

Virtual reality and modern tourism

Almir Pestek and Maida Sarvan

Abstract

Purpose – *The purpose of this paper is to provide an insight as to how recent trends in virtual reality (VR) have changed the way tourism and hospitality industry communicates their offerings and meets the tourists' needs.*

Design/methodology/approach – *The approach is based on systematic literature review, where the relations between focal concepts are given to analyze potential future developments concerning VR.*

Findings – *The paper identifies and analyzes how VR technology affected tourism and hospitality industry through three main touch points – future tourism planning and management, technology-based marketing of tourism destinations and VR potential in changing consumer requirements. These concepts were analyzed to identify changing forces and suggest potential paradigm shifts that tourism and hospitality suppliers and marketers need to consider. These included realistic virtual travel replacements, the importance of interactive experiences and innovation in future tourism systems.*

Originality/value – *While there has been increasingly larger number of discussions on how tourists and tourism and hospitality industry have been using information and communication technology recently, there is little evidence of scholars and practitioners applying such methods. This paper used systematic literature review to illustrate means in which VR could be ingrained into tourism and hospitality services to meet the needs of tourists. It suggests that VR can and probably will fundamentally change the way in which tourists' experiences and requirements are managed entirely.*

Keywords *Virtual reality, Tourism, Marketing, Development, Emerging trends*

Paper type *Trends paper*

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Introduction

One of the most significant developments in the field of information and communication technology (ICT) expected to greatly impact the tourism industry today is virtual reality (VR). Many of the recent innovations such as VR platforms, devices and content production tools enable the evolution of VR. As such, VR technologies nowadays offer unbounded potentials for mass virtual visitations to actual tourism destinations. Moreover, the roles of such technologies in tourism and hospitality industries, its management and marketing have been described in literature as capable of showing their intricate abilities to simulate real-life situations and contexts, occasionally being touted as a substitute to actual travel, making it a very powerful tool for meeting the needs of tourists.

The changes that are supposed to occur in the next few years are always underestimated and come even sooner. Tourism and hospitality organizations should be urged to be more future-oriented and prepared fully for the planning of technology adaptations. The paper aims at establishing relations between concepts of VR and tourism and hospitality industry and presenting opportunities for the tourism sector taking in consideration the values expressed in the concept of VR marketing in efforts of meeting the needs of tourists in the future. The paper explores the potential of valuable tool such as VR with regard to tourism planning and management, technology-based marketing of tourism destinations and effects of VR on consumer requirements.

The paper is based on the literature review. The following digital bases were used in the process of research: Emerald Database, IOPscience, SCOPUS, EBSCO, ABI/INFORM

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Complete – ProQuest. The items in the search string were connected with OR statements, to make sure that all relevant papers were retrieved - “virtual reality,” “virtual reality marketing,” “virtual reality experience,” “augmented reality experience,” and “ICT in tourism”. Only 49 articles were yielded because of their relevance after applying the exclusion/inclusion criteria. Inclusion criteria include: published articles between 2010 and 2019; articles written in English, scientific and peer-reviewed articles; studies published in electronic digital libraries from newspapers or journals; and educational conferences. Exclusion criteria are as follows: duplicated papers and studies returned by different search engines, papers and works that focus on low-level comparison, editorials and non-reviewed articles. Based on these studies the conclusions are drawn throughout the paper.

Technology-based marketing of tourism destinations

VR is often defined as the technology using the computer-generated 3D environment often referred to as “virtual environment.” The real-time simulation of one or more of the five senses of the user is often a result of navigation through this virtual environment and interaction with it (Gutierrez *et al.*, 2008). Physical immersion and psychological presence are provided in VR experience as well.

The marketing and promotion segments of the tourism sector have most often been used with the assistance of visual imagery (Aziz and Zainol, 2011). The intangible properties of tourism, as a service, constantly reminds the marketers that there is a need to continuously innovate the forms of visual imagery with the objective to promote a positive destination image (Griffin *et al.*, 2017). As a useful tool used by marketers in establishing the communication of emotions and experiences influencing the consumers and tourists, VR is often used because of its ability to induce the emphasized sensory and emotional experience.

The opportunities of VR in regard to destination marketing organizations are found in the way in which marketing messages are targeted to specific markets, whilst capturing the attention of potential visitors and giving assistance in relevant factors identification that essentially create motivations for those that engage in any form of VR and awareness development in reference to future travel decision-making processes (Huang *et al.*, 2013). Research indicates that virtual tourists can have their travelling needs easily fulfilled under the following conditions: taking into consideration the hedonistic and emotional experiences, virtual tourism destinations can give visitors the chance to enhance their perceptions and virtual world is displayed as a source of useful information.

To conclude, VR in marketing of tourism destinations can be associated with attachment (Wu *et al.*, 2016), stimulation (Neuburger *et al.*, 2018), evaluation (Gao *et al.*, 2012), decision-making (Guo and Barnes, 2011) and experience (Jung *et al.*, 2017).

Virtual reality changes tourism planning, management and consumer requirements

VR is considered a very valuable tool in tourism policy creation as well as in the planning processes (Cheong, 1995). The tourism planner’s consideration of possible developments in the sector is often aided by VR’s ability to create realistic and navigable virtual environments.

The tourism planning and management can be benefited by VR technology, as it possesses the unique testing capabilities (Sussmann and Vanhegan, 2000). The understanding of visitors’ patterns of space, time and place is a very important element in developing management plans, which include shifting the burden from areas with heavy use to those with limited use. 3D visualizations are excellent tools in doing so (Lew and McKercher, 2005). Furthermore, as VR technology continues to evolve, the entertainment industry has

found a way to make these evolutions very useful in regards to marketing the entertaining tourist attractions (Gutierrez *et al.*, 2008).

A set of concepts which are interrelated identify the current trends in tourism and its references to marketing, consumer behavior and tourist needs and the ways in which these affect the end users' attachment, stimulation and decision-making process (Epple, 2018). Research that explores the consumer behavior in VR tourism through the example of using the stimulus – organism – response model identifies that the brands and tourism organizations are able to affect the users' opinions and decisions directly and effectively through this interactivity, experience and immersion (Kim *et al.*, 2018).

The roles of hedonic experience and emotional arousal are found to be large in regards to determining the potential tourists' behavioral intentions to visit a given destination and also in motivating them to become the potential tourists (Jung *et al.*, 2017). On a similar note, the navigation of 3D environment is found to induce positive emotions, flow and emotional involvement, which results in positive effects on behavioral intentions, further extending the engagement and immersive experience that enhances the tourist' needs.

As a subsequent consequence of advancement in virtual technologies, the impression of investors and consumers continues to grow and VR is being envisioned and implemented largely to meet the future needs of tourists. The potential of VR technologies in meeting the future tourists' needs is large and the research identifies the major trends in tourism sector in regards to this in the further text (Nayyar *et al.*, 2018).

Identified trends in tourism industry are found in effective planning and suitable management. As the almost-realistic, easy and detailed navigations created through the VR are readily available for tourists to help in their trip- and activity-planning processes, its potential is further widened. Furthermore, the trend is identified through creation of various types of simulators which allow for the virtual experience, where potential tourists are able to experience a destination in advance, such as in the case of some destination marketing organizations (Tussyadiah *et al.*, 2018).

The VR technologies are already used in provision of tourists with experience previews of sites, destinations and attractions, such as hotels, cruise ships and similar, as a part of the marketing strategy (Samuely, 2016). Virtual conative image that most often results in potential purchase intention is yielded through Web-mediated virtual information (Hyun and O'Keefe, 2012).

The applications of VR are largely found in the initial phases of customer buying cycle in the area of tourism, because it enables the extensive information about important factors that play a significant part in the search stage of the process of decision-making (Kim *et al.*, 2018). Furthermore, the perfect digital environment enables for the creation of virtual attractions at an effective cost, which are identified in simulators and marketable tourist attractions. Examples of these include the "Sensorama Simulator" that, through the 3D images, aromas, sounds, wind, set vibrations and similar, offers entertaining, simulated motorcycle rides through New York City (Gutierrez *et al.*, 2008). Also, an example of such application of VR in entertainment industry is found in theme parks, such as the Dreamworld theme park, with simulated car rides (Dreamworld, 2009) and also Cyber Speedway in the city of Las Vegas (Sahara Hotel and Casino, 2009).

A large trend in the sector is identified in provisions of virtual tours as well, including the handling of virtual objects, interactive and immersive experience and a realistic picture of the site. This is most commonly used in heritage areas, hotels and museums, including the zoo exhibits (Bowman *et al.*, 1999), VR exhibits in cultural centers globally (Roussou, 2004), viewing of heritage sites (Thomasson, 2006), production of interactive tours (Tholos, 2009), selection of tourist attractions within an area (Linaza *et al.*, 2008) and so on.

Many hotels have demonstrated that the VR trend is very useful in the destination marketing area as well and as such the room booking process has been entirely transformed (Neuburger *et al.*, 2018). Technology provides for prospective guests to virtually visit rooms and consider their offers, like in the case of Marriott Hotels, including the previews of the local attractions, giving potential tourists insights in destinations.

Another example of VR trend is identified by Telexistence, a company that has been working with a real-life avatar, where the user is enabled to see what the avatar sees and to also receive haptic feedback (Telexistence Inc., 2020). Such example is very important in identification of possibilities in meeting the tourists' needs in the future, such as a travel decision that will immediately satisfy their need after a particular interest and desire is awoken, whilst also enabling for VR travel to be possible, allowing the tourists which might possibly be intimidated by certain destinations and as such, would only visit them virtually, as in the case of possible existence of potential geographical barriers, fears, dangerous locations and similar.

The identified trends indicate that VR technology will most likely become an invaluable tool in the next few years (Barnes, 2016), which consequently will dictate the marketers to custom make the VR experiences for the varying users and offer the best possible VR services to meet the consumers' future needs most optimally.

Certain conclusions can be drawn implying that the VR is changing tourism planning and consumer requirements can be associated with 3D visualizations (Brent Ritchie *et al.*, 2011), simulators (Tom Dieck *et al.*, 2016), virtual tours (Tung and Law, 2017), previews (Epple, 2018) and effective planning (Kask, 2019).

Conclusions

VR is being developed as a part of smart tourism to provide information about destinations and attractions while showing its potential to become a new tourism service. Nonetheless, the trend has proven to be very useful, however slow, because of the difficulties of tourists to keep up with new technologies. Thanks to VR, tourists are able to experience a destination in advance and to preview local attractions. Interactive, realistic, easy and detailed VR navigations help tourists in the trip-planning processes and activity planning.

VR technologies will surely continue to advance, and as such, the opportunities in the tourism sector will grow exponentially. Regardless of the direction in which these advancements and developments take place, immediate applications and trends are identified and used within the tourism industry already.

Whilst many limitations do exist, the future will show the technologies to be much better understood. VR can and probably will fundamentally change the way in which tourists' experiences and requirements are managed entirely.

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Further reading

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