

## Virtual Tourism

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**Abstract** - With a humongous outbreak of mobile applications affecting today's world, the tourism industry is making use of Virtual reality (VR) in applications to provide a virtual and exotic experience to tourists with interactive features and a user-friendly interface. The proposed system presents the basic idea of using the concept of VR technology acting as a tool to provide a new dimension to sightseeing using a virtual sightseeing application that provides tourists with an experience of visiting the tourist location through the application, as a part of the application and reviews the recent development of VR technology in the tourism industry and beyond.

**Key Words:** Virtual Reality, Sightseeing

### 1. INTRODUCTION

VR is based on numerous technologies, several concepts and different theories. Naturally, the uses of VR are equally as numerous. As it is common for new advancements in the Information & Communications Technology (ICT) sector, the technology is originally built for a very specific industry and then later adapted to other specific industries in more general applications. While in the case of VR the entertainment industry is definitely a driving factor (and most prominent in media coverage), there are numerous other industries where VR is already being applied.

In the proposed project, virtual reality has been used alongside, software such as Unity 2D and Blender in order to create animated simulations of historical monuments in India, with a view to provide stimulation to the tourists' senses of sight and hearing, without having to physically visit the location. These simulations also serve as a preview tool for those who wish to use technology to get a glimpse of their tour, beforehand. The monuments that are targeted in this project include the India Gate, Qutub Minar, Humayun's Tomb and one of the 7 wonders of the world, the Taj Mahal, which is as mysterious as it is famous.

The website collectively includes 360-degree VR images, videos and simulated animations of each of the historical structures mentioned above and their peripheral terrain and atmosphere. Virtual Reality headsets have been used as a tool to perceive the monuments and the virtual environment. The structures used in the simulations have been created in Blender, a software similar to Maya. The completed 2D structures have been exported into Unity 2D in order to create animated simulations of the tourist location, which are then converted into WebGL in a web-compatible format. Additionally, the 360-VR videos and images provide the client with a feel of physically witnessing the tourist spot

creating a heightened sensation to the sensory organs, thereby acting as a tour in itself.

### 1.1 Aim and Objective

The web applications can be used by tourists to view the tourist location and ancient monuments. This will allow the client to have a feel of the tour before-hand and also be a boon to those who cannot visit the country for some reason.

We will be developing a web application which helps and motivates tourists to visit different exciting tourist attractions in India. People would be able to experience tourist locations without visiting them and for those who are planning to visit, the project would serve as a preview tool. These applications could exert its value because of the increase of popularity of smart phones and the wide application of 3G mobile networks. It has a high mobility and no space constraint. Unlike the traditional way of searching on website or presenting information on templates and brochures, it adds the advantage of diversity.

### 2. LITERATURE REVIEW

Information communication technology (ICT) has increasingly been incorporated into the tourism sector. As companies and individual businesses continue to embrace and experiment with newer technologies, there are increasing efforts to find novel and innovative ways to integrate technologies in product and service offerings.

**Animated view :** Through several decades virtual reality (VR) technologies have steadily evolved and simultaneously widened their adoption to many different disciplines of science, humanities and art including history and archaeology. Virtual reconstructions of worldly known heritage sites is one prominent example of such applications[5]. Such 3D models can be exploited either as part of the Virtual Reality (VR) contents, or made into physical models via 3D printers for the promotion of regional tourism. This idea has inspired us for making the 3D models of the historical monuments and uses it in the animated view of the tourist locations.

**360 images:** Previous research found computer-generated simulations of 3D images enhance tourists desire to experience places. At the same time, the study revealed the need for easy to use and highly aesthetic VR application to ensure tourists' behavioral intentions to visit destinations [2]. These idea of enhancing the user experience of the tourist location has motivated us and the 360 images of the tourist location gives the feel of the tourist location.

### 3. PROBLEM STATEMENT

Information of tourists locations is essential for tourists to spend their sightseeing effectively. Lacks of sightseeing information cause tourists to lose opportunities to become interested in the city's charm and also travel agents or organizers will throw away a golden opportunity of delivering attractiveness of sightseeing areas. Therefore, providing useful information and being able to access it easily are important for the local revitalization.

The current issues which are faced by the local as well as tourists coming from around the world is that they get the information from some travel book which gives slight idea of the location before they actually visit the location ,the book might give the authors opinion about the tourist location and it may happen that the place would have been upgraded and the book will not have the updated information .

Also the tourists may get complete itinerary of the tourist attraction by the tourism through the brochure and templates or guide before they proceed which is printed much time before and new updates may may not be added and thus would take the tourists chance of exploring the places.

### 4. PROPOSED SYSTEM

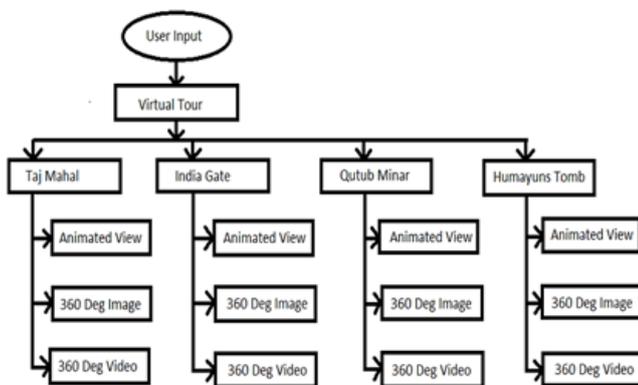


Figure 4.1 Proposed System

The figure 4.1 shows proposed system, with the following features

- **Animated view**

In Animated view the user can view the animated model of the tourist location and can move throughout the location/terrain.

- **360 Image**

In 360 image the user can view the 360 view of the tourist spots and can see how the tourist attraction appears this will give the feel of the beauty of the monuments and the tourist locations.

- **360 Video**

In 360 video the 360 view of the location can be seen and by using the virtual reality headset that is the VR headset which enhances the experience of the tourist location and the users will get attracted to visit the tourist locations.

### 5. FUTURE SCOPE

There are several aspects that are currently in discussion regarding the future VR development. While some researchers are dealing with the issue of tourists' acceptance of virtual travel as elaborated above, selected tourism companies are envisioning a future dominated by VR.

There are also some predictions from tourism researchers. Many companies in the tourism industry have their sights set towards the future, and some even go so far and publish reports about their expected future developments. As an example, in the 2014 Skyscanner report 'The Future of Travel 2024', published by the company which is mostly known for offering a global travel search engine, they envision VR as a major influence on touristic experiences. They predict VR to "become a new form of show rooming, an incredible 3D taste of a destination that will make travelers long to experience the real thing." In further elaboration, they explain that haptic technologies will also influence the way how we book travel and how we prepare for it. Through clever technologies, we will be able to feel the sand on the beach before we actually get there or the mossy ground under our feet in a virtual rain forest. But technology doesn't just stop at that. By combining it even more into the VE, the potential customers could feel what it is like to touch fluttering flags in the simulated environment, strengthening our perceived sense of presence even further.

While these company outlooks are certainly not expected to become a reality in the short-term, it can be noted that the industry's expectations are set pretty high. This should be sufficient motivation for tourism stakeholders, such as destinations, to deal further with the topic and explore their options.

Another factor motivating tourism stakeholders to keep an eye open for opportunities in VR marketing should be the analysis from major investment research firms such as Goldman Sachs and Piper Jaffray regarding the global market share and penetration of VR. The analysts of Goldman Sachs expect VR to grow into a business worth 80 billion US dollars by 2025.

Piper Jaffray has also released an analysis where they estimate a global market share of 70 billion US dollars for VR. They also point out the infinite possibilities that VR offers across all industries and expect a market penetration similar to the one we experienced with smartphones. While Goldman Sachs predicts a software and application market share of VR to be around \$35bn, Piper Jaffray is estimating software share to be at a more moderate \$5bn until 2025

(software share is part of previously mentioned estimates). As tourism businesses would not likely profit from hardware sales, the software aspect is of a lot more importance to them, however, as can be seen, the estimates still differ greatly. Yet, more important will be the share of consumers that can be reached when offering (free) VR content. Nevertheless, the analysis show incredible growth potential for the entire VR market.

## 6. CONCLUSION

To summarize, this project gave extensive information about the background on VR which highlighted the importance of the human senses and the concepts of immersion and presence. VR was connected to a touristic context, offering up some established cases with already released VR promotional software, growth potential estimates and possible use cases for future applications. Furthermore, it was determined that VR applications can strongly influence the first stage of the customer journey, where customers are looking to be inspired.

Most importantly, numerous potential advantages and risks of VEs in tourism were introduced. They were regarded under different viewpoints, namely sampling and showcasing, virtual travel acceptance and accessibility.

The objective of this project was, amongst others, to identify possible (theoretical) benefits and risks that are attached to the implementation of VR applications into destination promotion. It can be concluded that there are numerous ways for destinations to establish themselves in the VR market, each of them brings a multitude of potential benefits and risks. The different benefits and risks were also compared against traditional methods of destination promotion.

With the stating of several other practice cases in other areas of tourism and aforementioned background information, we hope to have given a holistic overview for users about the topic of VR in tourism. What is most important for tourism marketers is to evaluate all the different promotional opportunities given and to weigh the pros and cons VR can offer in their individual situation.

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