

## **DIGITALIZATION AND ARTIFICIAL INTELLIGENCE: NEW DIMENSIONS IN TOURISM**

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### **Abstract**

*Artificial intelligence (AI) offers a wide range of opportunities that increase productivity in the tourism sector. Travel companies use AI for various administrative tasks as well as for customer support. Hotels and other travel companies have already used chatbots on social media platforms and instant messaging apps. In addition to customer support, AI may be used in tourism for quick and accurate collection, sorting and interpretation of data. The author in this paper will point out the positive impact of AI and digitalization in the tourism sector. Besides that, the author will explore the ways in which the new possibilities of digital technologies can make travel services more accessible, easier and more customized in the future. Yet, the research will show that in tourism, the replacement of the human factor with artificial intelligent technologies in certain situations is still impossible and undesirable.*

Key Words: *tourism, smart hotels, artificial intelligence, digitalization*  
JEL classification: *O3, Z30, Z33*

### **Introduction**

Digitalization is a process in which "earlier analogue information is digitized by means of information technology or preexisting stored digital information is processed" (Gläß, Leukert, 2017). Digitalization is the cause of great changes in many areas of business. In addition, digitalization poses a major challenge for companies and carries with it many risks, such as changing behaviors and customer expectations. An example of this is the changed behavior of tourists who are looking for more and more information about travel and destinations on the Internet. These emerging

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opportunities and risks require professional digitalization strategies and information technology expertise. This is especially true for tourism, as digitalization is one of the key drivers of change. The digital transformation in the tourism industry is, therefore, an important pillar for increasing the attractiveness of this sector of industry.

More than twenty years ago, the World Wide Web, better known as the web, was established in our society (Lučić, 2018a). This network has played an important role in the development of the information society, fundamentally changing our habits in information and communication (Lučić, 2018a). The web is the primary means of interaction on the Internet. Before the advent of the Internet, private and business conversations took place in person. For example, travel information was obtained through various information sources. Traditional sources of information include travel agencies, advertisements in magazines and on television, travel catalogs, travel guides, recommendations from relatives and acquaintances. These sources of information were of great importance for making a travel decision. Personal advice in a travel agency together with a package deal as an organizational form have remained a popular type of booking. Yet, today, applications, smartphones, social networks and platforms are being increasingly used in both personal and professional communication. With the development of the Internet, many additional free sources of information have emerged that have changed the behavior of tourists in making travel decisions. The number of online reservations is increasing year in and year out. In the last two years, the ongoing COVID-19 pandemic has contributed to this.

Tourism is one of the sectors most affected by the use and spread of digital technologies. These technologies, especially smartphones, have transformed the tourism sector (Buhalis, O'Connor, 2005) and influenced the establishment of a new world tourism order confirmed by the COVID-19 pandemic. The adoption and use of information and communication technologies allow companies to facilitate more complex tasks such as Internet visibility, information retrieval, advertising products and services, or customer loyalty. However, the adoption and use of digital technologies such as artificial intelligence and digital marketing implies systemic change in many sectors and aspects of human life. The tourism sector was among the first to massively integrate these techniques and digital tools and continues to use them, due to the nature of its activities and the behavior of its target groups. Internet users are increasingly using social media applications to obtain information about tourism service providers. In this

sense, digital marketing is of great importance for the development of the tourism market. This will be discussed further in the paper.

### **Digital marketing**

The development of digitalization in recent years has led to changes in many areas, including the habits of individuals and consumer behavior. To keep up with this change, companies are being forced to change the channels that connect them to consumers. In that sense, marketing as a discipline that connects the company with consumers has gone digital. Digital marketing is the integration of digital media, data and technology into marketing goals (Chaffey, Ellis, 2019). In addition to the term digital marketing, the term online marketing is a common synonym in general use, as digital marketing activities are mostly conducted online or via mobile devices. Digital marketing is based on the use of the Internet and related tools and objects, e.g. social networks, smartphone and tablet applications, websites, podcasts, online videos, commercial emails, Search Engine Marketing (abbreviated SEM). There are two ways to better position SEM on Google search: through search engine optimization or through advertising on Google (Search Engine Advertising).

Other tools can be used in digital marketing. For example, market research can be supported by computer surveys, online panels, but also by digital forecasting systems. Digital pricing and simulation models provide support for pricing policy, while product policy can benefit from computer-aided design programs, digital and automated diagnostic tools, and virtual development teams. Digital marketing tools are also widespread in the field of sales policy.

Digital marketing allows companies to direct Internet users to their site in order to attract potential customers. In that sense, the central component of digital marketing is the website of a company, which is actually its online identity. The design and content of the website play a prominent role in the presentation and offer of products and services of a company. A large number of marketing channels and activities are available on the website to increase customer awareness of the content that is presented and offered. Using search engine optimization (SEO), the content of a website should be designed using relevant keywords so that search engines such as Google and Bing can easily find it. Website content and information about products and services can also be distributed through social networks such as Facebook, Instagram or Twitter. These social networks are especially

suitable for interacting with (potential) customers, especially as they also offer the option of paid advertising, known as influencer marketing.

Digital marketing is the successor to traditional marketing, and most companies use it in their business. Unlike traditional marketing, which is based on the use of magazines, television and advertising material, the tools on which digital marketing is based (websites and social networks) enable wider and faster access to customers. Due to the larger volume of Internet users compared to the number of people who read newspapers and watch TV, digital marketing enables faster interaction with customers. However, regardless of the advantages of digital marketing, traditional marketing is not obsolete and outdated. For the older generations who do not use the Internet and social media, traditional marketing has no alternative. Depending on the target groups, a company will choose the best marketing option for its own business.

### **Importance of digitalization for tourism marketing**

As a generic term, tourism includes the travel industry, catering with hotels and restaurants, as well as the entire leisure industry. In this context, tourism is one of the most important sectors of the economy. Additionally, the tourism industry is extremely competitive. For this reason, companies operating in the tourism industry must find ways to differentiate themselves from competitors, to present themselves as the best option for tourists, and to highlight some of the things that make them different or superior. Marketing is essential for achieving these goals. Tourism marketing is a common term for various marketing strategies used by companies in the tourism industry, such as hotels and other forms of accommodation, travel agencies, restaurants, airlines, car rental companies. The purpose of tourism marketing is to promote business, differentiate from competitors and attract customers.

Just a few decades ago, hotels, rooms and holiday homes had to be booked at a local travel agency. These agencies annually issued new travel catalogs through which individuals received information about tourist destinations. In the 1990s, these print media and related forms of booking were replaced by online presence. Today, tourism marketing cannot be imagined without the website of a local travel agency, without the homepage of the owners of private cottages and without online reservations. Digitalization, therefore, plays an important role in the development of tourism marketing. However, digital technologies were initially used only by large travel

companies. Today, information technology has greatly changed the mindset of managers of most travel companies. In recent years, the tourism sector has placed increasing emphasis on the company's intangible assets. Some companies, such as Airbnb, the value of which was estimated at 38 billion dollars in 2018, skilfully used the advantage of digital marketing to their advantage without investing in their own assets.

Digitalization has proven to be a great opportunity and challenge for tourism (Trunfio, Lucia, 2016). Unlike most other industries, tourism is a sector in which services are provided instead of material products. Due to the properties of the tourist product - intangibility, digitalization has greatly affected the tourism industry. Today, there are a number of applications that allow travelers to book their trip. Thanks to the option of online ticket purchase and check-in at the airport with a bar code or QR code, passengers avoid waiting in line and the burden of staff checking airport tickets is reduced. The problem of accommodation is also easily solved with online booking.

Due to the high demand for information, the tourism industry has always been at the forefront of using new technologies. In addition to this, new ways of marketing tourism products in line with changing consumer habits are constantly being explored. Tourists are increasingly looking for more credible sources of information in order to plan their vacation in advance and get the best offer. The great demand for information in tourism constantly requires new technological solutions and points to the importance of the Internet, which has made it possible to meet the massive growth in demand for tourist arrangements and the growing dynamism and flexibility of tourists (Habibeche, Zaiem, 2014).

Thanks to digitalization, the number of activities and in-flight passenger entertainment is growing, especially on longer flights (movies, video games, TV shows, music). Digital marketing facilitates the promotion of airline products as well as small local tourism businesses. In some countries, thanks to digital marketing, travelers prefer local accommodation over luxury hotels. In this way, tourists can communicate more with the local population, which has contributed to the exceptional development of local tourism.

Globally, in addition to the growth of visits to tourist websites via mobile phones, the number of online reservations via smartphones is also growing. Mobile payments are also on the rise, especially with Chinese tourists. The

use of Whatsapp, Facebook Messenger, Instagram and YouTube is also increasing, and people are increasingly sharing their holiday experiences on these platforms. The hashtag *#travel* is one of the most commonly used hashtags on Instagram. Expectations have been particularly high since the introduction of the new 5G standard of mobile communications, which brings along much higher speeds, higher capacity and, above all, shorter response time in the mobile network. It is expected that the new faster Internet will encourage, above all, business but also private travel.

### **Virtual and augmented reality in the tourism sector**

Globalization and digitalization have had a very positive impact on the tourism sector. Primarily in Western societies, traveling using new technologies is part of the culture of living. By accepting new trends, interested parties in tourism, in addition to following the spirit of the times, also have a certain benefit through increased productivity and workload. One of the new trends in tourism marketing that will gain more importance in the future is virtual and augmented reality. Virtual and augmented reality are generic terms for two technologies that redefine the boundary between the real world and the virtual one. There are differences between virtual and augmented reality (AR). With virtual reality, the real world is completely hidden; with augmented reality, the real world is expanded by virtual elements. Regardless of the differences, both technologies have the potential to be affirmed in the future as an important tool in tourism marketing.

Virtual reality (VR) allows users to immerse themselves in a 360-degree virtual world with VR goggles and experience 360-degree images or videos. The user has the feeling that he is somewhere in person and can look around without having to be there directly. On the other hand, augmented reality is the possibility of enriching the real world with virtual content. This means that additional information such as images, text, animations or videos are added to real things. You need a mobile phone or tablet to experience augmented reality. An example of the use of augmented reality is in museums, where with the help of AR applications, visitors can get even more information about objects and works of art.

The key difference between VR and AR is that virtual reality offers the user a unique feeling of being in another place with VR glasses. With augmented reality, the user has to be at a certain place to be able to see virtual extensions, but he is still in real space all the time. Still, both technologies are combined in different areas, including the tourism sector.

Unlike the traditional vacation, which includes going to a travel agency, choosing a trip from the agency's catalog and geographically changing the location, virtual reality allows you to enjoy various tourist attractions without physically changing the location. Virtual trips that are of interest, primarily to a younger population, are performed with the help of VR goggles or VR technology for orientation at the chosen travel destination. In line with the needs of clients, travel companies are increasingly showing interest in VR. However, this trend is negatively affecting small, local businesses such as family travel agencies.

Augmented reality can be defined as “a strategy that aims to create the illusion in people that they are actually in a computer-simulated location - the illusion of space” (Denk, 2016). With VR technology used to launch this illusion of location, individuals find themselves in a virtual environment. The current technology on which VR is based is designed for smartphones and tablets. New techniques, formats and tools for using VR are likely to emerge in the future.

Virtual and augmented reality bring many new opportunities in the tourism sector. VR and AR can be of particular interest to people who are no longer able to travel due to illness or old age. This technology is also used in the marketing of transport companies whose task is to transport tourists to a certain place quickly and safely. Namely, airlines use VR and AR in order to present their destinations. Additionally, during a boat cruise or thematic train trip, with the help of VR and AR, it is possible to present certain locations, facilities, accommodation capacities that are included in a specific trip. In addition, augmented reality has the potential for instance, for passengers at the airport to most efficiently get to a nearby taxi stand, bus or train station, without long detours. Virtual reality has a positive effect on an individual's motivation to actually visit a place. With the right technology, individuals can digitally visit a destination using the QR code shown in the travel agency's catalog. This way, it is possible to obtain more comprehensive information about a particular destination and thus facilitate travel decisions, avoiding, for example, unwanted surprises when entering accommodation and hotels. Even after traveling, with the help of appropriate technology, it is possible to watch 3D videos taken on vacation and thus revive the feeling of relaxation. Virtual reality is especially suitable for lesser-known destinations. Quality information necessary for deciding on visiting these destinations can be obtained with the help of the application, i.e. by pointing the mobile device camera at an object at that destination.

In the hotel industry, VR and AR can be a powerful marketing tool. Tourists like to get as much information about the hotel as possible before booking accommodation. Individuals can get the maximum and authentic amount of information virtually, by "walking" through the entire hotel space via the appropriate application. With the help of AR, hotels can provide interactive maps on the walls of the rooms that can be easily scanned with a smartphone and provide information about internal services or nearby attractions, sights and the like.

Augmented and virtual reality as tools of tourism marketing have potential, i.e. many new opportunities for the future of tourism. It has been noticed that simple videos of certain tourist destinations in 360° resolution have become popular, because they allow an individual a different experience than that of a standard video or just some picture. Travel companies have recognized the value of this new technology and are trying to use it to connect more firmly with customers. Airlines are particularly interested in applying AR either as a marketing tool or for training in technology. In addition to airlines, some world hotels have made their first steps in the implementation of AR and will continue to implement it in the years to come. Large booking platforms are also interested in applying this technology. Yet, this technology is not widely known to most tourism service providers, and is mostly used experimentally rather than as an established powerful marketing tool.

VR and AR, therefore, are still in their infancy in the tourism sector, i.e. at the very beginning of their development. Namely, the technology necessary for the application of VR and AR are still inaccessible to most individuals. Compared to regular marketing tools, the development of AR applications requires significantly more time, money and resources. Apart from this, the cost of purchasing equipment is still relatively high and only a small part of the population already owns VR goggles, which are not very cheap. On the other hand, this technology is cumbersome and can cause discomfort and fainting due to increased pixelization in a virtual environment. All this can contribute to individuals losing interest in this technology. In the long run, the technology on which VR and AR are based can become a marketing tool on the mass market, provided that this technology is further improved and made available to end users.

The application of augmented and virtual reality as a marketing tool in tourism largely depends on technical development. Currently, VR and AR technologies are still highly dependent on computing power, memory,



sensors and screen quality of smartphones or computers. Despite the fact that smartphones are constantly evolving and becoming more efficient and intelligent, a stand-alone set of goggles is necessary for the application of VR and AR technologies. Of course, in addition to the authentic tourist experience, the intention of an individual to visit a tourist destination presented in VR is also influenced by the commitment of users to such technologies. The technology on which VR is based is mostly used by the younger population.

### **The effect of artificial intelligence on tourism**

Artificial intelligence is often present in our everyday private and business life, ie. it clearly shapes our way of life (Zhang et. al., 2014). The changes that came along with the use of artificial intelligence (AI) are immense: chatbots, robots, autonomous vehicles, etc. (Schütte, 2018). The effect of AI is present in every industry. The tourism industry is no exception. There are various possibilities of AI in tourism – the automated room service, automated dialogue systems that travelers are focused on, applications that personalize the stay of visitors, etc. (Harenchar, 2017). Even a fully automated hotel, operated exclusively by robots, has been established in Japan (Ivanov et. al., 2017). The application of new technologies in tourism is justified, bearing in mind that in our personal lives we use e.g. contactless payments, voice search, and various benefits of smartphones.

In recent years, the tourism industry and marketing have experienced significant changes. In addition, the behavior and needs of people in tourism have been fundamentally changed. A large number of different platforms for searching and booking travel have contributed to the fact that today a significant portion of tourist transactions take place electronically. The changes in the tourism industry have also been influenced by major economic brands such as Uber or Airbnb and major technology companies such as Google.

A large number of travel companies today use so-called chatbots in communication with clients. A chatbot is a software that is developed to accept and respond to simple text or voice messages from clients (Ravi et. al., 2018). Essentially, a chatbot is AI, which makes it possible for the system to access a saved database, compare keywords and react via text output with a predefined answer. Besides the precise answers, chatbots are able to communicate continuously with clients. Their advantage is reflected in the fact that there are no time limits in communication with clients. They

are available 24 hours a day and able to process multiple requests at the same time. By this, the waiting for the travel agency operator to answer the call is circumvented. This also removes the burden on travel agency employees, who can devote themselves to more complex tasks. Messenger chatbots are especially popular today, as customers spend a lot of time on social platforms, such as Facebook. These chatbots give travelers useful tips on destinations, such as important information about airports, weather, transportation, culture, currency, and visa regime. A chatbot also provides information on various municipalities in major cities and attractions and directs users directly to the route on Google Maps.

Apart from automatically conducting communication with clients, chatbots present important storage of information and data. Using this data, travel companies can recognize the necessities and desires of customers, and in the meantime contact the client in person with the appropriate offer. In the tourism sector, chatbots are widely used for hotel and flight booking. The passenger chatbots, which are installed in the car and can describe every place while driving, are very popular lately (Bojano et. al., 2019).

The application of chat rooms is a modern way for travel agencies to differentiate from the competition. With the help of a chatbot, the whole process of booking a trip can be done in one conversation. For example, if a client is planning a vacation in Greece, the chat will first ask about the desired airport of departure, destination, and travel period. Taking this information into account, a chatbot may recommend an appropriate trip to the traveler. If he is satisfied with the offer, and assuming that the chatbot is connected to the reservation system of the travel company, the traveler can easily book his trip through the chat.

The communication of passengers with the travel agency via chatbots is possible not only before, but also during the travel or vacation. So, thanks to chatbots, travelers do not depend on the working hours of the travel company and are able to get an explanation at any time. Human agents are not always available to provide quick customer support neither during the night hours nor during the holiday season. Furthermore, the current COVID 19 pandemic has shown that it is important for travel companies to be constantly available to their clients. Due to global constraints, a large number of flights were canceled, which caused a massive flood of client inquiries to travel agencies. Unlike employees, a chatbot can provide customer support in processing a vast number of queries in a short period of time.

Chatbots enable multiple benefits for travel companies, 24/7 availability, quick response, preserved user history, and consistent user experience are some of the many benefits of chatbots. By helping travelers to find the right information at the right time, they offer customers the option of simple travel reservations without spending much time. Agency staff, on the other hand, can focus on other, more complex tasks.

Another type of AI-based technology used in the tourism industry is robots. The activities for which robots are used are simple, e.g. turning on the lights in the bedroom, turning off the TV, services at the reception, guides and assistants at the airports (Samala et. al., 2020). In the Japanese hotel "Henna", robots have taken almost all tasks over. At the entrance of the hotel, guests are greeted by three robots that do not look like robots at all. Next to an artificial woman, for example, there is a dinosaur, naturally equipped with a hat. The robot will help hotel guests who have checked in with their luggage.

### **Smart tourism**

In accordance with the development of digital technologies, tourists expect that new technical solutions are applied in tourist destinations as well. Bearing this in mind, it is safe to assume that smart tourism will occupy an increasingly important place in tourism marketing (Gidumal, 2020). Smart tourism is a relatively new term that is widely accepted in the tourism industry. The term intelligent tourism is also frequently used, which simplifies the travel-related processes based on digital solutions. The European Smart Tourism Capital Initiative in its Guide defines a smart tourism capital as “a destination facilitating access to tourism and hospitality products, services, spaces and experiences through ICT-based (Information and communications technology) tools. It also implements innovative, intelligent solutions and fosters the development of entrepreneurial businesses and their interconnectedness”.

A key aspect of any smart destination is, therefore, the integration of information and communication technologies into the physical infrastructure (Gretzel et. al., 2015). As a tourist destination becomes smarter, the necessities and requirements of tourists need to be met more efficiently in order to create a better tourist experience. Smart applications and products are implemented through the user experience to suit visitors who want to explore the city. The possible initiatives include 3D virtual maps of the city, LED animations to illuminate cultural institutions, travel

websites with smart apps such as a fountain locator, but also the creation of a free Wi-Fi network available across the city.

The European Union has been leading the tourism initiative for many years, rewarding the outstanding achievements of European cities as smart tourist destinations. To be selected as the winner of the European Smart Tourism Capital, participants must stand out in the following categories: sustainability, accessibility, digitalization, cultural heritage, and creativity. The aim of this EU initiative is to promote smart tourism in the EU, connect and empower destinations and facilitate the exchange of best practices. The latest overall winners are Bordeaux (France, 2022), Valencia (Spain, 2022), Malaga (Spain, 2020), and Gothenburg (Sweden, 2020). There were also multiple winners in the subcategories of different areas of tourism technology.

The Spanish city of Malaga has been named the best destination for smart tourism in Europe in 2020. What is particularly impressive about Malaga's approach to tourism is the goal of improving the quality of life of its inhabitants concurrently with tourism development. In order to be declared smart, the mere application of innovative technologies is not enough for a tourist destination. It is necessary to promote sustainable tourism, i.e. protect the local ecosystem, provide environmentally friendly transport and make an effort to reduce emissions. That was one of the reasons why the Spanish city of Valencia was declared the European capital of smart tourism in 2022. In addition, Valencia is an inclusive city without barriers, but also an innovative city. Tourist information stands and offices in Valencia have been completely digitized. The QR code allows visitors to access all the attractions without the need for paper maps. All guides, maps, and brochures are in digital format so you can download them to your smartphone and take them with you on the road. In tourist offices, tourists have staff at their disposal, not only in the offices but also via WhatsApp and live chat. There are interactive touch screens in the city, where it is possible to get certain information or buy a Valencia tourist card or make another purchase. Additionally, online ordering and purchasing of tourist services are promoted, which contributes to smart and sustainable tourism. An increasing number of technology-savvy travelers are bringing their ICT (information and communication tools) - portable technologies, smartphones, and tablets with them on vacation. This so-called BIOD culture means that travelers want to learn about a certain destination through their devices, explore a place, to find the best restaurants and shops

in the city. As travelers become more familiar with digital technologies, the demand for smart tourism will grow rapidly (Fereidouni, Kawa, 2019).

### **Blockchain - the future of tourism**

One of the most important technologies applied in the field of tourism, among other things, is blockchain technology. Even though the use of blockchain has increased in recent years in many areas, blockchain encounters various obstacles in the application (Crosby et. al., 2016). Blockchain is a secure database used to store data that is completely duplicated on multiple computers. It was developed in 2008 for the digital currency bitcoin and through a permanent chain ensures that transactions between the two participants are reliable, transparent, and secure, without the involvement of an intermediary bank (Grupta, 2017; Nakamoto, 2008). Blockchain entries cannot be subsequently deleted or modified. The main advantage of blockchain is that it cannot be "hacked" unless someone takes control of more than 50% of all computers.

Blockchain technology is „a revolutionary technology that will transform financial transactions in the future and greatly affects the tourism industry“ (Gelter, 2017). Some travel companies already use the blockchain platform in their work, such as TUI Group in Germany (Whyte, 2018). This company has already uploaded its entire hotel contingent to the blockchain and keeps all its contracts on the private blockchain. However, smaller companies can also potentially benefit from a blockchain, for example, if a blockchain is used to evaluate travel companies. Besides, using blockchain would make tracking the origin of food even more trustworthy. The transparency of blockchain payments can help immensely in avoiding credit card fraud since payments are usually non-refundable.

An important application area of blockchain technology in tourism is the possibility to conclude "smart contracts". Since the data in the blockchain cannot be changed, a fixed and transparent contractual platform is created for both parties (eg by the tour operator and the hotel chain or by the corporate client and accommodation). Another potential of the blockchain could be the introduction of loyalty programs among travel companies. Smaller travel companies such as family hotels can use blockchain technology to attract regular guests. With automated, centralized profile creation, problems can be eliminated for both parties - service provider and guest. Using the blockchain, the guest doesn't have to create a new profile for each booking portal, which saves time and eliminates potential

mistakes. On the other hand, travel companies get complete profiles and can respond even more individually to the needs of their guests. Another advantage of the blockchain is that travel companies can automatically process a refund to passengers in the event of flight delays or cancellations.

Blockchain technology has also its drawbacks. Data protection is one of the main concerns in blockchain application. In order to ensure transparency, the transactions have to be visible to the general public, and this meets resistance. Another disadvantage of blockchain is the quality of the data due to the possibility of incorrect data input. However, there is hope that the transparency of blockchain technology will result in improved data quality.

The application of blockchain platforms has the potential to create new services and business models in tourism (Holotiuk et. al., 2017). Blockchain presents a unique opportunity to meet the touristic needs of those who have an interest (Aghaei et. al., 2021). However, the application of blockchain technology in tourism is at its very beginning. There are some general barriers to using blockchain, such as low awareness of blockchain and a lack of experts in the field. Another obstacle is the lack of appropriate legal regulations that would facilitate the implementation of the blockchain in various areas, including tourism.

### **Conclusion**

The tourism industry is one of the oldest industries in the world. People have always loved to travel and explore different places in the world. Whether it's a short trip to a city or a longer trip to another, it's always exciting to discover new parts of the world. In addition to traditional factors that continue to greatly influence tourism, such as products with a geographical origin (Lučić, 2018b), travel companies must keep up with the latest technological advances. The tourism industry actually must find new ways to connect with visitors and customers, and travel companies have to improve the travel of users and make travel more convenient. In this new context, automation of some services is necessary. As in other industries, artificial intelligence and chatbots, which have positioned themselves among the trends of digital marketing in recent years, are a very effective way to solve these challenges and overcome these problems.

Digitalization as a megatrend has generally changed and will continue to change the tourism sector, both the side of providers and the side of users

of tourist services. For the service provider, the diversity of digital information and communication technologies offers not only business expansion but also interactive alternatives to customer service. In addition, digitalization is changing competitive conditions in the market and opening up new strategic options for service providers in tourism. However, the effects of digitalization on the demand for tourism services are equally important. Always connected, mobile, and always better-informed traveler not only consumes and evaluate products and services but also helps to shape and develop consumer behavior in the tourism industry.

Digital technologies have greatly influenced the tourism industry. However, technological development is at the same time a disruptive process that calls into question traditional business models, i.e. the classic conception of the tourist phenomenon. Large companies such as Amazon, Google, or TripAdvisor are trying to establish an information monopoly. In other words, high-tech corporations as holders of various intellectual property rights and some large dominant providers of tourism services, using the digital transformation, threaten to shape a new era of digital colonialism in the tourism sector.

Digitalization and artificial intelligence are advancing rapidly in the tourism sector. However, there are limitations to digital technologies' applicability for individuals who do not have sufficient technical knowledge to apply them. Another major challenge in the use of new digital technologies in tourism is the issue of data privacy and security. The problem with new digital technologies also exists from the aspect of small tourism companies that cannot obtain these technologies, because they require huge investments. These technologies are limited to answering simple questions. To solve complex problems, clients rely on human labor. Despite the advantages of new digital technologies in the tourism sector, it is necessary to conduct research, primarily on the concept of AI and its application in the tourism industry.

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