Key Areas of Digitalization of Business Processes in Tourism

Mikhail M. Morozov
Russian New University
Moscow, Russia
22, Radio Street, Moscow, 105005, Russian Federation
E-mail: m.morozov@bk.ru

Abstract—**The article considers the impact of global digitalization on the tourism business. The key factors affecting the modification of business processes in tourism are identified. It is shown that there are changes in the needs of tourists due to generational change and digitalization. The directions of digitalization of business processes in tourism at various levels of management are analyzed.**

Keywords: tourism, digital technologies, digitalization, business processes

I. INTRODUCTION

For many countries and regions, the tourism sector is an important sector of the national economy and provides a significant contribution to the country's GDP. In 2018, the share of the tourism industry's gross value added in the GDP of the Russian Federation was 3.9%. For many Russian regions, tourism is becoming a driver of economic growth [3]. In connection with global digitalization in tourism, dramatic changes are taking place in all business processes. In September 2019, the "Strategy for the Development of Tourism in the Russian Federation for the period until 2035" was adopted, in which much attention was paid to the introduction of digital technologies in the tourism sector, the development of digital services and digital platforms in tourism.

In addition to the digital revolution, which penetrates into all spheres of activity, the development of the tourism industry is greatly influenced by the change of generations. At present, a new type of travelers is being formed who have different needs from the previous tourist experience. They are associated with the need to provide them with a high-quality digital service, the role of the environmental component of any trip is growing, and the time frame of the trip is changing. The new tourism trajectories are closely interconnected, directly affect the organizational and production business processes in tourism activities and determine the importance and relevance of the study of digitalization in tourism.

II. METHODS AND MATERIALS

During the study, systematic, monographic, and statistical analysis methods were used. Based on them, the main factors influencing the modification of business processes in tourism were analyzed, the directions of their digitalization were studied, and the possibilities of using the latest digital technologies in the tourism sector were examined.

Digitalization affects the entire value chain in tourism and entails a profound transformation of the tourism business. It allows you to optimize the business processes of the tourism industry, increase productivity, and improve information and communication interactions with customers.

The introduction of digital technologies in the tourism sector was highlighted in [2], the use of Big Data technology was studied in the works of Z. Xiang, & D. Fesenmaier [7], the impact of augmented reality on human behavior was considered in [1].

The implementation of digital solutions in the tourism industry economy significantly depends on the degree of readiness of enterprises to introduce new business models using technologies for storing, collecting, searching, processing, transmitting and presenting data in electronic format. In addition, the introduction of digital products in the production processes of the tourism industry enterprises provides for preliminary technical equipment of workplaces, as well as an appropriate level of staff qualification.

III. RESULTS AND DISCUSSION

A key trend in the development of tourism is the departure of major customers to the Internet and the use of mobile applications, which is associated with both the widespread use of Internet technologies and the generational change. [6] This is facilitated by the expansion of Internet access worldwide.

"Fig. 1" shows data on the number of active subscribers of fixed Internet access in Russia.
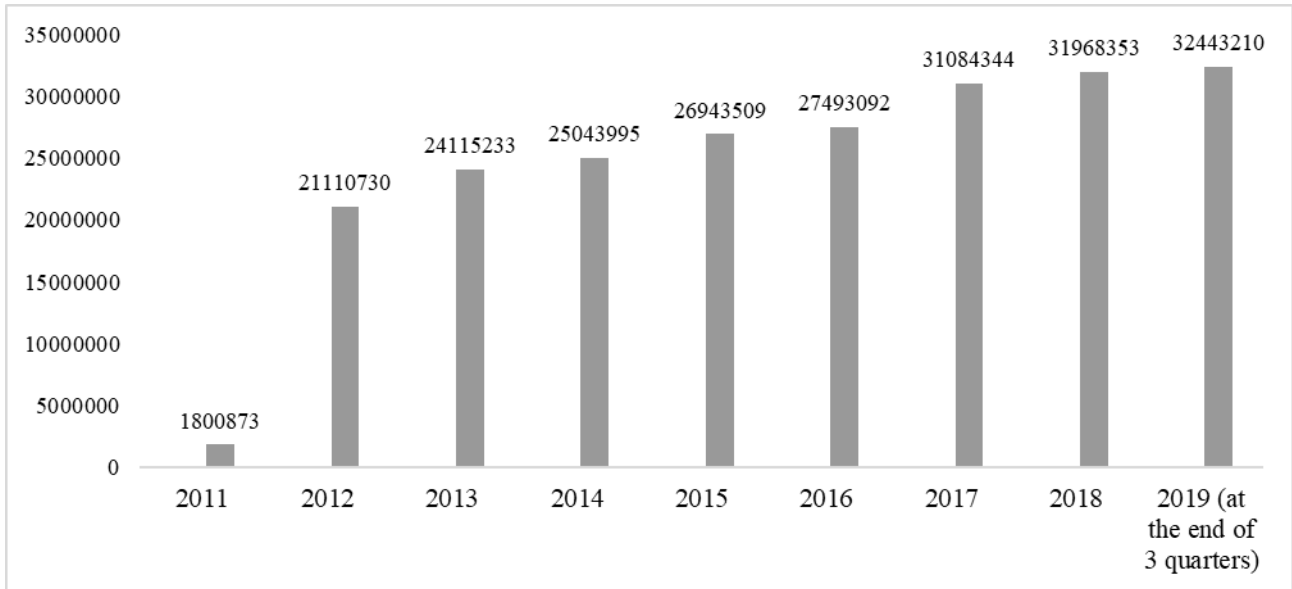
Fig. 1. The number of active subscribers of fixed Internet access in the Russian Federation.

From 2011 to 2019, the number of active subscribers of fixed Internet access increased by 1.8 times, which influenced the behavior of travelers and expanded their ability to use online services in tourism.

In 2018, 85.7% of organizations in the business sector had Internet access, which also expands the range of users of digital services.

Currently, the sale of holiday packages on the Internet is growing by 20%. The main consumers of tourism services are people of generation Y (millennials) and generation Z, for whom modern digital communications are the norm. Already, 50% of requests use mobile search (from a smartphone). The tourist needs of the new generation are changing, therefore, tour operators should personalize their product for the client, and the tour operator's site should be adaptive, be able to accept payments by card and other electronic payment methods. The time from the search to the purchase of a tourist product should be minimized.

Today, many enterprises of the tourism industry use digital technology tools such as e-mail, digital document management, CRM, 1C, IP-Telephony and others. Digital economy technologies make it possible to provide the most personalized interaction that most modern travelers prefer.

The transformation of the interaction of sellers and buyers in the tourism sector affects, among other things, global distribution systems. Today, there is already a promising WindingTree project based on the blockchain platform and ensuring the interaction of all participants in the production process. In the future, this system or the like has a real chance of crowding out the GDS giants from the market. It is worth noting that the software of many GDS is based on relatively old technologies and cannot compete with modern digital platforms, which have undoubted advantages. For example, WindingTree offers a simplified interaction process,

eliminating the need for high commission costs for additional intermediaries, and ensures uninterrupted operation of the system due to functioning based on blockchain technology. This project has already been implemented at Lufthansa Airlines, similar blockchain tools are used at the airport in Dubai (UAE), in the transport system of Japan and South Korea, etc.

It is necessary to highlight the key factors affecting the modification of business processes in tourism:

- global digitalization,

- generational change and the formation of a new type of digital travelers,

- the emergence of economies of a new type of Sharing Economy, the economy of impressions,

- new business technologies, in which the interrelations of market participants are fundamentally changed and maximum withdrawal from intermediaries (Uber) is realized,

- remote access to services (online travel agencies),

- personalization of services of tourism industry enterprises,

- increased influence of travelers themselves on the tourism industry through the publication of reviews, which has a significant impact on the preferences of future tourists.

The new Sharing Economy is fundamentally changing the roles between suppliers and consumers of tourism services, for example, it is fully implemented in the AirBnB system.

Global digitalization is based on the use of platform business models. Digital platforms provide the collection and processing of large flows of information and create a new tourism information environment. They are universal tools that allow various market entities to interact with each other online. On the digital platforms, business processes of such major companies as Amazon, Alibaba, Facebook, Uber and others are built.

Digitalization of tourist and hotel activities widely applies the following technologies:

- big data (Big Data),

- Internet of Things (Internet of Things - IoT and IIoT - Industrial Internet of Things),

- artificial Intelligence,

- augmented reality,

- mobile devices,

- chat bots, etc.

In order to ensure personalization when working with clients, it is necessary to collect and process huge amounts of information, which is possible only when using Big Data technology. This technology allows you to carry out various types of analytical studies and obtain comprehensive information about travelers.

Internet of Things technologies are used in the hotel industry to organize convenient personal space in hotel rooms.

A Booking.com study found that one-third of the world's travel audience is interested in helping artificial intelligence travel planning.

Augmented reality technologies are used as an innovative tool in organizing and conducting tours.

Mobile devices have become an integral attribute of tourists who want to receive travel information at any time. Already, existing mobile applications can provide booking services, provide background information, thereby increasing the competitiveness of tourist destinations [4].

In our opinion, digitalization in tourism and hospitality should be considered at two levels:

- the global tourism system as a whole,

- at the level of individual enterprises in the tourism and hotel industry.

Digitalization at the level of the global tourism system is manifested in the use of new technological platforms on which such reservation systems of services as Booking, AirBnB, Uber and others are built. It should be noted that recently, when organizing a trip, the time from the moment of booking an accommodation device to the start of the trip is reduced. Amateur tourists can book tickets, accommodation a few days before the trip or even during the trip. Such a change in travel arrangements requires the use of

new digital technologies. Digital platforms like Ethereum and Hyperledger Fabric are used for FlightChain flight storage. The Winding Tree digital platform brings buyers and sellers together on a single platform with smart contracts. The TravelChain blockchain platform is designed to collect and process large amounts of information about tourists, while using artificial intelligence technology allows for personalized customer service based on the processing of information about them.

In the transition to a digital economy, all business processes of tourism industry enterprises will fundamentally change, which is associated with the digitalization of employees, accelerating digital transactions and increasing the responsibility of employees for their actions. Moreover, special importance should be given to the coordination of all business processes.

Currently, most of the business processes for the formation of a tourist product can be performed using digital technologies:

- sale of airline tickets (SkyScanner, etc.),

- reservation of accommodation facilities (Booking.com, Agoda, etc.),

- registration of insurance (Tripinsurance, etc.),

- transfer services (GetTransfer.com, etc.).

The emergence of a new type of so-called digital tourists requires the modernization of the tourism information environment, which is becoming an essential component of modern tourism. Moreover, the level of development of information and communication technologies directly affects all aspects of the organization of the tourism business. Digitalization leads to the emergence of virtual travels, online travel companies, spatially distributed network of tour operator structures, etc.

The transition of tourist and hotel enterprises to digital technology involves:

- development of transmission channels and storage of large volumes of information,

- widespread use of the Internet in all business processes,

- Integration of digital technologies at the level of all business processes of the tourism industry enterprises,

- ensuring information security of the tourism industry enterprises,

- continuous development of the staff of the tourism industry company and increasing the level of digital competencies [5].

Digitalization at the level of individual enterprises in the tourism and hospitality industry is expressed in the digitalization of business process. All business processes can be divided into the following types:

- managers who provide the management of enterprises in the tourism and hotel industry as a whole, this includes business processes of strategic and current planning, marketing, administration at the enterprise level,

- operational, which include business processes that ensure the ongoing activities of the tourism and hospitality industry, including booking applications, creating a tourism product, receiving and registering guests, etc.,

- providing, which include business processes related to the control of financial and economic activities, technological processes, etc.

Digitalization is changing the way companies interact with customers. This process allows companies to receive information about their customers and develop offers that are ideal for a particular tourist in terms of quality, price, service and delivery method. This is achieved through the massive use of smartphones and applications for them.

The digitalization of the business processes of tourism and hospitality industry enterprises should be based on the following principles:

- ensure full functionality and consistency - all business processes of a tourist company and a hotel company should be automated and informationally interconnected within a single information and communication system,

- provide efficiency and high productivity in all business processes;

- have flexibility and openness of architecture, provide the opportunity to expand the tourism industry,

- to be scalable - to function effectively with any amount of processed information,

- provide reliability and security of storage, processing and transmission of large volumes of information,

- provide diagnostics and protection against unauthorized access,

- to provide adaptation and adjustment of parameters taking into account the characteristics of a particular enterprise of the tourist or hotel industry,

- provide statistical and analytical processing of large volumes of information for strategic decisions, which is especially important in conditions of high competition in the market.

The main business processes of the enterprise of the tourist and hotel industry include marketing analysis of the market, development of a tourist and hotel product, promotion of a tourist product, excursion service, etc.

A new paradigm for the development of tourism and hospitality involves the creation of a digital infrastructure [6].

In order to increase the competitiveness of tourism enterprises and the convenience of customers, it is advisable to create your own mobile applications. The current generation of people is actively using wearable mobile devices and it is more convenient for potential customers to immediately go into the application and see the list of tourist products offered by the travel company, the form of an electronic contract, and other background information. The application can provide for various methods of payment and prepayment of a tourist product, because it will be much more convenient for customers to make payments through the mobile application.

In a mobile application, it is advisable to provide search filters by cost, duration and directions, to make it possible to compare two tours. You can also make work accounts for company managers, where the application will interact with the CRM system. The manager can even perform some functions from a smartphone, for example, communication with tourists, solving problems on a tour, etc. It is advisable to introduce an intelligent chatbot into the mobile application and website of a tourist enterprise. Chatbot will allow you to quickly select a tour for a client, without wasting time managers, will help to fill out an application for booking a tour, and make a call back to the client.

IV. Conclusion

Digital technologies allow us to improve such business processes in the organization as interaction with suppliers, storage and transmission of information, document management, security and identification, and others. Digitalization of business processes in tourism directly depends on the availability of professional digital competencies of employees of a tourism enterprise. Currently, in all areas of economic activity, there is an increased need for personnel professionally owning digital competencies. This fully applies to the tourism sector. In these conditions, tourism industry enterprises must invest in personnel, thereby providing opportunities for digitalization of business processes.

References

[1] A Javornik (2016) Augmented reality: research agenda for studying the impact of its media characteristics on consumer behavior. J Retail Consum Serv 30:252–261. https://doi.org/10.1016/j.jretconser.2016.02.004

[2] D. Dredge, G. Phi, R. Mahadevan, E. Meehan, & E.S. Popescu (2018) Digitalisation in Tourism: In-depth analysis of challenges and opportunities. Low Value procedure GRO-SME-17-C-091-A for Executive Agency for Small and Medium-sized Enterprises (EASME) Virtual Tourism Observatory. Aalborg University, Copenhagen.

[3] M. A. Morozov and N. S. Morozova, Tourism development of Russian territories competitiveness, effectiveness and sustainability. Journal of Environmental Management and Tourism, 2017. T. 8.№4(20), pp. 875-881.

[4] M. A. Morozov and N. S. Morozova, Attractive Tourist Destinations as a Factor of its Development. Journal of Environmental Management and Tourism, (Volume VII, Springr, 2016), 1(13), pp. 105-112.

[5] M. A. Morozov and N. S. Morozova, Innovative Staff Training Strategies for the Tourism and Hospitality Industry. Proceedings of the 5th International Conference on Economics, Management, Law and Education (EMLE 2019) Advances in Economics, Business and Management Research, volume 110, pp.393-396

[6] M. A. Morozov and N. S. Morozova, A new paradigm for the development of tourism and the hospitality industry in the digital economy, Bulletin of the Russian New University. Series: Man and Society. – 2018, №1, – pp. 135-141.

[7] Z. Xiang, & D. Fesenmaier, (2017) Big data analytics, tourism design and smart tourism. In Analytics in Smart Tourism Design: Concepts and Methods. Cham: Springer, pp.299-307.