experience for users of the exhibition.

The research question is: “How can the implementation of augmented reality technology in exhibitions enhance user experience?”
The integration of new technologies adds extra challenges as well as opportunities to the exhibition design and planning phase. Challenges include the high emerging costs, limited exhibition space, complex curator-designer-technologist relationships, technical shortcomings of the hardware (VR and AR hardware are until today in need of becoming more accurate, less bulky and more user friendly), funding opportunities to sustain development, conservative concerns, social acceptance as well as proper target user identification. In order to create meaningful user experiences involving the Implementation of Information and Communication Technologies (ICT) such as VR and AR, all involved project parties need to work collectively and in an interdisciplinary team with clear objectives, specifications and guidelines at all times.

Research objectives include the analysis of existing methods and practices related to UX design in museums, VR and AR technologies and the correlation between AR technologies in enhancing the experience of users in exhibitions. In order to fulfill primary objectives, the research adopted a qualitative method to collect data through semi-structured interviews with pre-set open-end questions to get the experts' opinion on the topic. Second qualitative method adopted by the researcher was the documentation of social field observations as well as opinions in order to get the other perspective of exhibition users on the topic as well.

Practical implications of the research mainly indicated the importance of AR as a distinctive informal learning as well as an enjoyable tool in an exhibition environment. Curators and designers need to work collaboratively to create meaningful user experiences that prioritize the content over the technology, where the AR implementation is merely an add-on to the original experience. Establishment of hardware ease of use and user-friendliness was another strong implication, as well as proper technology infrastructure early on in the design phase. Moreover, it is vital to keep up with the new technological trends arising in the market in order to specify the right ICT tool for the exhibition design field in the future.