Chapter 13
Employing Real–Time Game Technology for Immersive Experience (VR and Videogames) for all at MAIO Museum:
Museum of WWII Stolen Artworks

Giuliana Geronimo
Streamcolors srl, Italy

Salvatore Giannella
Independent Researcher, Italy

ABSTRACT

3D real time game technologies create an opportunity to design interactive immersive experiences developing affordable, easy-to-use, and incredible virtual worlds for Museums. This chapter presents the potential of these technologies for the development of edutainment content for their visitors at MAIO - Museum of Art Taken Hostage in Cassina de' Pecchi (Milan). The Museum presents the story of 1,623 masterpieces such as Michelangelo, Tiziano, Raffaello, and Canaletto that were stolen in Italy during World War II and never found again. Visitors can explore the artworks through 2 installations: MAIO Virtual Museum, through VR inside an oniric 3D environment, and MAIO Play, a multiplayer video game.

METHODOLOGY

Between 2016 and 2018, in order to identify the number of works still prisoners of war (1,622), the authors, commissioned by the MAIO Museum, carried out enormous research work to update the list drawn up by Rodolfo Siviero[1], on commission from the Italian government in the first post-war period.

Works of art already identified by Siviero as having been returned to Italy immediately after the war or illegally exhibited abroad were excluded. The Carabinieri Headquarters for the Protection of Cultural Heritage (TPC), is the most efficient military police force in the world for the protection of works of art, have been contacted for an updated list of recently found works of art. Museums, ecclesiastical institutes and the common owners of the missing masterpieces have been contacted, asking for confirmation of the theft. Books and newspaper articles on the subject were read. In this way, the list of 1649 prisoner-of-war works from Siviero has been updated to 1622, excluding the 27 known masterpieces (*Tables 1-4*).

After updating the list, the authors identified the most emblematic works among those still prisoners of war and those found and asked the owners for permission to use the high-resolution images of the works for educational purposes, especially thinking of applications for the new generations.

Thus was born the gallery of 33 images of the works of art visible at MAIO:

27 images in black and white (masterpieces still prisoners of war) and 5 in color (masterpieces found).

To tell this page of history to the new generations, so that they could become aware of the theme, we chose a strategy that, at the same time, could allow you to discover and reinvent in a fun way the initial content.

In fact, the innovative use of technology and the fun component stimulates curiosity and users' interest (…). However, the goal is not only for fun, but to improve the learning experience of the users[2].

An artistic and technical challenge[3] entrusted to the digital art studio Streamcolors chosen for its aesthetic signature and for its experience in finding creative, unconventional, simple and attractive solutions thanks to its long experience in the gaming industry, in 3D modelling and in the pioneer use of the Unreal engine of Epic Games (a software framework with a rendering engine to display textured 3D models and a physical engine for the interaction of objects[4]) in cultural sector.

In order to involve the public, especially thinking about the needs of today's public, we have chosen not to create a virtual museum application, but to create a set of engaging, educational and immersive experiences by developing a tool for creative reworking of images (*Stream Machine* software developed by Streamcolors) for the creation of personalized postcards, a Virtual Reality application and a multi-player video game available on site:

active experiences drive the individual's intention to continue participating actively after the visit, seeking information and revisiting the museum, following it on social networks and making recommendations on opinion pages[5].

BACKGROUND

The tools and experiences, developed for the MAIO Museum, to help visitors to become an active explorer, reflect 3 of the main trends of study of the theme Digital Heritage: co-creation to unleash creativity, Virtual Reality and videogames.

18 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/employing-real-time-game-technology-for-immersive-experience-vr-and-videogames-for-all-at-maio-museum/241605

Related Content

An Exploratory Study Examining Group Dynamics in a Hackathon
Alana Pulayand Tutaleni I. Asino (2019). *International Journal of Virtual and Augmented Reality (pp. 1-10).*
www.irma-international.org/article/an-exploratory-study-examining-group-dynamics-in-a-hackathon/239894

INSIDE: Using a Cubic Multisensory Controller for Interaction With a Mixed Reality Environment
Ioannis Gianniosand Dimitrios G. Margounakis (2021). *International Journal of Virtual and Augmented Reality (pp. 40-56).*
www.irma-international.org/article/inside/298985

An Interactive Space as a Creature: Mechanisms of Agency Attribution and Autotelic Experience
Ulysses Bernardet, Jaume Subirats Aleixandriand Paul F.M.J. Verschure (2017). *International Journal of Virtual and Augmented Reality (pp. 1-15).*
www.irma-international.org/article/an-interactive-space-as-a-creature/169931

A Review on Data-Driven Methods for Human Activity Recognition in Smart Homes
Jiancong Yeand Junpei Zhong (2022). *Cases on Virtual Reality Modeling in Healthcare (pp. 21-40).*
www.irma-international.org/chapter/a-review-on-data-driven-methods-for-human-activity-recognition-in-smart-homes/292398

Virtual Community Mentoring in Higher Education
Jamie S. Switzer (2011). *Virtual Communities: Concepts, Methodologies, Tools and Applications (pp. 1098-1104).*
www.irma-international.org/chapter/virtual-community-mentoring-higher-education/48726