

Augmented reality for relaunching tourism post-COVID-19: socially distant, virtually connected

Socially
distant,
virtually
connected

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Abstract

Purpose – This paper aims to understand the various facets of augmented reality (AR) and to explore its prospects for supporting the relaunch of the tourism sector post-COVID-19 in accordance with the guidelines set out by WHO and UNWTO.

Design/methodology/approach – This study falls into the category of exploratory research. It is based on a systematic review of secondary data. Thematic content analysis has been adopted to trace out the various ways in which AR can be an aid in overcoming challenges in the relaunch of tourism after the pandemic.

Findings – It was found that norms such as social distancing and lower mobility are going to be followed even after the COVID-19. Therefore, there will be a great demand for mobile and Web-based AR to not only ensure tourist safety but also to create unique, accessible, personalized, context-specific, deep and memorable experiences.

Practical implications – Apart from its academic contribution to the existing body of knowledge, this work can assist various tourism DMOs and policymakers to devise futuristic policies for AR-driven tourism management and development.

Originality/value – The COVID-19 pandemic is unprecedented and never seen before. In this context, this study establishes its novelty by exclusively focusing on the aspects of AR that can support the relaunch of tourism post-pandemic.

Keywords Augmented reality, Tourist satisfaction, COVID-19, Tourism 5.0, Tourist safety

Paper type Literature review

Introduction

The outbreak of coronavirus disease (COVID-19) is causing havoc all across the globe with its impact spread across all spheres of life, be it health or society or economy (Haleem *et al.*, 2020). Travel and tourism (T&T) is expected to be the hardest-hit industry in this pandemic – hurting both the demand and supply of tourism products (UNWTO, 2020a). The impacts of this unparalleled disease on the travel and tourism sector are unprecedented and fast-changing in nature (UNWTO, 2020b). The majority of the tourism service providers



irrespective of their nature, size and scale of operation have suffered huge losses, which are estimated to be e400bn (Goodwin, 2020, April 12, Nicolas, 2020).

Despite this scenario, the tourism industry is gearing up for a sustainable and strong recovery under the aegis of the UNWTO, the apex body of global tourism (UNWTO, 2020c). Further, many writers have viewed this pandemic as an opportunity to provide a new direction for the industry by reviewing the whole tourism system so as to work toward a more sustainable future (Brouder, 2020). Thus, it seems imperative to revisit our tourism practices of the past and adopt some innovative strategies that promote sustainability while discarding the ones which pose challenges to the sustainability objective (Ioannides and Gyimóthy, 2020). In this context, information and communication technology (ICT) -driven initiatives such as augmented reality (AR) can not only improve tourist experience but also act toward tourism sustainability (Cranmer *et al.*, 2020).

AR is an interactive experience that enriches the real-world scenario by superimposing computer-simulated contents (such as 3-D images, avatars and interactive features) on to the direct view of the user through a multimedia device (such as mobile or computer) to provide perpetual and context-specific information to the user (Cranmer *et al.*, 2020; Kečkeš and Tomičić, 2017; Han *et al.*, 2013). It is believed that AR has been underused in the tourism sector thanks to its newness, perceived complexity and technical resourcefulness (Voitk and Maslov, 2019).

The authors of this paper argue that AR offers the potential to contribute significantly to restarting safe and sustainable post-COVID-19 tourism. The article is divided into three sections. The first provides a brief account of how COVID-19 is changing the face of the tourism sector. In the second section, the role of AR in today's tourism sector is discussed. Finally, the various facets of AR that can aid in the relaunch of safer and sustainable tourism post-COVID-19 are discussed. The study falls into the category of exploratory research, as it is based on a systematic review of secondary data. Thematic content analysis has been adopted to trace the various ways in which AR can aid in overcoming challenges during tourism relaunch after the pandemic.

COVID-19 and tourism: the changing reality

As the biggest pandemic of the 21st century, the COVID-19 outbreak has had catastrophic impacts on almost all economic sectors (Fernandes, 2020; Maital, 2020; McKibbin and Fernando, 2020) especially T&T. It is estimated that the global T&T sector will take a dip of 60%–80% in its international tourism arrivals (UNWTO, 2020d) and lose 50 million jobs across the globe in the year 2020 (WTTC, 2020). In this context, Higgins-Desbiolles (2020, p. 1) notes: “The arrival of COVID-19 has been viewed as a watershed moment. In terms of tourism, the unthinkable has happened.”

To control and curtail the transmission of the disease, many governments have banned international travel, imposed nation-wide lockdowns, shut down borders, cancelled major events, mass gatherings and closed major attractions. Various governments have also urged their citizens to practice social distancing to curtail the spreading of the disease. These measures in turn have restricted mobility on an unparalleled scale, which along with the social distancing norm, are causing disruption to the neoliberal market set up of the global tourism industry (Ioannides and Gyimóthy, 2020). The sheer intensity, high communicability and scope of this disease has, according to academics, practitioners and policymakers precipitated a “crossroads” moment: lower mobility will induce higher poverty and deprivation whereas higher mobility will induce faster transmission of the disease (Higgins-Desbiolles, 2020).

Tourism is one of the biggest contributors to the global economy and employment (Rajamanicam *et al.*, 2018). Many countries in the world depend solely on tourism for their economic growth and sustenance. So, in a world where COVID-19 (thanks to its unprecedented nature) is going to stay for a long time, the tourism industry has to learn to cope with these new realities and restart with a sustainability-focused approach (Yung and Khoo-Lattimore, 2019). Keeping this in mind, UNWTO has called for a responsible restart of tourism under a set of guidelines focusing on safety and security issues (UNWTO, 2020e). Additionally, tourism, being a global phenomenon involving international travel can also become a source for spreading the virus. Hence, WHO (2020) has also provided guidelines for safe air travel amidst and after the public health crisis (WHO, 2020). UNWTO(2020c) asserts “The guidelines highlight the need to act decisively, to restore confidence and, as UNWTO strengthens its partnership with Google, to embrace innovation and the digital transformation of global tourism.” In this context, there are a growing number of academics and practitioners who are advocating for innovative strategies and digital transformation in support of a sustainable restart of tourism. Augmented reality (AR) and other ICT-driven tools are driving the relaunch of tourism post-COVID-19 (Carbone, 2020; Mora, 2020). However, no article has exclusively examined the various prospects of AR that can support the relaunch of post-pandemic tourism.

Augmented reality and its implications for tourism

AR, by definition, is “a technique that combines a live view in real-time with virtual computer-generated images, creating a real-time augmented experience of reality” (Van Kleef *et al.*, 2010, p. 1). Considered as one of the biggest breakthroughs of modern times, the popularity of AR has grown significantly in industry and among academics (He *et al.*, 2018). Based on the three distinctive principles of integration (of real and virtual), (real-time) interaction and 3-D registration (of both real and virtual objects) (Ye *et al.*, 2003), AR can assist in enhancing the real view or creating an augmented view or generating a completely artificial view (Kipper and Rampolla, 2012).

Packed with positive features such as user-friendliness and innovativeness (Hassan *et al.*, 2018), AR has been applauded for being an innovative tool for the promotion (Rahimi *et al.*, 2020; Shabani and Hassan, 2018) and marketing of tourism products and services (Dadwal and Hassan, 2016). AR opens up avenues for better tourist engagement (tom Dieck *et al.*, 2018), innovative ways of exploring unfamiliar attractions (Han *et al.*, 2018), positive changes in tourist behaviour (Chung *et al.*, 2018), improved tourist experience, superior customization (Kounavis *et al.*, 2012), increasing tourist/visitor inflow (Cranmer *et al.*, 2018), better marketing of tourist products (Cranmer *et al.*, 2020; Rahimi *et al.*, 2020), ensuring business profitability and improving tourist products and services through innovation (Hassan and Rahimi, 2016). In the recent past, various studies have explored the organizational, cross-cultural, business model and stakeholder perspectives of AR in the tourism industry (Cranmer *et al.*, 2020). Further, due to its integration with mobile-based platforms, the value and reach of AR is achieving new heights than ever before (Michele *et al.*, 2013). Further, AR can also substitute tourist guides by providing interpretation to tourists who are not well versed with local languages (Chang *et al.*, 2015). However, despite all its potential, AR has not been used optimally in the tourism sector (Çeltek, 2016) because of its newness, perceived complexity and technical knowledge prerequisites (Voitik and Maslov, 2019).

Prospects for an augmented reality-driven relaunch of post-COVID-19 tourism

The COVID-19 outbreak has become a strong force inhibiting all the factors that made international travel easy and aided in improving the spread of tourism industry (Niewiadomski, 2020). With no sign yet of a vaccine, it is clear that COVID-19 is here to stay, and hence, the only wise thing is to reconcile with this by being prepared for the worst (Singhal, 2020, p. 43). Therefore, the calls by UNWTO for the sustainable recovery of the tourism sector seem fair at this juncture. However, the relaunching process must be accomplished by keeping the UNWTO(2020f) guidelines in mind. One of the highlights of the guidelines is to enhance the use of technology for seamless, safe and touchless travel. As such, ICT-driven mechanisms such as AR and VR happen to provide such travel experiences. Some of the prospects for wider adoption are discussed below.

As noted earlier, AR can provide solutions to cater to the changing realities post-COVID-19. To begin, one may discuss the power of AR and VR to provide a virtual experience of a place without physically going there. AR and VR can promote a sustainable configuration of tourism after the pandemic that will require tourists to abandon all unnecessary excessive movements given their negative impacts and experience them virtually (Loureiro *et al.*, 2020).

AR has been most particularly used in the marketing of tourism products and services for better visualization and focused information sharing (Cranmer *et al.*, 2020). Following the COVID-19 pandemic, there will be a great need to build awareness, promote, reinforce branding and earn customer confidence through focused and ubiquitous marketing. Therefore, AR will have a profound impact on the marketing of tourism and sustainability and on the post-pandemic period.

The majority of tourism products are based on multisensory experiences – be it adventure tourism or wildlife tourism – tourists travel far and wide to experience the live sensation of proximity to wildlife. After the pandemic, AR-based systems are expected to provide these sensory experiences without physically carrying out the activity or going to that place (Buhalis and Matloka, 2013). Also, personalized AR tools can cater to the need of tourists with special needs, thereby improving grounds for accessible tourism (Yovcheva *et al.*, 2013).

AR and VR have numerous implications in the food and beverage (F&B) sector. In the context of COVID-19, one of the most important aspects of AR and VR in the F&B sector has been discussed by Georgakopoulos(2008) who described the perks of improved interactivity and immersion through AR and VR for food safety training in F&B establishments.

Educational tours are not expected to restart even after the pandemic, as it would be risky to mobilize students in a world that has just recovered from a pandemic. Subsequently, AR- and VR-based virtual field trips have been attributed as a more sustainable and carbon sensitive alternative to physical field trips given its negligible greenhouse emissions (Schott, 2017). Educational institutions will explore the possibilities of these virtual trips as a substitute for real-life trips. Further, as long as the schools and educational institutions providing tourism education do not open, AR-based systems would not only provide first-hand information regarding destinations but also improve knowledge construction (Yung and Khoo-Lattimore, 2019).

MICE (Meetings, incentives, conferencing and exhibitions) are integral components of tourism. The COVID-19 pandemic has exhibited the supremacy of ICT-based platforms in organizing meetings in the digital space. AR-based applications can provide real-life experiences of MICE tourism while saving money and time (Gustafson, 2012). This trend is

going to be followed far beyond the pandemic thanks to its easy accessibility and greater reach.

However, AR has been critiqued for being too costly (Hassan and Rahimi, 2016; tom Dieck *et al.*, 2016). Consequently, Mora(2020) argues that with the limited mobility and imposition of social distancing norms in the post-pandemic situation, more and more people will demand the complete, extended sensorial experience of tourist places through AR and VR. This heavy demand for AR-driven experiences will in turn result in a higher number of requests for AR and VR systems (which are currently expensive) which then is expected to decrease the price of the entry-level systems along with an increase in quality of these systems (Mora, 2020).

Conclusion

It is safe to say that the times after COVID-19 will not be the same as it was before it. This will be reflected in the tourism industry too, which is aiming for sustainable recovery based on the guidelines provided by agencies such as WHO and UNWTO. The road to recovery will consist of the adoption of new and innovative strategies that make tourism work in the post-pandemic period. ICT tools such as AR and VR have proven to be innovative tools that can provide touchless, multisensory experiences, which in return can ensure both tourist satisfaction and safety. Therefore, the future of tourism will be greatly impacted by AR systems, and the cost of these systems is expected to go down with greater requests for entry-level systems. Further, AR-based systems can immensely help in aspects of tourism such as F&B, MICE, tourism education, providing multisensory experiences and avoiding unnecessary travels. All these aspects point toward the enriched use of AR in post-pandemic T&T.

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