Virtual Tourism: on the Way To the Digital Economy

L P Voronkova

Lomonosov Moscow State University, Moscow, Russian Federation,

email: 123msu@gmail.com

Abstract. The article examines tourism computerization processes. Three main directions were identified: the development of global booking and reservation networks, the emergence of electronic marketing and management as well as the design of virtual tourist trips. The main focus was made on the new direction in the digital transformation of tourism, namely on virtual reality technology introduction. Virtual reality is used mostly in advertising of tourist products as well as in guided tours, for education and recreational purposes and the development of social tourism. The future of virtual tourism depends on the improvement of technical capacity for designing virtual tours, creating content for them etc. The article notes the importance of tourism digital transformation for the purpose of the development of a digital economy. Adverse consequences of virtual reality introduction to the tourism sector are identified. The article indicates that the recognition of potential consequences of virtual tours on a living human and the formation of communication culture in virtual tourism is going encourage the transformation of tourism industry into a people-oriented digital economy.

1. Introduction

New globalization processes dramatically changed almost all areas of our society's life. The world has entered the informational age with the emergence of a digital economy being its primary trend. The number of world economy industries not affected by digital transformation is continuously decreasing. International tourism is at the forefront of these processes, the Internet dependence of the tourism market is growing, and the tourism digitalization process is quite fast. The introduction of digital technologies leads to the change of roles in the tourism industry with new forms and content.

International tourism is as of today ready to make use of yet another digital breakthrough, namely the virtual reality. In the late 20th century, a well-known sociologist and modernity expert Manuel Castells said that the "culture of real virtuality" was forming [1, 351-352]. At the moment, the virtualization is expanding being a new effective technology that affects all spheres of the human society. It is vital to take into account that the number of virtual reality (VR) users are rapidly growing. According to experts' forecasts, "in two years the number of active VR users will reach 171 million people, and by 2020 the market will grow to 705 billion" [2].

Attempts to analyse virtual reality have been made since the 20th century. Science fiction writers, moviemakers and columnists were the first to do that. The virtual reality was interpreted differently by various sciences. The virtual world was seen as a dream, altered state of consciousness, shamans' practices, as something illusionary, opposite to our world. Major scientific publications were linked to philosophical, philosophical, anthropological, and psychological research, which indicated that a crosscutting research area of "virtualistics" was being developed and approaches were being devised to analyse the new phenomena that the virtual world constituted for the humanities [3].

In the late 1990s, researchers wanted to know whether the use of virtual reality technologies in tourism was just a fancy. However, later the areas of virtual reality applications were examined [4]. With the wide-scale advent of the Internet and the development of relevant technologies, tourism experts and professionals showed increased interest in the research of this topic. Scientific publications regard virtual tourism as a new kind of tourism [5]. National and foreign experts actively study the subject related to the understanding of the role and importance of virtual reality in tourism [6]. The pertinence of scientific achievements in the field is because international tourism is a dynamically
developing phenomenon in today's world, it is basically on the verge of making a revolution as the advent of virtual tourism can dramatically change the idea of tourism and the tourism industry itself.

2. Goal setting
The future of tourism is directly linked to the ongoing processes of computerisation and digitalization that give tangible economic benefits to international tourism. The introduction of virtual reality to tourism is in its early stages. The goal of the present article is to identify the direction of virtual tourism formation and its impact on the development of tourism as a digital economy industry.

3. Theory
The analysis helped to establish that in international tourism the computerisation has started to develop in three primary directions: the creation of global booking and reservation networks, the advent of electronic marketing and management and the design of virtual guided tours.

The creation of global booking and reservation networks (Global Distribution Systems) enabled both experts and tourists themselves to search the Internet with ease for appealing hotels, comfortable means of transfer etc. Today, there are many global booking and reservation networks, with Amadeus, Galileo, Worldspan, Sabre being the most popular; they are being improved continuously. One of the directions of this process concerns the transfer from online booking to full-scale selection as well as comparison of and payments for tours.

The next stage of using computer technologies that is going to have a considerable economic impact is linked to the development of electronic marketing and management in tourism. Computerization of the production process in tourism is going from relatively simple programmes aimed at automation of office work to the future automation of certain segments of the tourist industry. The advent of virtual offices of tourist companies on the Internet enlarges the range of opportunities for the representation of different routes, transportation and accommodation options on the market. The already existing virtual worlds, for instance, "Second Life" launched by Linden Lab in 2003, are used for these purposes. Information technologies are utilized in all functions of strategic and operative management in the tourism industry, all the while making it more flexible, competitive, and adapted to the digital economy environment.

The third direction of tourism computerisation is linked to virtual reality technology use. Virtual reality can take different forms depending on utilized technical equipment and goals that need to be achieved. Virtual reality is most popular with tourist product advertising. Promoters use the virtual reality technology. Researchers believe that "as new technologies develop marketing experts discover new innovative ways of using visual representation to promote an attractive and positive image of a destination that increases the number of tourists, encourages economic development and makes consumers' decisions more crucial in ever more complex and competitive global market" [7]. Many tourist centres have started to implement this strategy.

Besides advertising, virtual tourism can fulfill cultural, educational and recreational functions. As an example, we can cite virtual museum tours that were first introduced in the late 1990s. Today, there are many museum tour catalogues on the Internet [8]. Russian and foreign experts study virtual museums as a phenomenon of modern culture and their role [9].

Virtual tours have real-life applications. Scientists and tourism industry workers believe that virtual travelling may target primarily the disabled. A new technical manual on social tourism states that "the main purpose of virtual tourism is to broaden the horizons of the elderly people and the disabled, to show them the opportunities offered by the Internet, to make them more interested in the history of their native land, and to introduce them to the culture of other cities and countries" [10].

Virtual tours are seen as a substitute for visiting specially protected areas as well as tourist destinations closed to the public. For instance, this was the case of virtual guided tours in the Lascaux caves in France famous for their Paleolithic rock paintings that have been closed since 1963 [11, 645]. In 2019, Kapova Cave in Bashkiria is being closed too, and the relevant virtual tour has already been presented to the nature reserve's visitors. The list of natural and cultural heritage assets with available
virtual tours is constantly growing. Such virtual tours can be lucrative and act as a means to mitigate the adverse consequences of tourism. The economic effect of virtual tours for a consumer is apparent too. For example, a helicopter tour above a city may cost about ten thousand rubles while there are new companies that offer similar virtual tours [12]. The development of this segment of virtual tourism is hindered by the equipment, which is still expensive, and a small number of digitalized tourist destinations. The creation of interactive content must become a priority for both virtual device designers and the education, culture, business, and production sectors [13].

Broad introduction of virtual reality technology in tourism directly depends on the available technical capacity. A couple of years ago VR glasses and helmets seemed astonishing while nowadays real progress has been made in developing more functional VR devices and platforms. Major companies across the world invest in this sector, for instance, Facebook, NVIDIA, GoPro; niche companies that focus on developing VR platforms are being established [14]. In 2016, first modern professional virtual reality devices appeared on the market [15]. Specific tourism platforms that are going become the digital economy's driver are being developed. As a whole, the development of virtual reality technologies depends on the ability of tourism industry workers to introduce new business models [16].

Accelerating virtual reality introduction that opens new technical horizons indicates that virtual tourism development can have a considerable impact.

One of the challenges discussed by experts and industry workers is a potential threat of virtual tourism to the tourism industry as a whole. Will virtual tourism become a substitute for real tourism in the future or even lead to its eventual demise? Nevertheless, today's virtual reality is, using a gaming term, only an exploration game with museum halls, hotel rooms, beaches and tourist attractions as its setting. Nowadays, VR is just an electronic marketing instrument. This is why there is an opinion that virtual tourism in its present form will not be able to substitute the real one.

Virtual reality trip differs from real tourism in its essence, as it does not have its basic characteristics: a person does not change his or her environment, nor do they change in space. The situation has started to change in recent decades with the development of technologies and changes in public consciousness under the influence of globalization. Scientists have begun to discuss the phenomena of "distance death" that results from global computerization and large-scale migration flows. The on-going processes are dramatically changing both the lives of people that have experienced the shrinking of space and time and the society as a whole by becoming its economic force [17]. John Urry, a British sociologist, wrote, "There is no evidence that virtual and imaginative travel is replacing corporeal travel, but there are complex intersections between these different modes of travel that are increasingly de-differentiated from one another" [18, 136].

The immersion into virtual reality gives people significant opportunities. Already in 1995, virtual reality was defined as "a computer-mediated sensory experience that helps to access dimensions different from our own" [19, 417]. The question of how a person is going to react to those differences is becoming more and more important. Today, the negative impact of VR glasses on human health is being detected (worsening eyesight, etc.). Addiction problems with such virtual entertainment as computer games are quite well known. Many experts focus on social degradation caused by virtual addiction, physical and psychological problems of people who are addicted to virtual reality [20].

Today's society, in researchers' opinion, has a new socio-cultural community of people who want to spend a considerable part of their lives in the virtual world [21]. People are also changing. They are becoming tourists who "travel" the Internet where they find like-minded people. Virtual reality is a new kind of human activity, a communication environment that has its own culture, language and relations.

4. Conclusion
Developing virtual reality technologies are becoming instrumental in addressing the many challenges of modern tourism. Virtual tours in marketing and management proved to be a promising tool to organize and manage tourism industry. Marketing experts widely use virtual tours to attract potential
clients to particular tourist destinations and tours. Visualization helps to promote destinations’ positive image that leads to their economic development due to the growing number of visitors. Virtual tourism helps both to increase tourist flows and to diminish them where for a number of reasons tourists’ safety cannot be guaranteed, or there are cultural and natural heritage assets that need protection. Virtual reality travelling has many other functions including education and entertainment. The results of introducing virtual reality in tourism are considerable and can enable it to become a digital economy sector.

With the development of the digital economy, the research of virtual reality is becoming more practice-oriented, in both the improvement of IT technologies and industrial digital platforms and, most importantly, the study of its consequences for a person immersing into the virtual world. It gives scientists new questions to answer. Further design of virtual worlds and travel organization must be based on the anthropological approach. It is necessary to take into account the impact of virtual tourism on a real person, to form the culture of virtual tourism, which is going to help to make the tourism industry a people-oriented digital economy sector.

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