

Casanova Museum & Experience: How to Integrate History with Virtual Reality in Order to Relive the Past

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Casanova Museum & Experience, commissioned by Casanova S.R.L. and the Casanova Foundation, was conceived, organised and produced by ETT S.p.A. It is a museum, created to renew the great emotions of eighteenth-century Venice through the life and the thoughts of that great writer, poet, adventurer and seducer, Giacomo Casanova.

Located in a typical gothic Venetian building, the fourteenth-century Palazzo Pesaro Papafava, this is the first museum in the world dedicated to the most famous Venetian of all.

The multimedia exhibition gives visitors experiential and emotional involvement. They become protagonists and part of Casanova's history. In the "Virtual Reality" (VR) room, with its 18 VR stations, visitors can get first-hand experience of Casanova's exciting adventures thanks to a 360° video, filmed from a subjective point-of-view, which traces the salient events of that period. Following the directions of the Superintendence of Venice, all the efforts of this museographic and architectural project were aimed at reducing size, weight and spatial impact of every exhibition element, in order to make the whole structure as flexible and modular as possible.

Opened on 2 April 2018, the Casanova Museum Experience has had good feedback from visitors of various nationalities and ages, encouraging us to continue with the use of cutting-edge technologies to enhance our cultural and historical heritage.

This paper illustrates the multimedia solutions designed and developed by ETT S.p.A, analysing them in terms of design, execution and use.

Keywords:

Museum, Virtual Reality, Storytelling, Innovation, History.

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INTRODUCTION

The project "Casanova Museum & Experience" is a museum created about Giacomo Girolamo Casanova (*Venice, 2 April 1725 – † Duchcov, 4 June 1798), the eighteenth-century adventurer, *bon vivant* and a great connoisseur of the feminine soul and the one who gave his name to the metaphor of being a seducer and libertine. This museum, commissioned by Casanova S.R.L. and the Casanova Foundation, was conceived and realized by ETT S.p.A. and wants to offer a new perception of Casanova the man, an eclectic and complex character, not completely understood even today.

The museum is located in a typical Venetian gothic building, Palazzo Pesaro Papafava, not far from the Grand Canal. The physical setup has been designed to blend with the architecture of the rooms of the building in order to create a timeless environment, where the visitor is guided by our storytelling and his own curiosity.

The exhibition layout has been created by mixing semi-transparent overlaid sheets, panels with graphics and high-resolution projections, curved and straight video walls. Video contents are synchronized with an automatic narrative audio guide, to ensure a free field of view during the visit. Multimedia contents have elements that encourage the movement and the direction of the visitors' flow, avoiding the risk of crowding. In addition to that, every multimedia unit gives historical information in the form of videos and audio tracks.

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In the most immersive moment of the visit, there is a Virtual Reality experience recorded in 3D in motion technology (see Fig.1): 18 Samsung Gear VR S7 offer visitors the opportunity "to be" Casanova, with a 360° subjective point-of-view video projection. Both the settings and the virtual re-enactments, alternating with interactive settings and interactive exhibits, are also moments of shared view and enjoyment. Each multimedia unit gives "didactic-informational" content in a different way and at different levels of depth. Videos, images and a collection of data and historical information on Casanova's life are included. The voice of Riccardo Rossi (Johnny Depp's Italian dubbed voice) accompanies visitors on the tour and audio guides in ten languages help visitors from all over the world discover the true life of Casanova.

So wearing the Samsung Gear VR S7 visors, spectators can jump into the past and experience a journey in the life of Casanova the eighteenth century Venice. Every scene has been filmed at the original locations with real actors wearing period costumes, to improve the feeling of being part of the scenario and to enhance the magic of the whole experience.

Following the directions of the Superintendence of Venice, all the efforts of the museographic and architectural project were aimed at reducing size, weight and spatial impact of every exhibition element, in order to make the whole structure as flexible and modular as possible.

The multimedia and interactive ETT set-up is enriched with Canon Italia Digital Imaging technologies and ABS Group textile architecture, which let users see and live a new perspective of narrated history.

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Fig. 1. The VR experience at Casanova Museum

CONCEPT, CONTENTS, AND THEORETICAL BACKGROUND

The traditional model of museum experience based on passive observation is definitely shifting towards active, interpretive engagement. Exhibits are no longer aimed solely at experts but must acknowledge the subjectivity of various types of visitor and perspective. This emerging trend is particularly evident in the popularity of interdisciplinary and inter-institutional collaborations. Museums are rethinking and reworking spaces in order to promote a deeper understanding of their collections and missions, greater interactivity, a fuller range of activities, and increased revenue stability [Cataldo 2011].

Over the last twenty years, audiences in museums, galleries, and performing arts institutions have decreased. Cultural institutions argue that their programs provide unique cultural and civic value, but increasingly people have turned to other sources of entertainment, learning, and dialogue. They share their artwork, music, and stories with each other on the Web. They participate in politics and volunteer in record numbers; they even read more. But they don't visit museum exhibits the way they once used to. Today, in the social media and hi-tech age, how can cultural institutions surprise the public and demonstrate their new cultural value and relevance in contemporary life? Visitors today are not passive consumers; they expect access to a broad spectrum of information sources and cultural perspectives, and to share and remix what they consume.

The goal of the Casanova Museum Project is to meet visitor expectations, delivering fine cultural content with diverse, personalized and changing modality offering a practical way to enhance, but not replace, traditional cultural institutions.

The innovative set-up combines technology and creativity to surprise visitors, stimulating curiosity and creating an educational experience. It also creates new physical and digital connections between the museum and the urban space where it is located. It generates new ways of interacting between visitors and the museum's layout, blending digital active narrative and passive elements to offer and create a strong emotional impact during the exploration of the narrative units. Virtual Museum Tours are steadily becoming more familiar. "Virtual Reality" (VR) has the power to transport users to places they might never be able to visit in real life, so welcoming digital visitors into the world's museums is a natural move. Some museums opt for virtual tours in the form of interactive online maps. Others choose to share image galleries or banks of 3D scans of their artefacts. Only VR, however, offers the most immersive experience, with a growing range of platforms offering more and more variety.

The new offering of the Casanova Museum & Experience museum visit consists of a project proposing an immersive environment in which the observer-participant is totally immersed and able to interact with the space around him; a mixed experience environment, therefore, in which real world and virtual world objects are presented together, in the same visit experience.

We have expanded the conventionally held interpretation of an "experience exhibition" or a "virtual museum" by proposing a new "immersive museum", with distinct solutions in "mixed experience" and different classes of hybrid display settings. To attract the Millennial generation to this new concept of museum we have used technologies and storytelling techniques familiar to them, creating a narrative path that is easy to follow and different levels of didactic detailing [Ioannides et al. 2017].

Studies indicate that adding techniques of sensory input – video, audio and touch – in both real and virtual immersive settings, can increase the sense of association with the objects, information and content offered by the museum. This increases the user's sense of presence and memory and creates a positive reaction to the visitor experience [Walker et al. 1999]. This consideration is the foundation on which this project is built, with much reflection on how content and narration should be elaborated. The result is emotional yet balanced storytelling, enabling visitors to re-experience the splendor of old Venice and Casanova's life.

With a system of settings constructed from semi-transparent backlit walls fixed to wooden frames, with shaped wall niches and ceilings, the exhibition is divided into six coordinated areas. The visit, elaborated in an "Immersive Theatre style", offers and creates an emotional impact that increases the journey through the narrative units. The multimedia set-up has been apportioned in order to show the most significant moments of Casanova's life, selected from writings about him as well as his own written documents.

The museography concept of the "Casanova Museum & Experience" envisages a multimedia exhibition where the visitor becomes the main character in Casanova's story, with a first-hand view of his world in his time.

The museum is developed in six rooms that retrace the life and youth of Giacomo Casanova, his travels, his literary works and the films he inspired. In particular, the museum is structured as follows:

Birth and youth

Giacomo Casanova was born in Venice on April 2, 1725. From early childhood Giacomo's life was a succession of adventures and misadventures. He lived in both luxury and destitution; with thieves, cheats and prostitutes, but also with aristocrats and men of court and culture.

This theme is set in the spectacular corridor. High-effect graphics on backlit fabric, with views of places, letters and portraits, end in an oval setting where an immersive video is shown on a curved wall, with ambient voice over.

Travels and society

Casanova is one of the most famous travellers to cross the borders and traverse the history of all mid-eighteenth-century Europe. Giacomo was an attentive witness and central character in an epoch-making moment of Western culture and civilization. The room is dedicated to the journeys and life of Casanova, told through a wall projection and a set of semi-transparent and inclined graphic panels. The explanatory panels with controlled location lighting recall the history of the narrative video and the most important cities visited by Casanova.

Venice, prison, and escape

Casanova led a dissolute lifestyle: he drank, cheated and had rather personal ideas about religion and politics. For this reason, he was arrested on July 25, 1755 and locked up in Piombi (Leads), the prison in Palazzo Ducale. In this room the visitors can try VR experience with eighteen VR seats, Samsung Gear VR S7, and a 360-degree subjective view video of Casanova's "life" in the Venice of 1753, with true citations and real actors in period costume.

Writer and man of letters

Casanova was the author of many books and pamphlets. The exhibition layout of the room meticulously reconstructs the literary and suggestive atmosphere of the author, with a wall projection and alternating immersive video settings and interactive exhibits on one big consultable "book". In this way, visitors can also learn about the literary talents of Casanova.

The myth and the cinema

Casanova is a very beloved character from the cinema thanks to the thousand nuances of his adventures life: memories, loves, misunderstandings, and mistaken identities, promises of marriage, political persecution, light comical jests and drama. The exhibition layout proposes two different cross projections on a backdrop of semi-transparent panels showing film clips and set images, and giving the visitor some good contextual knowledge of the cinematic production based on the Casanova myth (see Fig. 2).

The bedroom, eighteenth-century fashion

Fashion is an expression of the spirit of the time, but its social meaning differs greatly and depends very much on the style of society in which it is seen. Casanova lived in the eighteenth century, a time full of changes, evolutions and even upheavals in lifestyle. On walls of fabric panels, the graphic design project, including images and historical text, surround the luxurious original eighteenth-century bed that welcomes us to this area. Projections on the "secret mirror" and on the bed, interact with visitors, creating two dynamic levels of depth

The whole structure and museum proposal thus created add-ons to experiential and emotional visitor involvement. Using this innovative mix of technology and new models for accessibility and visitor flow management, the visitor experience turns into a great opportunity for vivid involvement.



Fig. 2. Illustrative panels show the main films about Giacomo Casanova

THE PROJECT

The project “Casanova Museum & Experience, promoted by Casanova S.R.L. and the Casanova Foundation, was produced by ETT S.p.A, appointed as the project and technological partner in January 2018. This project is the most complete multimedia museum experience in Italy. The exhibition layout mixes semi-transparent panels, panels with graphics and projections, and video walls both curved and straight. Original high-resolution images, essential graphic design and chromatic harmony, introduces and accompanies the visitor in eighteenth-century Venice. And with nine Canon projectors (Xeed Wux450ST, 4500 ansi lumen, 16:10, with optics 0.56:1), one Canon projector (Xeed6010 - RS-IL03WF, 6000 ansi lumens, 16:10, with optics 0.8-0.85:1) and eighteen Samsung Gear VR S7, the Casanova Museum Experience offers an incredible and complete immersive experience.

Museums stimulate curiosity and create educational experiences by providing access to collections and fostering a range of interpretations. Audience engagement is an important aspect of the museum’s value as a repository for knowledge. Today, many visitors want museums that present content in newly considered, thought-provoking ways. It is the key to relevance and audience engagement [Ioannides et al. 2016].

ETT, with this important project, has executed the whole panorama of an Italian museum visit, offering innovative architectural solutions but respecting the historical and cultural constraints of the location. A residence of enormous artistic and historical value, Palazzo Papafava, in which every solution had to smoothly integrate the original surroundings, blended traditional methods of use with innovative digital solutions, creating a very immersive setting. The design of a museum is always an opportunity to enhance a transformative visitor experience. Architecture frames the visitor’s path and exhibitions, and as such needs to participate organically in the experience.

Various museum spaces were designed to fit in with the interior rooms of the building and create a path through the exhibition topics (see Fig. 2) Illustrative panels with attractive theme graphics and videos feature in a specific audio ambient, making interaction with information and content easy, proposing pictures, information and historical original texts on Casanova's life for a highly immersive visitor experience.



Fig. 3. One of the rooms of the Museum where next to paintings depicting Giacomo Casanova are the clothes that belonged to him

Furthermore, narrative videos are synchronized with an automatic narrative audio-guide, for a completely free view experience.

This experience and these solutions, mixed with the virtual reality, gives visitors a new kind of visit experience: a visit leading to in-depth knowledge of the history and the life of Giacomo Casanova, a man who, moving between courts and salons, touched a moment of epoch-making change in history.

The complete experience lasts approximately forty-five minutes, with visitors in each of the six areas for about seven minutes. This means no more than five minutes of content in each area, plus two minutes to move from one area to the next.

The multimedia content has elements that encourage movement and the visit-flow direction, thus avoiding the risk of crowding and the consequent reduction of quality and enjoyment of the exhibits.

In order to create an emotional and immersive context, the areas follow a logical narrative thread and, although physically separated, they are continuously bonded by storytelling. Casanova himself tells the story, as though he were talking to a friend about a dream. He is both the protagonist and storyteller.

The on-site visit is in Italian, but foreign visitors can use audio guides in 10 different languages: English, French, Spanish, German, Czech, Russian, Chinese, Arab, Portuguese and Japanese.

Each exhibition area is self-contained: it starts and finishes with a separate chapter of the story of Casanova's life or with a specific theme. Once the visit to each room finishes, visitors are invited to proceed to the next one. Each room has large immersive projections, accompanied by *ad hoc* sound design and narrative voice-over.

Particular attention is given to the management of usable physical space and visit flows, and the visit path is designed to manage visitor movement. The visit experience is freestyle and can be customized by visitors. Up to

20/25 people may visit each area at the same time, while the timing is controlled by the duration of the audio-visual content and the coordination of visit flows from area to area.

Apart from the actual content, each area has an introduction and a conclusion. This keeps the emotional element and the narrative continuity active while moving from one area to another.

The Multimedia content also encourages movement, thus avoiding the risk of crowding and the consequent reduction in quality and enjoyment of the exhibits.

Area 3 is the most particular area in the museum. Each visitor is given a Samsung Gear VR viewer that, combined with a Samsung S7 smartphone, allows users to enjoy Virtual Reality content and experience the real life of Giacomo Casanova. Wearing Samsung Gear VR visors, spectators are greeted with a 360° filmed view of eighteenth-century Venice. They can live the experience of being in Venice in 1753, in the role of Casanova, having coffee and conversing with Zuane Matteo Bragadin, entering a ballroom during a masquerade, living the experience of being arrested and imprisoned. Everything was filmed with real actors in period costume, in the original locations, in order to add the overall sense of being part of the scenario and improve the magic of the whole experience.

Finally, the Casanova Museum & Experience project also offers a dedicated App with a geo-localising function. The routes and 19 suggested POIs lead the visitor on an exclusive discovery of the city of Venice through the places where Casanova really lived through his adventures.

Here the visitors can see the life of a man without time. Using technology, the museum can meet the new needs of Italian and foreign visitors, making content available in a new way, touching emotions.

Here are some of the objectives of this new perspective of cultural diffusion:

- Combine technology and creativity to surprise the visitor, stimulating curiosity and creating educational experiences by providing access to information, while fostering a range of new ways to view history;
- Stimulate new connections, physical and/or digital, between the museum and the urban space in which it is located, using a dedicated App with a geo-localized function. The routes and the 19 suggested POIs lead the visitor on an exclusive discovery of the city of Venice;
- Imagine forms of visit personalization relative to the varying needs of each visitor, offering different content and modalities in accordance with the personal preferences of visitors;
- Create new ways of interaction between visitors and the museum with an innovative layout, blending digital narrative with interactive and passive elements to offer and create an emotional impact when exploring the narrative units;
- Take care of the pre and post-visit phases with an innovative app and dedicated website;
- Start a dialogue between exhibits and visitors, putting the visitors as much as possible into an emotional and immersive context;
- Involve new generations through technologies and methods familiar to them with fast and simple management of narrative units, wall-videos or special audio-guide functions (didactics – information) to offer content in a different way and at various levels
- Contaminate narrative languages in an "Immersive Theatre style".

The entire project is modular and completely achievable, making it suitable for changes in the world of museums and technology. Since the entire multimedia exhibit must always be able to harmonise and adapt to target analysis, new potential audiences are profiled, and content is created in line with user expectations.

CONCLUSION

Today visitors are no longer passive consumers: they expect access to a wide spectrum of information sources and cultural perspectives. While living an immersive experience, people feel more active and more interested in

discovering new things and sharing them with family and friends. This new kind of visitors not only wants to be intellectually stimulated but at the same time wants to be emotionally engaged [Carrozzino and Bergamasco 2010].

We can use immersive technologies as a way to promote more understanding in the museums, by literally showing how it feels to be in someone else's shoes. By bringing people right inside an historical event, the content provokes strong emotional reactions. This virtual add-on is perceived close to reality, verisimilar, and therefore easier to memorize in form of stories. Museums must strengthen their innovative presence so as to attract and engage audiences. Making museums more inviting and accessible is essential to cultivating audiences, and the younger generation is challenging the 'what' and 'how' of museum offerings. Modes of learning are evolving and museums need to incorporate these modes in order to better meet the needs of young audiences. Young visitors are more likely than older visitors to seek instant gratification and are less likely to wait. Youthful tastes when absorbing information are affecting museum programmes and exhibit design. Moreover, many visitors are interested in engaging families as a whole. There is general agreement that children should be stimulated by museums, not intimidated, and want to return with their families. Ideally, this would support a lifelong appreciation of museums. There is a strong trend toward accessibility – both by attracting visitors and making their experience more intuitive. A visitor's first impression is critical to the museum experience and visitors largely agree that offering a greater mix of experiences draws more visitors [Johnsson 2006].

Our ICT Company has gained experience by looking at museums from a different perspective, creating immersive visitor experiences, and using innovative technologies to increase visitor engagement and interaction. ETT has achieved this by developing an engaging model using tools such as high-resolution monitors, interactive touch-screen interfaces, 3D reconstructions, proximity sensors, gaming simulations, augmented reality and interactive projections with on-screen actors.

The Casanova Museum & Experience project proposes a new idea of museum and edutainment (educational-entertainment). Since its opening, the exhibition has received extremely positive feedbacks from visitors of different nationality and age range.

This project generates a new perception of edutainment, mixing educational elements to entertainment factors. This experience certainly marks an important step in re-evaluating the role that new multimedia technologies have within the enhancement processes of both historical and cultural heritage.

Good visitor feedback, both Italian and foreign, encourages ETT to continue to implement cutting-edge technologies in order to create better engagement in the cultural heritage sector, both at the Italian and international level. This attractive experience certainly marks a very important step in re-evaluating the role that new multimedia technologies have within the enhancement processes, improving both historical and cultural content.

On the basis of what has been achieved so far, all the virtual and augmented reality fit-outs developed in the cultural field can certainly offer rewarding aesthetic and learning experiences, otherwise difficult to obtain, but this is not enough.

The starting point for the conception and development of such projects is the awareness that the past and the present can both be conveyed simultaneously, through new media, whilst contributing to research into the cultural patrimony which our country (and others) can benefit from. It is about enhancing the audience experience, thus guaranteeing both protection and conservation of art as well as providing an engaging interpretation.

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