

Problems of transformation in the tourism industry in the digital economy

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Abstract. The article is devoted to researching of current conditions of the tourism industry from consumers behavior position. In this work, the consumer is considered a legitimate participant in the creation of a tourist product. The aim of the work is to identify the impact of digital technology on the transformation of the decision-making process by tourists. The tasks are to assess the state of the digital tourism infrastructure, classify the available services to identify unfilled niches; to find out the attitude of consumers to various kinds of travel applications and their place in travel planning. The empirical basis of the work has been the research data by Google, PayPal, Booking.com which allowed to analyze tourists' behavior in the Internet and to identify the main travel trends for 2019. For achieve the research aim, authors applied an online survey of 100 consumers aged 18-35 too. As a result, the main directions of tourism transformation in the digital economy were determine and classification of applications in the category of "travel" were created.

Key words: Sustainable development, consumer behavior, tourism industry, digital economy, travel applications, tourism transformation

1 Introduction

The development of domestic and inbound tourism is one of the promising areas of import substitution. The federal target program defined development targets taking into account global trends and existing problems of tourism infrastructure.

The World Tourism and Travel Council (WTTC), in its annual report, provided a qualitative assessment of the impact of tourism on the global economy and employment in 185 countries and 25 regions. The study shows that this sector accounted for 10.4% of global GDP and 319 million jobs, or 10% of total employment in 2018. Most of the expenses of travelers accounted for the leisure market that is 78.5% of the total expenses compared with 21.5% of business expenses. The tourism sector accounted for 6.5% of total world exports and 27.2% of total world exports of services [1].

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According to various estimates in 2018 the volume of the Russian domestic tourism market in 2018 increased by 8-10% and reached about 900 billion rubles, more than 43 million Russians traveled outside their region of residence, that is 13 million more than in 2017. A similar trend is expected in 2019.

According to the Association of Tour Operators of Russia (ATOR), in 2018 there was an increase in the number of foreign tourists by 20% compared to 2017. The outbound tourism market significantly reduced its growth rate in 2018. The outbound tourism market finished the year of 2018 with a humble (compared to growth rates of 2017) growth in the number of tourists. At year-end 2018, the outbound tourist flow grew only by 6.1% (in 2017 – by 35.9%) [2].

The presented facts indicate the need for the development of domestic tourism infrastructure in Russia. According to the ATOR Analytical Service [3], the most promising areas are real-time dynamic packaging systems, new booking services for the b2b sphere, as well as online services for direct sales of travel packages and individual services to tourists on the Internet, including the possibility of self-designing a tour.

In our opinion ATOR's view is fully consistent with the digitalization of business and takes into account the changing distribution of tourist flows in favor of unorganized tourism.

According to the information portal Turazbuka [4] every third Russian organized leisure on his own (29%) in 2018. Young Russians aged 18 to 34 years old (35-39 %), plan trips on their own more often than others. According to various estimates, the share of unorganized tourists in the total inbound flow is 70-90%. The development of digital technology is significantly changing the process of planning and implementing of travel. The consumer becomes a full participant of the creation of a tourism product.

The purpose of the work is to identify the impact of digital technology on the transformation of the marketing environment of the tourism industry. In the environment of the tourism industry consumers and competitors (travel applications as the goods-substitutes) are present which the subject of study. The tasks are to assess the state of the digital tourism infrastructure, classify the available services to identify unfilled niches; to find out the attitude of consumers to various kinds of travel applications and their place in travel planning.

Considering the object of study, the authors took into account the classification of tourism depending on the method of organization into organized and unorganized ones. Organized tourism involves a pre-designed travel program and a travel organized by a company for tourist/tourists according to their wishes and budget. A travel company books and pays for all tourist services along the route, prepares all the necessary travel documents. Most of the work of researchers focuses on the features and development paths of organized tourism. However, the advent of digital services and travel applications significantly changes the ecosystem of the tourism business.

Unorganized tourism suggests that tourists organize their trip themselves without the participation and / or mediation of a travel agency. They independently develop a travel route, determine objects for excursion visits, plan overnight stays, do travel documents, etc. It is this category of tourists that remains beyond attention when analyzing the requirements for the digital transformation of tourist services.

There are few studies of unorganized (independent) tourism. Theorists and practitioners (association of travel agencies, individual tour operators) focus on the estimates of volume of unorganized tourism [5, 6]. The estimation of volumes is important for the tourism industry, as it characterizes the additional load on tourism facilities [7-9]. Strategies of interaction with clients under broad digitalization conditions are of interest [10, 11], especially with customers-representatives of generations X and Y [12]. The factor of digitalization has a close connection with the problem of sustainable development, as it

provides optimization of resource consumption [13, 14]. S. Bozhuk and N. Pletneva observed current conditions of ecotourism in Russia, opportunities and threats for implementation of ecostrategies in tourism enterprises practice [15]. Under broad digitalization conditions specialists pay attention to the problems of service and staff training in the hospitality industry [16, 17]. However, many factors of consumer behavior remain outside the scope of research. It impedes the development of the industry.

2 Data and methods

The empirical sources of the study were reports and analytical articles characterizing the state of the tourism industry, as well as consumer reviews and the results of marketing research.

An important direction in the study of unorganized tourism is the development of digital technologies for collecting and processing data on the actions of Internet users [18]. While tour operators underestimate the segment of unorganized tourists, Internet companies are actively developing their service. The work analyzes data from the researches by Google, PayPal, Booking.com [19, 20].

In 2017 Google conducted a study of the needs and actions of Internet users in the field of vacation planning.

Booking.com analyzed over 163 million guest reviews and conducted a survey among 21,500 travelers from 29 countries to identify the main travel trends for 2019.

The payment service PayPal and the Russian research agency Data Insight investigate the habits of Russians with online payment, including travel services, on a sample of 4,000 people. The results indicate that more than half of tourists from the Russian Federation prefer to book and pay for trips via the Internet. In Moscow the share of online travel services purchases has grown to 61%.

Studying the characteristics of digital travel services, the authors applied an online survey of 100 consumers aged 18-35. Respondents were asked about the used travel applications, the desired benefits and the degree of customer satisfaction with an available service. The indicators of trust, willingness to pay for content and the search for new applications were considered as indicators of satisfaction.

The travel applications were evaluated as a weighted average. Every estimation is counting with the equation:

$$O_i = \frac{5*n_{5i}+4*n_{4i}+3*n_{3i}+2*n_{2i}+1*n_{1i}}{n_{5i}+n_{4i}+n_{3i}+n_{2i}+n_{1i}}, \quad (1)$$

where O_i – the rating of the i -th travel application.

n_{5i} – the number of respondents who gave the travel application 5 out of 5 points;

n_{4i} – the number of respondents who gave the travel application 4 out of 5 points;

n_{3i} – the number of respondents who gave the travel application 3 out of 5 points;

n_{2i} – the number of respondents who gave the travel application 2 out of 5 points;

n_{1i} – the number of respondents who gave the travel application 1 out of 5 points.

3 Results

The awareness of barriers to restructuring the decision-making process by tourists depends on the vector of consideration of the phenomenon of tourism. An analysis of various points of view made it possible to identify three vectors that differ in key elements and in the scope of the phenomenon. The general structure is presented in Table 1.

Table 1. The main directions of tourism transformation in the digital economy

Vector of tourism consideration	The main function of digital technology	Digital technologies aimed at meeting needs / improving the quality of service
Short-term movement of people with different goals	It is associated with methods and tools for informing about tourist resources and infrastructure, the formation of the need for new experiences	Sites, blogs, groups in social networks, online advertising
Complex social environmental and economic system	Improving the comfort and attractiveness of recreational activities Safety and environmental monitoring of the tourist center	Online business registration systems, online banking, digital systems for controlling payments and tax deductions, scanners for screening, video surveillance systems and patency accounting, baggage tracking, visa processing, including electronic ones
Economic sector	It is associated with the purchase of goods and services to meet the recreational and other needs of a consumer.	Online shops and mobile applications of travel business organizations for online purchase / booking of excursions and special equipment, accommodation, tickets for long-distance transport, booking a table, taxi, car rental, etc.
Product	Planning a unique experience, forecasting needs based on analysis of prior experience	A multifunctional approach to design of traveler's experience, VR and AR technologies, online translators, experience accumulation services

Source: Own processing.

The consideration of tourism as a short-term movement of people outside their permanent place of residence for various purposes focuses on types of tourism. Depending on the purpose of the movement (health, cognitive, professional, business, sports, religious, educational ones and etc.), a tourist needs to get information about the relevant objects in the tourist center. The focus of attention with this approach is focused on communication in order to influence the choice of the place of visit. Digital technologies in this area have significant advantages. In this case marketing promotion tools are used for territories, cities, individual places and attractions, events and events, as well as other objects that meet the purpose of visiting (medical, educational, business ones and etc.). Currently, such technologies are actively used by both tour operators and consumers themselves. The main purpose is to increase awareness of the tourist and recreational value of objects, the formation of interest and desire to visit a promoted object. According to the NAFI Analytical Center [7], 97% of online shoppers choose a place to visit on the Internet. Travel goals of online shoppers are mainly related to recreational activities. For domestic tourism, a seaside vacation was chosen by 19% of online shoppers; 17% chose visiting attractions;

15% chose trips to nature, for sports. Business travel in Russia was carried out by 17% of online shoppers.

For outbound tourism to non-CIS countries, the leading purpose of travel is also sea vacations (18%); 13% of online shoppers chose sightseeing; 3% chose trips to nature, for sports, Business trips to non-CIS countries were chosen by 5%.

Sources of information about travel destinations are diverse. According to Google, 39% of Russian Internet users study online reviews, 21% study video reviews, 18% study YouTube, 15% use opinions on social networks, 11% use opinions on forums. Thus, we can conclude that the Internet generates travel expectations and creates motivation for visiting places.

The second direction of the study of tourism as a complex social ecological and economic system determines the focus on the stages and patterns of development of tourism infrastructure. The geographical component, tourist flows, and tourism industry enterprises are considered as the elements of the system. In its development the system goes through three stages (formation, maturity and degradation), which are characterized by different conditions and resources for the formation of a common and special infrastructure, the emergence and specialization of enterprises serving tourists. The digital economy accelerates the processes of formation and development of a business by digitalizing the registration of enterprises, the interaction of individual entities, conducting transactions and mutual settlements, etc. Digitalization provides the necessary level of control over the reliability of the functioning of natural and cultural complexes, technical systems, and statistically estimates the volume of specific tourist flows. At the time of preparing the publication, an experiment with a free electronic visa for citizens of 53 countries began in Russia. The experiment involved the Kaliningrad region, the regions of the Far East, St. Petersburg and the Leningrad region.

The third vector of research on tourism as a sector of the economy determines the use of digital technologies for the sale and purchase of services for moving, accommodation, meals, etc. Most organizations serving the tourism sector currently have sites with the function of booking and buying tickets and mobile applications. Digital technologies allow online travel agencies (online travel agencies) to interact with potential customers on the selection, payment and support of the tour completely online. The desire to expand sales through online consumers has led to the creation of online services owned by transport companies (for example, Aeroflot, Russian Railways), hotels and other tourist infrastructure organizations.

However, the tourism industry is saturated with various Internet and mobile applications that act as a metasearch engine or accumulate reviews and other useful information and are not directly related to the production of services. Having collected the results, the metasearch engine gives them in a convenient form for perception (taking into account the client's filters), which facilitate the search and planning of the tour. Having gained popularity, information portals often also begin to monetize their reputation by adding the functionality of a metasearch engine. Table 2 presents the classification and general characteristics of travel applications.

The classification of applications is given by the authors in terms of their specialization for the provision of tourist package services:

- a means of transportation to a place of rest (purchase of tickets for trunk transportation),
- accommodation (reservation of housing),
- a place of rest (selection of attractions and excursions, buying tickets to museums, theaters, stadiums, etc.),
- moving within the place of rest (maps, navigators, local public transport schemes, buying tickets for public transport, ordering a taxi, renting a car),

- catering (location of shops and catering points, booking a table in a restaurant).

Classification allows you to adequately assess the field of competition of travel applications and monitor changes in competitors' strategies. For example, Google consistently combines its travel services in maps and becomes a competitor to Booking. Competition is escalating, this means a dominant approach to tourism as a product. The data in Table 2 shows examples of an integrated approach to reviewing the product and meeting the needs of travelers. In this case, an adequate proposal to meet the need is the integration of all-in-one services. This trend is confirmed by a historical analysis of the functioning and diversification of applications and Internet services provided by the largest players in the online travel market. For example, Booking.com started as an online hotel reservation site, currently the service offers alternative accommodation reservations, travel guides and preferential conditions for buying tickets to museums, transfers from main lines to a place of accommodation and car rental services.

Table 2. Classification of applications in the category of "travel"

Type of service	Examples	Rating	Main functions
Buying tickets to a vacation spot	Aviasales	4.7	the first meta-search engine in Runet with setting filters and sorting options, a calendar and a price map, saving favorites and search history
	OneTwoTrip	4.7	Meta search engine for tickets from 800 airlines, railway tickets, tickets for intercity buses, booking 2,000,000, car rental in 174 countries, filter settings
	Skyscanner	4.6	Search for cheap flights, hotels and car rental, sorting search results, price notification
	Kayak	4.5	search for airline tickets, hotels and cars, but also the ability to connect all this in a visual planner, forecasting ticket prices, travel planner, notification of flight status, time for inspection at the airport, terminal layouts
	Hopper	4.5	search for airline tickets, filters, price tracker
	Momondo	4.3	meta-search engine for flights, hotels and car rental, price calendar, filters, sorting options, saving favorites and search history
Buying a stay	Booking	4.7	online hotel reservations worldwide, online travel guides, transfer bookings and car rent
	Ostrovok	4.5	Russian metasearch engine for booking hotels online, with filters, offline mode, omnichannel mobile application, partner of Aeroflot and Pobeda airlines
	Airbnb	4.5	online site for renting and renting private housing
	Hotel Tonight	4.4	last minute reservations with big discounts for a maximum of a week in advance and up to 5 nights
	Hostelworld	4.4	hostel reservation service worldwide
Organization of leisure, choice of excursions and entertainment	izi.TRAVEL	4.5	an audio guide, allows you to download all the necessary routes and select the most interesting sights. There is paid content
	Tripadvisor	4.4	guide to attractions and entertainment, restaurants and hotels
	World Travel Guide by Triposo	4.4	guide in English about attractions, restaurants, hotels and various leisure options, personalizes the choice, there is paid content, advertising, online shopping
	Redigo	4.2	general information about the country (visa, time zone, currency, language, how to get there, etc.), offline maps with the sights of the city, photo gallery, phrasebook, schedule of current events
Moving within a vacation spot,	Offline maps Maps.me	4.5	shows attractions, shops, hotels and other objects; routes, current location, does not allow saving routes, there is

searching for places (restaurants, shops, etc.)			paid content
	Citymapper	4.5	builds multimodal routes taking into account the schedule of all types of transport (metro, buses, trams, trolleybuses, electric trains, bike rental, taxi / Uber)
	Google Maps	4.3	220 countries and regions, as well as hundreds of millions of different places and companies, GPS navigation, traffic data, public transport routes, search for nearby restaurants, bars and attractions
	City Maps 2GO	4.3	search by address, location, menu in English and paid content, does not get directions
	Yandex maps	4.2	search for places, GPS navigation, traffic data, public transport routes, by car or on foot, search for nearby restaurants, bars and attractions

Source: Own processing.

Functions of existing services, the emergence of new integrated services when the application contains training and entertainment elements. For example, using the augmented reality technology, the Momondo metasearch engine helps you determine the size of your hand luggage and its suitability for your carrier. Ozone Travel and AVIASALES practice humorous comments to smooth out delays in finding the right options and keep the consumer waiting for the result. The learning function has prospects for expansion, since the ability to share knowledge causes a positive attitude among independent travelers. Training of independent travelers also offer travel planning and gathering services, searching for opportunities to communicate with local residents, translators. Travel applications stimulate the creation of as many varied and enjoyable memories as possible and offer to share them with other travelers.

4 Discussion

Consumers of travel applications already have experience in interacting with different applications and their requirements become the basis for improving the functions of travel applications. Various ratings by consumer ratings signal the popularity of the application, but do not allow us to understand which properties are most valuable to consumers. At the same time, the saturation of the virtual market with travel applications forces us to differentiate our offer in order to avoid direct rivalry or surpass competitors.

An online survey conducted by the authors shows that consumers are actively using applications, while they are searching for new, more convenient or profitable options, based on the advice of the immediate environment and reviews on the Internet. The desired benefits when considering travel applications are free and useful content, an intuitive interface. The possibility of booking and paying online is considered by consumers as a standard of service. As a bonus, audio guides are considered; special places popular with locals; events and activities nearby.

More than a third of consumers read reviews of online applications. These data do not contradict the results of Google, where the Internet also acts as the main source of information. The popularity of other sources is estimated not so unambiguously. However, the results of the online survey provide grounds for hypotheses regarding the formation of loyalty of travel service users.

Adherents of one application use the service for 1.5-2 years. They do not want to change the service because they are used to it, its interface and method of use, they are not ready to spend time retraining in other services. They show interest in advertising places of visit in traditional media to the same extent as in online media.

Active travelers are constantly on the lookout for new travel services. They are interested in completeness of content, local life and authenticity of impressions. Their requirements are diverse, so the lack of filters for targeted search is a reason to change the application.

The research didn't reveal any significant dependencies. Researches of unorganized tourists, features of their choice of travel design should be studied further. There are no significant links between the fact of independent travel planning and socio-demographic characteristics of respondents. Socio-demographic characteristics of respondents don't have a significant impact on the assessment of travel applications. The authors are planning to continue the research to establish the initial momentum for actualizing the needs of independent travelers. There is a confidence that independent travelers are open for new impressions and choose at first a place of rest (the country, the city), and then how to carry out this rest (excursions, a beach, actions, etc.).

5 Conclusions

Digital technology has significantly changed the tourism infrastructure, which has made tourism a popular leisure activity. Travel applications for many consumers are an integral part of travel planning and implementation. The presence of many options on the market indicates the absence of obvious favorites among consumers.

The market of travel applications is saturated, there are no free niches, the competition for customer loyalty is high. The most promising approach to study the saturation of online applications is to consider tourism in terms of the proposed product to meet the needs. This approach is more in line with the trend of expanding the category of unorganized tourists who do an excellent job of organizing travel under the control of digital assistants. And if the question of the cost of the tour remains debatable, then the nature of the impressions clearly contributes to the further growth of this category of tourists.

Classification of applications in terms of their specialization for the provision of tourist package services allows not only to clarify the circle of competitors, but also to identify the features of travel applications that can be added to increase the value provided.

In the fight for the consumer, travel applications consolidate many functions in one package, provide reservations and pay online, and work on the convenience of the interface. However, for consumers this is a kind of standard, below which they do not consider the use of applications. The search for ways to develop digital solutions for unorganized travelers should be based on identifying the significance of new features and the time of use of the application.

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