

TOURISM 4.0 AND EVOLVING ARCHITECTURE OF TOURISM - A PERSPECTIVE

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Abstract

Tourism is one of the world's big and fast growing industry. The shape of tourism is an outcome of the complex interaction of a multitude of forces such as technology and pandemics. The tendency of the tourism industry and academia of revival of tourism based on past experiences is leading to mad rush called revenge tourism during the relaxation on travel curbs in between COVID-19 spread. The huge gap between the undercurrents of environmental changes and the responsiveness of the industry requires serious consideration and robust solutions. Therefore this perspective paper aims to identify the role of technology in shaping tourism. The study conducted a detailed literature review to find answers to the research gaps. The study found that the architecture of tourism will be based on future technologies and will evolve consistently with the advancements therein.

Keywords: *Tourism, Industrial Revolution, Future Society, COVID-19*

Introduction

Tourism is the sum of all experiences involved in the movement of tourists and is shaped by a large number of actors and factors. Tourism has evolved

in different forms from class to mass, slow to fast, mainstream to alternate, experiential-immersive, and many more. The external environment is a big and changing influencer on tourism (Borko et al., 2020; OECD, 2018; WTTC, 2019). Technology has emerged as the biggest influencer since Industrial age (IA) 1.0 however its influence is more invasive and widespread in IA 4.0 with the merger of bio-physical and cyber worlds. Now tourism experiences occur in extended reality; in virtual, augmented, and mixed. The digital generation has a wide latitude of acceptance of tourism experiences in the realms of artificial intelligence (AI), robotics, Internet of things (IoT), Big Data, Cloud computing, 3D printing, augmented and virtual reality.

The bio-threat of the COVID-19 pandemic led to downtrends in tourism by 73 percent in 2020 and 85 percent till July 2021 (UNWTO, 2021). The pandemic slowed tourism but fast-paced adoption of 4.0 technologies across all walks of life including tourism where technology provided the much needed safe interface between human to human interactions. The current dominance of natural threats to humans and other lives despite greater advancements in technology has led to the realization that all human experiences need to be sustainable. Japan has already started preparing of IA 5.0 with a human-centric approach. This concept can be elevated further to a balanced form of development where all life forms get their due recognition and space and considering the history of industrial advancement this new age may come sooner than expected. These changes will nudge tourism towards future technology driven solutions. The growth of this new age technology is expected to reach the size of USD 3.2 trillion markets by 2025 from USD 350 billion in 2018 (UNCTAD, 2021).

In this future scenario of technology dominated tourism, a few concerns need to be addressed for the balanced growth across the globe:

- Role of IA 4.0 technology on tourism- Technology can either be a great leveller between developing and developed countries or it can create a digital divide. The possible impact of both scenarios on tourism needs to be studied and foreseen.
- Destinations experiences in extended reality- Destinations are likely to be experienced multiple times; virtual followed by augmented and mixed reality. The presentation of destinations and tourism experiences in all the formats in a compatible manner will be challenging.
- Free time with humans with technology taking over repeat work- This free time can be used for many virtual activities and virtual tourism can be among many. Tourism can see a lot more competition from non-tourism virtual experiences.

- Technology will enable potential tourists to collect information from multiple sources that may not sync with marketers' narrative creating inconsistencies in images and perceptions. Even the handling of COVID-19 by countries and destinations will have a strong bearing on tourist images and risk perceptions.
- The immersive and addictive technology of IA 4.0 will require new thinking for tourism development.

The literature provides probable though limited answers to the above issues.

IA 4.0 and Tourism

Tourism is recognized as the world's largest industry by contributing to global economies (WTTC, 2019). Global tourism has started to develop fast and big after the 1970 industrial revolution notably with the induction of railways (Horner & Swarbrooke, 2007). The development of modern day tourism was considered dependent on information technology (Buhalis, 2000; 1998). It was found that due to the popularity of information technology travel agencies introduced IT based applications to make reservations, advertising, and manage links (Chaudhary, 2000). Tourism through videos and photographs enables people to experience a destination at home and is a source of motivation for physical tours (Mura et al., 2017).

The intervention information technology in IA 4.0 has benefited the development of tourism in general (Wong & Hazley, 2020). The use of the Internet of Things, artificial intelligence, blockchains, augmented and virtual reality has made tourism more attractive and sustainable (UNWTO,----). These have eased the process of travel and tourist decision making (Balasubramanian & Ragavan, 2019). Advancement in the internet in IA 4.0 characterized by more interactive travel behavior, user-generated content through social media sites such as FaceBook, Twitter and YouTube make tourism easy and accessible through virtual tours. The adoption of digital technologies such as virtual tours has a positive impact on the tendency to visit the actual site (Said & Aziz, 2021). The integrated technologies of IA 4.0 develop more competitiveness and attractiveness for destinations (Armoo et al., 2020) resulting in more likelihood of brand awareness among tourists (Huang et al., 2013). The concepts of Tourism 4.0 and smart tourism revolve around technologies of IA 4.0 such as the Internet of Things, connectivity, digitalization processes, augmented reality, virtual reality, digital presence, and so on (Pencarelli, 2020). The integrated use of technology in IA 4.0 enabled tourism to masses which was once only limited to rich and affordable

and the international tourist arrivals reached 1.5 billion in 2019 close to 1.8 billion records set by UNWTO till 2030 till COVID-19 halted the pace of global tourism.

COVID-19 and Tourism

COVID-19 pandemic has brought virtual tourism in demand (Chirisa et al., 2020). Virtual reality is not a new concept (Kounavis et al., 2012) but COVID-19 lockdowns have expanded it at large (Debusmann, 2020). Disney provided virtual rides (Hines, 2020) and many other destinations also followed. The COVID lockdowns reduced the negative environmental impacts (Monteiro et al., 2021) and technology (augmented and virtual reality) provides the opportunity for virtual holiday making when physical travel to a destination was not possible (Sarkady et al., 2021). The earlier crisis such as Oil crisis of 1970, the economic slowdown of 2009, SARS of 2002 are evidence that crises have a short span of negative effects and have created better tourism (Glaesser, 2006; Hall, 2010; Rittichainuwat & Chakraborty, 2009). Similarly, COVID-19 has hit hard global tourism but it is viewed traveling will boom back to normalcy between 2021-24 (UNWTO, 2020).

Future Society 5.0 and Tourism

COVID-19 lockdowns lead Industry 4.0 to Industry 5.0 (Society 5.0) (Sarfratz et al., 2021). The concept of Society 5.0 provided by Japan where society will be centre with full integration of technologies such as Internet of Things (IoT), artificial intelligence (AI), virtual and augmented reality, and so on. Likewise Society 4.0, Society 5.0 will utilize technology (IoT & AI) but the emphasis would be on the development of a super smart society rather than smart factories (Deguchi et al., 2020). The 5G is expected to lead future society (Rojas et al., 2021) as it will contribute to industrial advances by enabling faster and effective inspections through predictive intelligence, improving workplace, and enhancing operational effectiveness (Galal & O'Halloran, 2020).

AR and VR will replace physical travel to experience the destination without going there (Mohanty et al., 2020). Destination management can use technologies and take advantage of 5G networks to provide 4K videos to offer a more attentive view to their products and services. This will provide opportunities to experience tourist destinations to those who can't afford to travel due to time and money constraints and will enhance employment opportunities through vlogging. The focus will be smart tourism and smart

destinations (Josep et al., 2017; Fyall & Garrod, 2019). With technological advancements, big data such as user-generated content would be used for smart destination management (Kim et al., 2017). Destination management can take a cue from Big Data using AI to recover COVID-19 losses and achieve the UNWTO target (1.8 billion tourists) for 2030. It is viewed that in Society 5.0 researchers will be increasingly entrusted with data from massive samples, such as TV channels/programs people watch, websites they visit, shopping history, and the shops and restaurants they have visited to find the association that indicates trends, such as people's tastes and preferences, the products that groups with similar tastes and preferences tend to purchase, and where they go to purchase these products (Deguchi et al., 2020). Technology inspires changes in tourist behaviour and is considered as a mediator in tourism experiences (Urquhart, 2019) and consequently provides opportunities to gain competitive advantages (Yallop & Seraphin, 2020). Humans will gain greater opportunities to access AI-derived knowledge in society 5.0 that will be used to make improvements (Deguchi et al., 2020). AI-driven technologies can support DMOs in good governance, in managing tourist destinations with over-tourism, no tourism, or limited tourism.

Discussion and Conclusion

The architecture of tourism will be based on future technologies and will evolve consistently with the advancements therein. The increased investments in 5G technology will bridge the digital divide creating equitable access for extended tourist experiences. The technology will also bring transparency and openness to all businesses.

The tourist of the future is expected to be more informed, ready to experience tours in different formats, and use every tour as a business opportunity through sharing platforms. The businesses will be equally responsive to the evolving needs of the new tourist.

Virtual tourism shall be salable to the tourists who are likely to avoid physical travel due to numerous constraints on their part. This will also minimize the risks of intangibility and enhance motivation to actual travel.

The technological advancements will also influence the investigating abilities of the tourists. This presence of multiple sources of information may be generally deemed unfit but then, the tourists' hunt shall lead them to the most credible seller in the market because that is fundamental to the technology driven industry. Furthermore, the challenges related to the destination's presentation and management shall enhance, and more shall be

required to stay relevant in the market. This shall further benefit the industry and shall likely bring in more professionalism.

The impact of the future technologies as evident from the literature shall not be disruptive. Virtualization is likely to further job creation and widen the reach of the market and its products. The technology driven Society 5.0 will therefore bring about a positive impact on the tourism sector and shall there be beneficial to both the developed and developing world. The developing nations challenged by the security situation can utilize the options of virtual tourism to revive the sector to support their crumbling economies. The technology will assist them to compete with the other parts of the world that are open and relatively accessible to tourists around the world.

The undesirable impact brought by the COVID-19 on the tourism sector can also be reduced in the post-COVID-19 world with help of the emerging technology. The examples of that as cited in the discourse will ensure better health safety and help in recovering the losses. As and when the situation is brought under control the experiences brought forth by the technology will pursue more and more people to undertake the travel physically to the previously unknown destinations.

Technology therefore will bring about interest and curiosity within the tourists to experience the destinations in the real world. The assertion of greater inflow is therefore a high possible, suggesting the use of technology is an investment for a better future that will eventually lead to an economically stable industry and global economy.

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