VIRTUAL REALITY - SHOWS A NEW VISION FOR TOURISM AND HERITAGE

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Abstract

Observe the heritage, a monument, architecture or a sculpture and immediately receive useful additional information to interpret better. This is one of the promises of virtual reality technology.

The concept of virtual reality is far from being a new concept. Many experiments on ways to overcome layers of information, in addition to the real world elements, in live observation, have been made over the past decade, exploring different types of use, in leisure and professional contexts. Improving the perception of reality, in contrast to virtual reality, offers other initiatives that replace the context of a simulated world, and the possibility of using an interactive way to manipulate it in a digitally way. Those are the latest achievements that have opened new evolution perspectives of virtual reality.

The idea behind most computer applications is to improve the user interaction with the real world, adding information through the use of tools and techniques that were confined to the digital world. But those applications could be used on tourism orientation in cities and in the professional world, in diverse areas, as architecture in the BIM environment or interior design architecture, with the projection of elements like the furniture and could be visualized in the virtual space.

The ability to draw, could verify and share new realities, that was already being exploited by companies, which add new layers of information to be used in their catalogs and products that literally transform the hybrid PC, tablets and smartphones customer in additional information sources, that lead to know better what is observed, but in tourism and heritage that virtual reality is being used more intensively.

Virtual Reality could be a good way to travel and understand the touristic world.

Keywords: Virtual and augmented reality, tourism and heritage

Introduction

Virtual reality has given a contribution in the context of video games [1], architecture and tourism, but the applications are so vast and extend to different forms of entertainment, education or education and to other sectors which enables living experiences with relevance. This scenario will allow a new approach to virtual reality, transforming this technological curiosity into a truly useful tool, both in entertainment situations such as business, commercial or advertising contexts, these are for example, architectural or other, such as tourism and heritage.

We can visualize in 3D, the product catalog that can attract various markets and offers potential customers the opportunity to make contact even though virtually, before visiting and shopping.

Augmented reality is beginning to take new forms with the help of smartphones and new accessories such as Google Glass.

Through the evolution of smartphones processing capacity and the quality of cameras it is possible to offer a real machine that shows augmented reality [2]. This is the master device that has been used in experiments such as tablets that multiply everywhere, but was quickly joined by the glasses of various manufacturers.

Having a good quality camera, processing power and connection to the Internet that can recognize places and objects to collect data and with a screen that projects the information, it is possible to have an augmented reality device that provides useful information in conjunction with the surrounding virtual reality, allowing the user to interact by touch, sounds and text or voice, for example in tourism and heritage scenarios.

Augmented Reality vs. Virtual Reality

The difference between augmented reality and virtual reality is that the first digital information is added to images and real-life contexts [2], while the second offers the user a new world in which he is immersed allowing, for example, to fly over a city without taking his feet off the ground.

The two concepts are used in similar situations allowing one to travel through your feet, for example in the Louvre, while viewing additional information on the exhibited works, or by sitting comfortably on the couch, put on an augmented reality glasses and make a virtual tour the museum. Customers react positively to marketing components with the augmented reality technology, by improving the experience, view of details and framework, leading to finalize the purchase of products and / or services that virtual reality technology proposes in its offer.

Profiting from the augmented reality as a difference

Every day, ideas and projects are brought up all over the world related to the augmented reality technology. Advertising and marketing are obvious destinations of corporate investment to innovation of augmented reality [3], by adding a new layer of information with visual printed ads and / or audible.

The area of training and information on products, processes and equipment has suffered significant advance and it can bring to the production line, laboratory or workshop, a way to provide more knowledge and experience to users through devices such as tablets and others similar to Google Glass.

The Google's glasses are not yet available commercially, but already arouse the interest of many companies that are developing applications to exploit them.

The GuidiGo [2] decided to make the Google Glass a guide to museums, adding information on the exhibited works, by viewing videos and photos through voice command, "start the visit" activating the camera app (application) that provides the traditional "guided tour" in audio mode and a real-time map that shows the user's location, indicating the way forward.

Real-time maps are always updated and, referenced through GPS along with the smartphone camera, give new life to pocket maps of the various suppliers, but if we point in a certain direction on a position and orientation [4], the application will give us an indication of points of interest near, such as restaurants, shops, hotels and fuel pumps, etc.

Relive the past with augmented reality

Linking history and heritage, culture and tourism, capture and visualize digital images of historic buildings, cultural heritage and city centers that are recreated in the app Rewind Cities Lisbon [2], is an application that opens the door to new possibilities for the discovery of the Portuguese capital on tablets and smartphones Android, iOS and Windows Mobile.

The advantages of digital heritage and tourism images are immersive visualization in virtual reality and the non-invasive and rapid capture of historical and cultural sites.

The memories of the past are explored in various app, including the Forgotten City [2] where you can see pictures and videos of the site through time or events that took place there and made the city's history through the overlap and junction of pictures and useful information in real time.

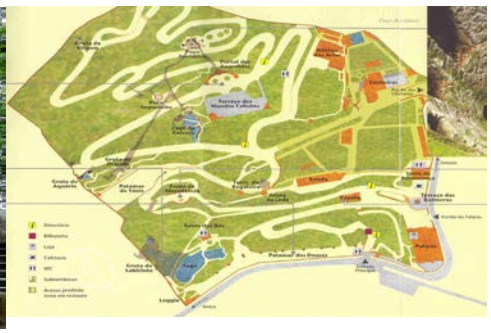
The tour concept is assured through the Time Traveller [2], in which the old images of buildings or monuments can serve as a background to

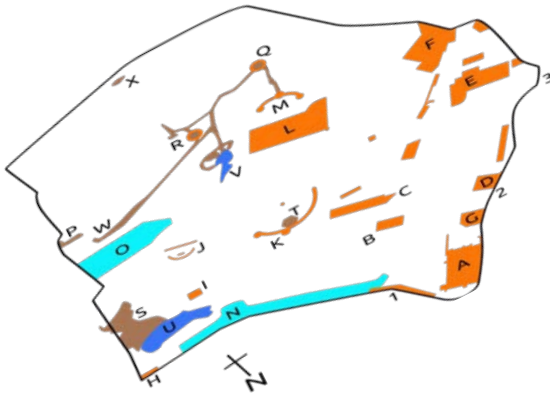
postcards with photos of tourists but without omitting current information such as the location of cultural events.

The immersive reality in museums and heritage

The virtual and augmented reality can offer museums, heritage and tourism many useful applications, provide a sensory experience and allow culture to be accessible to the general public [5], the preservation of the sites and environment, replace the actual visit of the site threatened or inaccessible by the virtual visit of tourists, explorers and researchers, with the potential for multiple virtual experiences, in terms of interaction and immersion, many examples exist in the link *(http://www.photojpl.com/cities/lisbon-portugal/)* in 30/01/2015.
The web-based virtual museums represent an attractive complement to the visualization of real museums and are good examples of virtual reality based on portable devices [6], with many good virtual museums such as one of the largest and most famous museums in the world, is where we find the Mona Lisa, the Venus de Milo, masterpieces by great artists of Europe as Rembrandt, Michelangelo and Goya, one of the world's largest art shows, the Louvre Museum in Paris, shows the site with the link (http://www.virtualsweden.se/panorama /louvre-apollo-galleries-0?set=77) on 2015/1/30.

In Portugal there are several virtual reality themes such as the case of the Palace of Regaleira Farm [7], registered in the SIPA - Information System for the Architectural Heritage, considered a cultural heritage building by the Direction-General of Cultural Heritage, is a residential architecture, revival, eclectic, a farm of romantic taste, with markedly palace and scenic design chapel and Neo-Manueline style, although reconcile other revivals as the Neo-Gothic and Neo-Renaissance, as shown on the site with the link *(http://cliente.digisfera.pt/regaleira-2.8/interactive/)* on 2015/1/30.





Farm of Regaleira - Legend:
1) Main gate; 2) Bridge over of Lower gate; 3) Superior door
Buildings - A) Regaleira Palace; B) Regaleira Chapel; C) Greenhouse; D) Renaissance Tower and Cultursintra Foundation offices; E) Coach Houses; F) Arts Workshop;
Open-air structures - G) Chimeras' Court; H) Loggia; I) Ibis Fountain; J) Fount of Abundance; K) Ledas' Grotto; L) Terrace
of the Celestial Worlds and Reservoir; M) Guardians'Entrance;
Fields - N) Threshold of the Gods; O) Tennis Court; P) Grotto
of Aquarium; Q) Initiation Well; R) Imperfect Well;
Others - S) Labyrinthic Grotto; T) Regaleira Tower; U) Unnamed Lake; V) Waterfall Lake; W) Eastern Grotto;
X) Grotto of the Virgin.

Fig. 1, 2, 3 and 4 - Palace, map, plan and legend, from the Farm of Regaleira.

The immersive reality in tourism

A Portuguese company that offers design and web development services, is a world leader in projects involving photography 360º, high quality virtual tours and innovative applications with panoramic images that allow an immersive experience. A virtual visit, for example, is a walk in Lisbon to the sound of Fado, which is a Project prepared by Digisfera in partnership with the Direction-General of Cultural Heritage and Tourism Department of Lisbon is a 360Tour interactive virtual tour in Lisbon, that allows walking on the streets and squares of the city, from the outside to inside of monuments and museums and in more than 30 places of interest, a total of 55 panoramic photos in 360°.

The virtual tour is a panoramic picture taken in sights views, squares, monuments and museums, including important historical information of locations in 5 languages [8]. A digital postcard on DVD 360Tour Lisbon [8] is on sale in the shops of the monuments and museums of the Direction-General of Cultural Heritage, in stores Lisbon Tourism Board and other tourist sites. The virtual tour included on the DVD is temporarily available, on the site with the link ***(http://www.360tour.pt/demo/)*** on 01/30/2015.

Fig. 5 and 6 - *Square trade and* map from Belem, Central of City and Park of the Nations in Lisbon.

Conclusion

The Culture, the Heritage and the Tourism are now recognized as fundamental values of the attractiveness of a country as revealed by characterization studies of tourist motivations that visit us. The purpose of this Article allows the interconnection between Heritage and Tourism, provided that he meets the creativity, the tools and experience of those who projects and can pave the way to new projects and conquer your space integration and dissemination.

The Virtual Reality is the current technology that will transform the future, just like any innovation will have its use, allowing the user to new experiences, knowledge and skills, an exact reproduction of the real world that incorporates virtual display and the sensations in the environment surrounding and cultural. This immersive reality encourages tourists in virtual tours and in choice of places to visit, beneficial for the study and conservation of the Heritage.

The Augmented Reality provides the tourism industry a new technology to be exploited by the professionals of Culture, Tourism and Heritage, the unique opportunities it presents.

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