Digital technologies in the organization and management of tourist organizations

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Abstract — **The article presents the results of the features and specifics of the development and use of the latest digital technologies in the activities of tourist organizations studies in the Russian Federation. The role and impact of digitalization and expansion of digital space on the results of tourism activities, the effectiveness of the interaction of participants in the tourism market organizing and, in general, the development of tourism entrepreneurship have been described. The events that gave impetus to the development of innovative digital technologies aimed at improving business models and processes, effective organization of communications, and optimization of the activities of tourism organizations have been identified and characterized. The main trends and goals of digital transformations created by organizations in the modern tourism market are identified. It is revealed that the result of digital transformations was the transition to the use of innovative reservation systems operating on new approaches to the generation, processing, transmission and updating of data.**

Keywords — tourism, market, technology, improvement, digitalization, transformation.

I. INTRODUCTION

The expansion of the Russian tourism market, which we have witnessed since the beginning of the millennium, has led to the intensive development of entrepreneurship and tourism technologies, which have continuously become more complex and have gone from informatization to more complex digital realizations and transformations. At present, it can be stated that the tourist business has almost completely gone into the digital space. Initially (until 2005–2007), the exchange of information between participants in market relations was carried out on paper. Tour operator organizations traditionally distributed catalogs containing information about the tourist products they had formed, which mainly contained information about their composition, characteristics and cost. High competition and expansion of the tourism market led to the dynamism of prices for services that are part of the tourist product. There was a need to develop effective tools for operational tracking and exchanging information when searching for and booking tourist products, when organizing communications. By the mid-2000s, the competitive

advantages of direct sales were exhausted, and information-retrieval systems for online booking of tourist products that operate on the websites of tour operators began to replace archaic and inefficient (paper, fax, etc.) information exchange technologies. From this point, the era of digital transformations has intensified in tourism, the main goal of which has been the improvement of business models and processes, the effective organization of communications in the tourism market. Despite the importance of digital transformations, only some of its aspects are reflected in the scientific literature [1-2, 4-6]. Researchers traditionally consider the problems of data mining and automation of marketing analytics [7], the impact of e-tourism on consumers [8], the effectiveness of information technologies [9] and the use of e-commerce as a means of competitiveness of tourism organizations [10], customer relationship management [11] etc.

However, due to intensive market changes, digital technologies are constantly being improved and adapted to new conditions, their space is expanding. At the same time, aspects and specifics of significant transformations of the newest digital space, created primarily by tourist organizations in the scientific literature, have not been characterized. In order to effectively manage the development of entrepreneurial activities in the tourism market, it is important to explore innovative digital transformation tools and their cumulative impact on the performance of tourism organizations.

II. METHODOLOGY (METHODS) OF RESEARCH

The article presents the results of a study on the choice and use of advanced digital technologies for managing tourist activities based on a comparative analysis of official information presented on the websites of tourist communities (BANKO Information Service, Turdom professional tourist portal, etc.), websites of developers of specialized software products (Samo-Soft, Megatek, etc.); to identify the capabilities of digital tools presented on the official websites of tourist organizations (Pac Group, Russian Express, Pegas turistik, ICS, OTI group, etc.), tour aggregators (Sletat.ru, Tury.ru, etc.). The authors used their own experience in

organizing and implementing tourist activities for more than a decade period acquired through the development of constantly updated digital technologies, the new versions and the scope that each time demonstrated their advantages. The authors relied on the synergy of practice and system-structural analysis of digital transformations in the tourism market, the study of processes and complex relationships, highlighting the most important features, qualities and properties.

III. RESULTS OF THE RESEARCH

Modern information and communication technologies used in tourism activities, allow in real time to book on the websites of tourist organizations or specialized aggregators tourist services or a complex tourist product, and pay for them. These opportunities are provided by the expansion of the digital space in the field of tourism, which today provides the tools necessary for the effective functioning of the tourism industry. Initially, information technologies that allow the promotion and implementation of a tourist product were developed, implemented and used by tour operators to simplify and accelerate interactions with agent networks and consumers of tourist services. They allowed agents to manage orders using personal accounts: to book a tour product, determine the status of the order (in work, refusal, confirmed) and confirm it, issue and print out an invoice for the payment of the order, send a request for cancellation of the booked tour, correspond with the curator, etc. Search, booking and monitoring of applications has completely moved from paper to digital space. However, a number of important organizational processes remained outside the digitalization zone and required the exchange of information on paper, for example, issuing visas, calculating actual costs incurred in case of cancellation (change) of an order, etc.

The digitization of the tourism industry was not only about marketing objectives, but was also aimed at automating tourism activities and efficiently organizing communications. Tour operator organizations quite effectively made the processes of booking tourist products automated. Upon receipt of an application to the tour operator's website, the system automatically "sat" tourists on block tickets and sent requests for booking the services of the chosen accommodation. A functional appeared in the agents' personal accounts that allows to fill out visa application forms in real time in different areas of tourism, thereby the workflow was significantly simplified. It is enough for the agent to add the necessary information to the relevant sections, to include the loading of digital photographs, which were then transferred to the authorized person to obtain an entry visa. In the shadow of digitalization, only non-standard processes remained because of the nature of their heterogeneity, for example, the provision of documents for insured events under the "Off-departure" programs.

An important task of the digital technology development has become the improvement of package tour reservation systems. Tour operators have switched to using the newest booking systems for individual tours integrated with global distribution systems (GDS) [12], respectively, the functionality of agent personal accounts has expanded. At the turn of 2015-2016, the tourist market was shocked by the collapse of Transaero Airlines [13]. The airline was the leader of the airline market in terms of price-quality ratio and was the most demanded by Russian tour operators and tourists. Its bankruptcy at the end of 2015 triggered a crisis in the tourism market. Tour operators who actively cooperated with the airline were not immediately able to find a replacement for it. The emerging problem has become a driver for ensuring a wider integration of reservation systems of tour operators organizations with GDS. The implementation of relevant digital technologies took about 1,5 years. As a result of improved booking technologies, travel agents and tourists have the opportunity to independently include air travel not only on charter flights, but also on regular flights, and the process of recalculating the tour price at the current price of the air ticket fare has become automated. Users got the ability to independently choose both the carrier and the accommodation facility. These important achievements became possible thanks to new digital solutions and technologies that contributed to a more complete satisfaction of the needs of experienced tourist services consumers who prefer to independently assemble a tourist product. In order to increase the competitiveness tour operators began to actively use the tools of dynamic packaging of tours [14, 15].

High competition between the players of the tourism market has contributed to the further expansion of the digital space. Tour operators, in spite of the developed agency network, have preoccupied themselves with the formation of their own channels for the promotion of tourist services - electronic B2C platforms intended for online sale of tourist products directly to consumers, bypassing intermediaries. In order to expand the client base, innovative booking systems were used - individual tour designers, who competed with popular specialized aggregators: Bookig.com, Islet, Trivago and others - in the field of hospitality, Aviasales, SkyScanner, Ozone Travel and others - in the field of air transportation. Tour designers allowed consumers to collect a tourist product from services offered by global distribution systems, with the best prices and parameters that best fit the individual preferences of users. As a rule, the cost of a package formed in this way turned out to be less than the total cost of its component parts when booking at the sites of specialized aggregators, that is, it was more competitive.

Statistics from a survey conducted by Travelport indicate that 51% of holidaymakers still prefer to purchase a tourist product from companies specializing in the relevant type of activity, regardless of the usability of their digital platform. However, forecasts indicate that global trends in the digitization of the tourism industry will soon lead to global changes in the tourism market — online sales will grow in two planes: independent compilation of the tour through the purchase of separate tickets and hotels on the Internet, as well as the purchase of online trips from tour operators [16].

Currently, there is a great interest in the tourism market for using platforms that provide various online services. For example, in the airline industry, many airlines sell tickets for their own flights or flights carried out under code-sharing agreements, while many aggregators operate in parallel, the purpose of which is to provide the consumer with the most convenient means for searching and booking flights. However, work in these systems is sometimes difficult and incomprehensible to consumers. When ordering the chosen option of the flight, the resource can redirect the consumer to the airline's website or a third-party aggregator, where it will be necessary to re-update the cost of the offer or make an additional transition to the source of the price that requires clarification. Similar problems are associated with low operational efficiency and speed of tariff update.

A similar situation can be traced when working in the reservation systems of tour operators and tour aggregators, when the latter do not have time to re-submit the updated prices for tourist products. At the same time, some tour aggregators, while expanding their activities, are trying to cover the maximum number of areas of the tourism market. Thus, the company Sletat.ru, initially launching an Internet resource that allows you to find the most competitive offers of leading tour operators in the "single window", transformed its activity over time, taking into account the trends in the development of digital space and the tourism market itself. The company offered its partner agents to place search and booking modules on their websites without reference to the search engine brand, and later work under the brand Sletat.ru, creating their own agent network.

Modern digital space is used by tourist organizations to the maximum. Large travel agencies have adapted their Internet resources to display correctly on mobile devices, which are increasingly used by consumers for booking travel services, exchanging data and paying for the booked travel product. In addition, tour operator organizations and leading aggregators have developed and launched a number of applications that increase the usability of working with their resources on mobile devices. Tour operators continue to work on creating and presenting multifunctional digital platforms on their websites, which allow not only to book package tourist products, but also individual ones, which take into account customer preferences as much as possible, expanding the range of package offers by adding individual services. In addition to increasing the functionality and level of automation, tour operators organizations have attended to increasing the usability of their sites. If earlier the sites of tour operators, as a rule, represented standard solutions, now resources have a corporate identity and an intuitively clear interface for the visitor, which characterizes platforms operating in the B2C segment. At the same time, in the B2B segment, not everything is unambiguous - travel agents who have been used to working with standard booking systems and to a simple, well-structured information exchange system for years now often remain dissatisfied with the shift of emphasis towards usability for customers and the loss of convenient navigation for the travel agent . This problem is observed when sections for consumers and agents are not demarcated on the tour operator's website - communications are built on the principle of a "single window".

IV. DISCUSSION OF RESULTS

Analysis of the development of digital technologies in tourism as compared to traditional ones revealed that their use significantly simplified and optimized the main business processes in the activities of tourism organizations, improved communications with consumers of tourism services and reached a new technological level, increasing their competitiveness. The tour operators' organizations and the developers of specialized information systems, who jointly go to the intended result - to increase the efficiency of tourist activities, have initiated the improvement of digital technologies in the tourism market. Modern digital technologies and systems used in the activities of tourist organizations independently solve a wide range of diverse tasks that tour operators, travel agents and consumers set for them. And today, their intelligence is essentially the coordinator of market relations.

At the same time, a comprehensive digital transformation is endangering the classic travel agent business and travel agents today have a choice: to work with a consumer in offline space or in the online travel store format is essentially a tour aggregator. In any case, it is necessary to master the advanced technologies of digitalization, corresponding to the trend of their development in the tour operator sector.

V. CONCLUSIONS (INFERENCE)

The development of digital technologies and the expansion of digital space, on the one hand, is a timely and adequate response to intensive market changes, and on the other hand, breakthrough actions of major players in the tourism market in business development and in the struggle for consumers of tourism services. The optimal consideration of these criteria allows organizations not only to ensure a stable position in the market, but also to determine the direction of the gradient development of the tourist business. The main direction of improving the activities of tourist organizations was the transition to online, integration with global systems and sales channels. This allows them to minimize dependence on the conditions of suppliers due to the expansion of the range of services sold. New digital solutions allow to expand the coverage of the market and attract a segment of tourists who prefer to use the sites of aggregators to search for individual tours. Digital technologies have become an essential tool for managing the activities of tourist organizations and ensuring high quality of provision, ease of receiving and processing information, and advanced technological solutions allow organizations to become more competitive. New digital solutions allow expanding the market coverage and attracting a segment of tourists who prefer to use aggregator sites for searching individual tours.

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