INTERNATIONAL EXPERIENCE OF USING COMPUTER AND GAME TECHNOLOGY TOOLS IN THE TOURISM BUSINESS

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Abstract: At present, humanity is living in a technological age, when new proposals for the development of tourism appear every day. One of these proposals is to combine tourism with one of the most relevant areas of human activit - computer and information technology. The introduction of IT technologies into the tourism sector will contribute to new innovative tourism products, accompanied by an improvement in the quality of service and personalization of future tourist routes. International experience in the use of digital tools in tourism has been analyzed: online booking systems, augmented and virtual reality, virtual tours, gamified platforms, and artificial intelligence. Modern tourists are quite demanding when it comes to organizing their vacations and need to have an emotional experience even before traveling through a virtual acquaintance with the place of rest or recreation. International experience in the use of digital technologies in the development of the tourism sector clearly demonstrates an increase in the attractiveness of tourist destinations and the competitiveness of the tourism business.

Keywords: tourism, computer technologies, gamification, innovations in tourism, augmented reality, virtual reality, artificial intelligence

JEL Classification: L83, L86, O33, Z33, M31

INTRODUCTION

At present, humanity is living in a technological age, when new proposals for the development of tourism appear every day. One of these proposals is to combine tourism with one of the most relevant areas of human activity - computer and information technology. The combination of these

two activities can take various forms. The creation of innovations in the tourism business, such as computer technologies, provides opportunities for the tourism industry to develop new attractive tourism products. For example, powerful accommodation booking systems, improved logistics in the tourism business, improvements in excursion and cultural and health services, the introduction of the latest technology in the field of tourism, information about the availability and accessibility of certain types of routes, the tourist potential of countries and regions – all these measures help to increase tourist interest and promote certain destinations. The combination of tourism and computer information technologies can vary, but in all cases it will contribute to improving, the efficiency of tourist services by improving the quality of service and creating personalized tourist products. In recent years, there have been significant changes in the tourism business. Modern tourists are quite demanding when it comes to organizing their vacations and need to have an emotional experience even before traveling through a virtual acquaintance with the place of vacation or recreation. This is where computer and gaming technologies come to the rescue: augmented and virtual reality, gamified applications, artificial intelligence, and interactive maps, which are now widely used as tools to attract tourists.

MAIN CONTENT

Today, computers, computer equipment, and computer technologies have become an integral part of our daily lives. It is difficult to imagine the operation of any enterprise or company without computers. Online airline ticket sales systems are particularly popular among consumers. The advantage of such a sales system is that you can make the necessary purchases, place an order, or book a ticket without leaving your home or office *("Booking tickets online,"* accessed 10.04.2025).

Websites such as www.airbnb.com.ua/ and www.booking.com provide accommodation services for tourists to companies, i.e. owners of hotels, hostels, and apartments.

Booking.com, founded in 1996 in Amsterdam, has grown from a small Dutch startup to one of the world's digital leaders in the travel industry. Booking.com's mission is to make travel accessible to everyone. By investing in technologies that help people travel hassle-free, Booking.com offers millions of guest's great leisure options, transportation services, and incredible accommodations, ranging from homes to hotels and beyond. As the world's largest travel platform for both well-known brands and entrepreneurs of all levels, Booking.com helps accommodation owners around the world attract guests and grow their businesses. The Booking.com platform is available in 43 languages. It offers more than 28 million listed accommodations for booking, including more than 6.2 million homes, apartments, and other unique accommodations ("*About Booking.com*," accessed 10.04.2025).

Airbnb is an online service for finding and renting short-term accommodation around the world, operating on the paradigm of the sharing economy. The name stands for "AirBed and Breakfast." The service helps people rent houses, apartments, rooms, or beds in more than 190 countries around the world. Airbnb founders Brian Chesky and Joe Gebbe moved from New York to San Francisco in 2007 and were unemployed for a while, unable to pay rent for an apartment. They were looking for a way to earn some money and noticed that all hotel rooms in the city were booked at the time because a local industrial design conference had attracted a large number of visitors. The young people saw this situation as an opportunity to make money (*"Airbnb: From Inflatable Mattresses to the International Market*," accessed April 15, 2025).

Today, thanks to the development of the Internet, booking airline tickets online has become widely popular. Anyone can easily book a ticket on airline websites or on the websites of auxiliary

agencies. Such bookings made using the Global Distribution System (GDS). If we analyze how booking systems work, we can conclude that these systems act as intermediaries between airline booking systems and travel agency sales systems *("Booking tickets online,"* accessed 10.04.2025).

It is also worth considering the fact that in different GDS systems, fares for the same airline and the same route, for example, Kyiv-Prague, can vary significantly. The online booking system saves consumers time. In addition, customers can always easily view all current offers and choose the best option for themselves *("Booking tickets online,"* accessed 10.04.2025).

A powerful tourism trend today at the international level is the combination of artificial intelligence with mobile applications. Below are a few examples. Utrip is a free travel planning technology that combines the best of artificial intelligence and human experience, allowing travelers to quickly create the perfect trip. A destination search and travel-planning platform combine the best of artificial intelligence and human experience to help travelers find destinations and plan trips in a unique, personalized, and enjoyable way. Utrip PRO helps increase engagement, loyalty, and conversion rates by offering the Utrip platform as a white label to hotel brands, cruise lines, landmarks, airlines, and destination marketing organizations (Utrip, accessed 15.04.2025). The service is in the process of transitioning from the old version to the new one. The most covered country in both versions is the United States. As for Europe, the new version currently covers only a few major cities (Rome, but not Milan or Venice; Barcelona, but not Madrid; Paris and London, but not Germany or Prague *("Online travel planners research. Part 5. Utrip: the two-headed monster,"* accessed 15.04.2025).

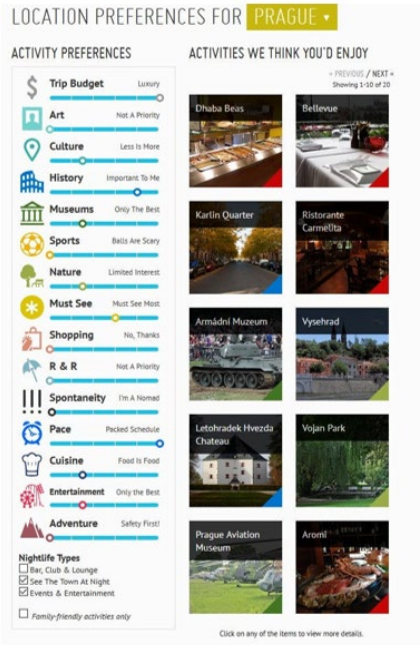


Figure 1. Planning a tourist route using the Utrip.

Source: *Online travel planners research. Part 5. Utrip: the two-headed monster.*

TripAdvisor is known as the largest travel review site and is a powerful tool that helps travelers decide where to stay, what to visit, where to eat, and how to fly, providing the opinions and past experiences of other travelers. The advantage of using TripAdvisor for travel planning is that it uses reviews (feedback) to facilitate the decision-making process. It combines all the necessary elements that make up a trip, namely flights, accommodation, restaurants, and attractions. Travelers can search

for information and reviews on all of these elements on TripAdvisor without having to visit multiple websites to gather the necessary information. Another advantage is that TripAdvisor works with many airlines, travel agents, and booking agents to provide booking services. Travelers can book flights, tours, and accommodation. To facilitate the search, TripAdvisor uses different approaches to recommendations in different aspects (Lim Yen Yee *et al.,* 2019).

TripHobo is a travel-planning platform that helps users plan trips to destinations, restaurants, and package tours in over 90,000 cities around the world. It is an online application that functions as a one-stop shop for all travel needs, covering places of interest, route planning, package tours, and ground transportation arrangements such as accommodation and local transportation. If places are missing from the current list, users can add a place directly from Google. Users can customize their itineraries by registering as members. In addition, users can share their travel plans with others by registering through their Facebook accounts. Itineraries can also share on Google+ and Twitter. The interface is user-friendly, with drag-and-drop features, the ability to add trips to selected days, add days, and optimize routes. Although the route optimization feature may indicate that the routes for the day are almost full and the user cannot add more, it does not have the ability to group nearby places into one day of visits. TripHobo can estimate the distance and travel time from one place to another, as well as indicate the opening and closing times of each place. However, the planning does not take into account the time users spend at each location. The estimated time is the minimum for a tourist, and some tourists may find it too short and may have to use their own judgment to adjust the time accordingly (Lim Yen Yee *et al*., 2019).

The use of gamification models in tourism is not limited to tourism organizations. Gamification models are also used to promote and market tourist destinations. In particular, augmented reality (AR) and virtual reality (VR) applications are used to create a gamification model by transferring a digital environment with various animations and simulations of historical, cultural, and natural features to a destination, which can help tourists fully experience the destination. To better understand the idea, one can cite the example of the digitization of a destination, where a tourist visiting the Berlin Wall visualizes the state of the wall before its demolition on the screen of their smartphone, with instant access to information and video materials about its history outside the wall (Emrah Özkul, Emre Uygun, Selen Levent, 2020).

Digital gamification in the tourism industry makes the service interactive, allowing people to enjoy the process. The main goal of gamification is to ensure user loyalty to the business by creating the impression that they are part of a story designed to attract the user's attention with the right content and stories. Companies in the tourism industry (airlines, travel agencies, accommodation providers, etc.) have begun to transfer their booking systems to digital platforms. Mobile applications used by companies that continue to provide services on these digital platforms have allowed travel consumers to access the businesses and services offered by these companies without restrictions on time and place. Companies use gamification models to provide a more convenient and interesting way for consumers to access their services. One of the exemplary gamification models used by companies is to allow travel consumers to collect points for each flight, accommodation selection, or mobile check-in via a mobile app and earn various gifts that they can use in future transactions (Emrah Özkul, Emre Uygun, Selen Levent, 2020).

In 2021, the augmented reality market was valued at $8.6 billion, and it projected to grow at a compound annual growth rate of 38% through 2030. This growth extends beyond the technology and gaming industries, significantly affecting tourism as well. According to a Kantar study commissioned

by Snapchat, up to 93% of travelers said they would use augmented reality at some point during their future travels. This rapid adoption driven by several factors: growing consumer interest in exciting adventures, the development of augmented reality technologies that make them more accessible and cheaper, and the development of solutions that simplify the integration of augmented reality for tourism organizations and tourism businesses. Companies such as Wikitude, HiVu, and Echo3D specialize in developing augmented reality models. In addition, tourist guide systems such as SmartGuide can host and publish augmented reality models for tourist destinations and attractions, simplifying the process. Even without complex augmented reality models, destinations and attractions can create immersive augmented reality experiences using authentic historical photographs that can be converted into augmented reality objects on platforms such as SmartGuide, simplifying the implementation of augmented reality *("Strategies for digitalization in tourism - Integrating digital tools in tourism management,"* accessed 20.04.2025).

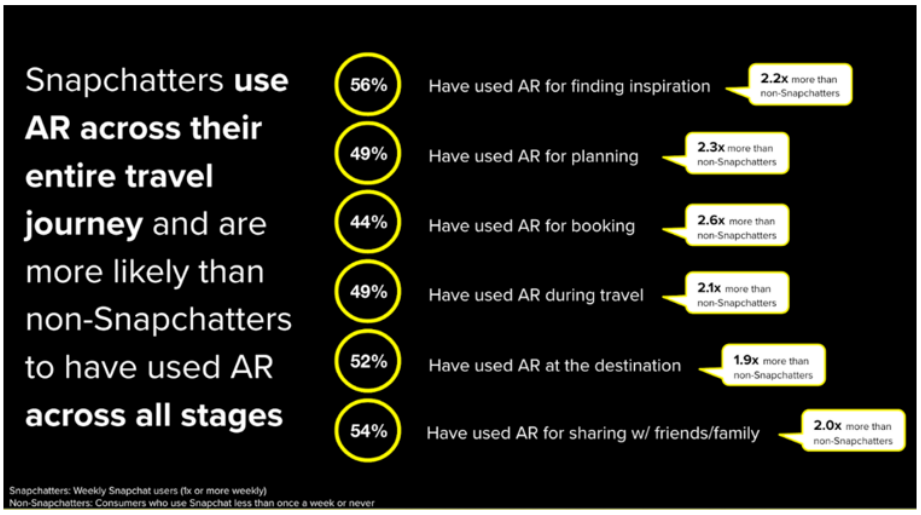


Figure 2. Results of a Snapchat survey on the use of augmented reality by tourists.
Source: *Uncovering the Value of Augmented Reality in Travel*

Snapchat and Kantar have teamed up to better understand the role augmented reality can play for consumers on their journey to purchase for travel – from initial inspiration to sharing experiences after reaching their destination. Kantar conducted a quantitative survey of 1,004 current and future travelers in the US aged 13 to 49, and the study revealed some key findings about the role of augmented reality in travel. Snapchat is a leader in augmented reality, with an average of nearly 250 million Snapchat users interacting with augmented reality every day. The study found that augmented reality on Snapchat has a particularly strong impact on consumer travel, with 68% of Snapchat users having used augmented reality at least once during a past trip, compared to only 41% for those who do not use Snapchat *("Uncovering the Value of Augmented Reality in Travel,"* accessed 20.04. 2025).

CONCLUSIONS

Technology has always attracted attention and interest from the global community. Technologies have been improving, thereby improving human life. Information technologies have greatly facilitated human activities in many areas of life and even provided new jobs, while gaming technologies have allowed people to relax and, to some extent, replenish their moral and physical resources, similar to "recreation."

In the tourism business, information, i.e., computer technologies have greatly facilitated computing activities, customer database maintenance, interaction with tourists, advertising activities, etc. The introduction of technologies in the tourism business is relevant and even necessary now, because without automation, a company becomes uncompetitive.

International practice proves the effectiveness of introducing computer and gaming technologies in the tourism business. VR/AR technologies, gamification, interactive platforms, and AI applications contribute to increasing the competitiveness of tourism companies, creating a unique customer experience, and developing sustainable tourism.

For the Ukrainian tourism market, it is advisable to implement pilot projects using such technologies in domestic tourism, develop partnership programs with technology companies, and train personnel capable of working in the context of digital transformation.

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