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Features of application of information technologies in modern tourism

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Abstract. The article deals with the structure of the modern information technology system used in the tourism industry. It is emphasized that the use of information technology in each separate segment of the tourism industry, such as hotels, ticket reservations, the creation of specialized tourist products, is interlinked with all others. The purpose of the article is to

reveal the peculiarities of the using of modern information technologies in the tourism industry. It was established that the introduction of information technology in the tourism industry took place in four stages, from the creation of data, through the direct development of information technologies, the development of strategic information systems and the integration of individual IT components in a network of different levels, from local to global. It is revealed that the majority of tourist enterprises use both standard and special software in their activity. For tourism enterprises to carry out marketing activities successfully, the information market offers technologies aimed at the process of automating the accumulation of survey results, planning and developing a marketing strategy. One of the most important elements in the tourism industry is computer reservation systems, which eventually integrated into global booking systems. These systems provide not only transport services, but also hotel accommodation, cruise trips, location information, bus, rail and air connections, exchange rates, weather reports, etc., allowing one to reserve all major components of the tour. Tour operators use several classic approaches to building a reservation system. The features of the market of tourist services, the specific characteristics of the services themselves and the peculiarities of their perception by consumers determine the specifics of marketing in this area. The use of information technologies, in particular the Internet, enables businesspeople and marketers to explore new market opportunities for their travel services, to highlight and explore various market segments (geographic, demographic, professional, organizational, behavioural, etc.). Tracking relevant information can be used to predict the future development of consumer demand and identify new trends in the behaviour of existing and potential customers. The use of geoinformation systems opens up broad prospects for engineering justification and design of new tourist routes and recreational areas, the publication of thematic tourist maps and the creation of web atlases, etc. Thus, thanks to information technologies, a single tourist information space is created that allows all players in the tourist market to quickly receive real information.

Key words: tourism industry, information technologies, marketing strategies, travel companies, tourist product, geoinformation systems

Особливості застосування інформаційних технологій в сучасному туризмі

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Анотація. У статті розглянуто структуру сучасної системи інформаційних технологій, що використовується в туристичній індустрії. Наголошено, що використання інформаційних технологій у кожному окремому сегменті туристичної індустрії, як то готелі, бронювання квитків, створення спеціалізованого туристичного продукту, взаємопов'язане з усіма іншими. Метою статті є розкриття особливостей застосування сучасних інформаційних технологій в індустрії туризму. Встановлено, що впровадження інформаційних технологій в туристичну індустрію відбувалося в чотири етапи - від створення даних, через безпосереднього розробку таких інформаційних технологій та інтеграцію окремих ІТ в мережу різних рівнів, від локальних до глобальних. Виявлено, що більшість туристичних підприємств у своїй діяльності використовують як стандартне, так і спеціальне програмне забезпечення. Одними з найважливіших в туристичній індустрії є комп'ютерні системи резервування, які з часом інтегруються в глобальні системи бронювання. Туроператори використовують кілька класичних підходів до побудови системи бронювання. Особливості ринку туристичних послуг, особливості самих послуг та їх сприйняття споживачами визначають специфіку маркетингу в цій сфері. Використання інформаційних технологій, зокрема Інтернет, дозволяє підприємцям та маркетологам вивчати нові ринкові можливості для своїх турпослуг, висвітлювати та досліджувати різні сегменти ринку (геогра-

фічний, демографічний, професійний, організаційний, поведінковий тощо). Відстеження відповідної інформації може бути використано для прогнозування майбутнього розвитку споживчого попиту і виявлення нових тенденцій у поведінці існуючих і потенційних клієнтів. Використання геоінформаційних систем відкриває широкі перспективи для інженерного обґрунтування та проєктування нових туристичних маршрутів і рекреаційних зон, видання тематичних туристичних карт і створення веб-атласів тощо. Встановлено, що завдяки інформаційним технологіям єдиний туристичний інформаційний простір створений, який дозволяє всім гравцям туристичного ринку оперативно отримувати реальну інформацію.

Ключові слова: індустрія туризму, інформаційні технології, маркетингові стратегії, туристичні компанії, туристичний продукт, геоінформаційні системи

Introduction. World tourism developed extremely rapidly during the twentieth century and at the beginning of the twenty-first century. In the second half of the last century the number of inhabitants of the planet that travelled increased from 25 to 700 million people. In 2020, the world is projected to have 1.5 billion international tourists (The Travel, 2017). The UN, UNESCO and the WTO have identified the 21st century as a century of tourism.

Tourism, both international and domestic, is a sphere of growing application of information technologies (IT). The system of information technology used in tourism consists of a computer reservation system, teleconferencing systems, video systems, computers, information management systems, electronic information systems of airlines, electronic money transfer, telephone networks, mobile communications, etc. It should be noted that this technology system is not created by travel agencies, hotels or airlines, acting separately, but by all of them together. Moreover, the use of each segment of the tourism information technology system is important for all other parts. For example, a hotel's internal management systems can be linked to computerized global networks, which in turn provide the basis for communication with hotel reservation systems, which, in the opposite direction, may be available to travel agencies through their computers. So, here we are dealing with an integrated information technology system that is distributed in tourism. It becomes clear that the tourism industry is not served by computers, telephones, and video terminals as separate units – there is a system of interconnected computer and communication technologies. In addition, the individual components of the tourism industry are closely interconnected – because many tourists vertically or horizontally penetrate into each other's activities.

Considering the role of information technology in the field of regional tourism, it should be remembered that the proposed development and tourism development plans should answer the following questions: how should we assess the state of the tourism industry and the main problems of its development?; which main areas of tourism are most

in line with the interests of the region?, where and in what is it most effective to invest money?; how can we improve the image and increase the attractiveness of a given region for tourists?; how can we stimulate the socio-economic development of the region through the development of tourism?

The purpose of the article is to reveal the peculiarities of the use of modern IT in the tourism industry. According to the stated goal, the following tasks are foreseen: to outline the scope of application of information technologies in the management of subjects of tourism activity; systematize innovative approaches to the marketing activities of tourism enterprises with the use of various information technologies; to substantiate the potentially promising directions of IT implementation in the activity of tourist enterprises; to determine the state and preconditions of ensuring the quality of tourist services in the context of application of information technologies;

Material and methods of research. Analysis of recent research and publications. Research on the use of the latest information technologies in the activities of tourism enterprises and tourism in general was carried out by S. Arimov (Arimov, 2007), B. Dmytryshin (Dmytryshyn and Tytarenko 2015), V. Hudo (Hudo, 2000), T. Kupach (Kupach, 2015), S. Melnichenko (Melnichenko, 2018), N. Pinchuk (Pinchuk, Galuzyns'kyj, Orlenko, 2003), M. Skopen` (Skopen and Sukach, 2010), Pease W. R. (Pease, Rowe, Cooper, 2007), M. Meyerson, M. Scarborough (Meyerson and Scarborough, 2008). However, the research has only partly revealed the impact of information technology on the development of the tourism industry.

The development of the tourism industry contributes to reducing unemployment in the regions of Ukraine, to bringing a significant increase in revenues to local budgets, and to the improvement of territories. However, the development of tourism in the regions of Ukraine is hampered by the poor state of tourist infrastructure, lack of targeted policy and socio-economic instability. Existing problems of information provision of the tourism business on the regional level could be solved through the use of

planning and management of tourism information systems (TIS) and geographic information systems (GIS). An analysis of international experience in the creation and operation of tourist and geographic information systems shows that these systems can be regarded as a sort of statistical package – an indispensable tool in the regions' tourism business in planning, research and marketing. Thanks to information technology, the tourism product becomes more individual and flexible, and also more accessible to each consumer.

Results and their analysis. Implementation of IT in the tourism industry took place in several stages. The first step was to «create data». Its main goal was to increase the efficiency of operational activities of travel companies through automation of processes based on the use of information.

The second stage was the introduction of “information management systems” and the development of such information technologies that would increase management efficiency by improving the requirements for the organization of the transfer of information.

The third stage was the use of systems of “strategic information” that could increase the competitiveness of the firm. Different types of integrated networks were introduced to improve the direct activities of travel agencies, as well as to establish links with external organizations.

The fourth stage was the “stage of the networks”, thanks to which networks were connected at all levels: local, regional, city and global. The main features of the phase – to increase the efficiency of IT, reduce the size of equipment, reduce the cost of its acquisition, increase reliability, the organization of the interconnection of terminals located in different parts of the planet. All this contributed to the fact that IT began to play an important role in the activities of all tourism organizations. As a result, all organizations, regardless of their size, the proposed product and geography, have undergone a serious process of reorganizing their business.

Today, IT technology plays a major role in the field of technical development of tourism, which is determined by a number of specific IT properties (efficiency and availability). One of the indicators for assessing the competitiveness of the country in the field of tourism is the “information communication technology readiness” (ICT). It means rapid development, involvement of a large number of organizations, companies and countries, and rethinking their concept of “provision of services” to integrate constant communication into experience (The Travel, 2017).

Today's tourism is an industry in which the collection, processing, use and transfer of information is a vital component for everyday activities. In tourism, services cannot be exhibited and considered at a point of sale like any other manufactured or consumer goods. Tourist services are usually bought in advance and away from the place of consumption. Consequently, tourism in the market is almost entirely dependent on photographs, descriptions, means of communication and information transmission.

Most tourism companies use standard software (typically Microsoft software packages: Word, Excel, PowerPoint, Outlook) as well as special software (designed to automate the solution of specific, highly specialized tourist business tasks) in their business. Not all Ukrainian tourist agents use special software, but they all use standard. The use of special software can be achieved through: separate programs or modules – “Tour Anketa”, “Tour Pilot”, etc.; typical software systems – “TurWin MultiPro”, “Samo-Tour”, “Self-travel agent”, “Master-tour”, etc. For the successful functioning of the market, tourism enterprises carry out marketing activities that have recently become increasingly subject to automation. In the information market there are various software products for the computerization of marketing activities, they are aimed at the process of automation of the accumulation of survey results, planning and development of a marketing strategy. The British analyst company IDL conducted a survey of European companies on the place and role of information technology in today's business. The most important, according to 64% of respondents, is the expansion of the use of IT to manage relationships with business partners (Kostenko, 2004).

The most widespread software products among domestic tourism actors, according to the results of the Internet poll, are: TurWin MultiPro, Samo-Tour, Self-Travel Agent, Master-Tour, Tour-client, Tour-Manager LIGHT, Parus Travel Agency, Parus Hotel, Parus Restaurant, BS Integrator, Epitome Enterprise Solutions, OPERA Enterprise Solution, Hotel 3 and more. The given automation systems allow users to organize administrative processes and conditions of operational activity at the enterprise by combining the existing operations and individual application packages into a single integrated process. In practice, tourism enterprises can implement and gradually automate certain functional groups of processes. The specifics of the manufacturing processes of tourist enterprises consists in designing routes and tours.

IT in modern tourism is a communication centre that embraces various producers within the tourism industry. It is the information, and not the

goods, that provide a link between the producers of tourist services. This information is about the availability, cost and quality of these services. Real payments are not transferred from travel companies to suppliers, and commissions – from tour suppliers to tour companies, only information on payments and receipts is transmitted.

There is a system of interconnected communication and computer technologies in the tourism industry. All this makes it possible to consider tourism as a highly integrated service (Titarenko, Makarova, Dajntbegov, 2000).

Ability to work with information, collect, process and make the only correct decision on it, developing information standards today is the basis for successful organization of tourism business. The importance of IT in tourism is also determined by the fact that it provides multiple productivity growth in the service sector.

Today, the most important information systems in the travel industry are computer reservation systems. In the last decade, due to the increasing use of computer reservation systems, they received a new name – Global Distribution System, (GDS).

The basis of modern computer reservation systems was laid in the 1950s. Due to the growing popularity of air travel, there was a need for the creation of global reservation centres by airlines, the task of which was manual processing of airline ticket reservations received by mail, telephone and telegraph from tourist organizations and end- use customers.

Despite the large size and the large number of staff, the reservation centers could not cope with the growing volume of information. This served as an impetus for the development of computer reservation systems for major airlines.

The reservation systems provide not only transport services, but also accommodation in hotels, cruise trips, location information, bus, rail and air connections, exchange rates, weather reports, etc., which allows users to reserve all major components of the tour.

The reservation systems are a common IP that provides the most important distribution networks for the entire travel industry. Due to the existing databases, travel agencies have access to information on available services, cost, quality, arrival time and departure for a number of tourist services from tour providers. Today, the largest computer reservation systems in the international tourism market are the Sabre, Amadeus, Worldspan and Galileo systems. Together, these systems account for approximately 500 thousand terminals installed in hotels around the world, accounting for more than 90% of the market.

Another 10% is occupied by regional reservation systems, or those that are in the merger with one of the above. Each element of the GDS though is global, but has its distribution range. Thus, Amadeus and Galileo are distributed in Europe, Sabre and Worldspan – in America (Dmytryshyn and Tytarenko, 2015).

Currently, there is a large variety of reservation systems for tour operators and several typical approaches to building a booking system for a tour operator company (Pease, Rowe, Cooper, 2007, Mel'nychenko, 2008, Gljebova, 2016). They can be classified in this way.

1. *Classic variant: step-by-step booking option.* Reservation of a tour or a separate service is carried out step by step, for example, the first step is the choice of a country, the second – the choice of the resort (direction), the third – the choice of the intended date of arrival, etc. Although the tourism industry was changed two decades ago with the Internet, today there is a second revolution in the tourism industry, with the rapid growth of services provided through mobile devices. In less than two years, the proportion of online booking has grown rapidly from 9% to almost 33% (The Travel, 2017).

2. *Booking through the order basket:* the travel agent works with price lists. By creating a different order basket (it may be travel packages and individual services or service packages), these services can be booked.

3. *Reservation through a dynamic price list:* with the help of a set of filters, you can select the tourism product that is needed, called the booking option this is very popular for mass destinations.

4. *Reservation of the tour through selection (search) of the optimum price,* or selection of a special offer, or hotel selection, etc. With this booking option, it is convenient to conduct a selection of tours based on a set of search criteria, such as the name of the resort, the hotel's «star», hotel service, food, the estimated range of prices, etc.

5. *Reservations of cruises.* In order to properly select and book a cruise, a potential buyer should receive a large amount of information – a description of the cruise company, the cruise ship itself, its scheduling, cabin prices, cabins, etc.

6. *Booking of bus tours.* Bus tours also have specifics. As a rule, this involves tours with complex routes in many cities and countries. In the booking of bus tours it is necessary to show the exact route of movement and real loading of the vehicle.

7. *Reservation of sanatorium and spa treatment facilities.* In such systems, the main thing is to carry out a qualified selection of a sanatorium based on the medical indications and benefits of the patient.

For proper selection of sanatorium and rehabilitation facilities, it is necessary to indicate the list of medical conditions and some specific data about the patient (possible treatment time, place of residence, recommended climate, etc.). To enable the client/patient to make an informed selection, a large amount of medical information about the sanatorium is provided.

Today, tourism business management software allows you to solve various tasks. Travel companies that are seriously operating in the market of tourist services will not be able to significantly increase their productivity if they ignore the latest software in the management of tourism activities. Conditionally, they can be divided into six sections: customer service, tours, directory support, payment management, preparation of outgoing documents, service regimes.

The section “Tours” gives you the opportunity to independently create tourist programs (transport, accommodation, additional services) for travel agencies or to enter the database of ready-made tourist products. The client part of the program provides an opportunity to organize a database of tourists, to accept orders and calculate the tour price, taking into account existing discounts. The accounting section of the program allows you to automatically generate all types of reports and payment documents (expense and profit cash orders, invoices, etc.). The software package also provides reliable work on the local network, compatibility and organic use with the programs of other developers. An integral part of any computer agent program are reference databases.

These software packages provide functional capabilities that allow one to quickly and efficiently manage the travel agency, responding to the rapid changes in demand and supply, and allow the best results to be achieved in a short time.

Without the Internet it is impossible to imagine the activities of travel agencies. The Internet is used in virtually all major business processes within the travel agency, from the search and attraction of customers, as a communication and marketing tool, to the formation of tourist products. It provides a large amount of information needed by travel agencies, from the addresses of hotels and schedules of flights to visa and customs rules, and offers from domestic and foreign tour providers, and information unlimited in scope – ranging from price lists to entire catalogues. Information on the Internet is available to users, agencies or clients 24 hours a day and 7 days a week. The use of the Internet in the field of tourism includes many other areas.

1. Obtaining access to the use of modern communication systems, including e-mail, digital

telephony, etc., which significantly reduces the cost to tourism enterprises for negotiation, business correspondence, etc.

2. Possibility of creation and successful application of internal–corporate systems for booking their tours through the Internet. Travel agencies from the tour database, located on the Internet, choose one of the offers, enter their details and data on tourists who are entered in the internal base of the tour operator. The system automatically in real time recalculates changes in prices for package tours, takes into account non–standard placements, requirements and other functions. In this case, the agency in real time can trace the stages of passing the order, estimate loading of hotels, flights, etc.

3. Obtaining different reference data, including countries, tariffs, prices, weather forecasts in different parts of the world and others in real time, which contributes to the formation of a qualitative product tour.

4. Getting access to global reservation systems.

5. Ability to create new marketing channels for the promotion of tourism services, in particular, the creation by firms of their own websites, which will allow users to easily find information on conditions at resorts, prices, services provided, more detailed information about the organization of the tour; feedback pages for tourists, forums (online conferences), virtual tourist offices, e-commerce, etc.

6. Implementation of online multimedia technologies, in particular directories and catalogues. Multimedia is an interactive technology that provides work with video, animation, text and soundtrack. Tourist guides and catalogues are currently available online. Electronic catalogues allow you to travel virtually on the proposed routes, view these routes in active mode, get information about the country, objects of interest along the route, hotels, camp sites, motels and other accommodation facilities, get acquainted with the system of benefits and discounts. In addition, these directories usually offer information on the rules of registration of tourist documents, tourist formalities, models of tourist behaviour in extreme situations, etc. The client can plan the programme of the tour itself, choose it according to the given optimal parameters (price, system of privileges, system of transport, season, etc.). When using multimedia technologies, a potential customer is promptly provided with information about any tour of interest to him/her and this allows him to quickly and accurately select the relevant tourist product. Multimedia technologies are effectively used in the field of advertising, PROMO and PR–technologies.

7. The rapid development of the Internet also

affects the attitude of travel agencies to advertising. For example, some travel agencies have begun to reduce the volume of published newspaper ads, preferring to place their own ads on the Internet. Big advertisements in newspapers are now being squeezed out by small ones, with the address of the information page of the company on the Internet. The Internet allows mass advertising campaigns at a minimal cost. If you place commercial information in a popular electronic edition, it will be available to people around the world for a long time. For a small fee on the Internet you can publish detailed information about the company, its products and services, terms of working with customers, etc.

The specifics of tourist services today is that they, as a rule, do not acquire a real form. Accordingly, the following conclusions should be made: the service does not exist until it is provided, that is, the product is created during the provision of the service. As a result, it is impossible to compare two different vendors offering identical services before receiving them. Often the provision of tourist services requires special knowledge and skills, which are difficult for the buyer not only to evaluate, but sometimes to understand. Therefore, tourists often seek to work with one seller (Kotler, Boujen, Mejkenz, 2012).

The features of the market of tourist services, the specific characteristics of the services themselves and the peculiarities of their perception by consumers determine the specifics of marketing in this area. The main task of marketing is to help the client to evaluate the company and its services. All tourist services, from transport to intermediary, constitute a tourist product. Thus, the tourist product represents any service that satisfies those or other needs of tourists willing to pay for it.

Along with the general indicators, the tourist product has a number of distinctive features:

- it is a complex of services and goods (tangible and intangible components) which is determined by a complex system of relationships between different elements;
- the demand for tourist services is extremely elastic in relation to the level of incomes and prices, but mainly depends on social conditions;
- the client, as a rule, cannot see the tourist product prior to its consumption, and in itself consumption is mainly carried out directly at the place of production of tourist services;
- the client crosses the distance that separates him/her from the product and place of consumption, and not vice versa, and also depends on indicators such as space and time;

- the offer of tourist services differs in its inflexible production, they can be consumed only directly on the spot. The hotel, airport, recreation centre cannot be moved at the end of the season to another region. Travel services cannot adapt in time to changing demand;

- a tourist product is created by the efforts of many firms, each of which has its own working methods, specific needs and various commercial goals;

- the high quality of tourist services cannot be achieved in the presence of even insignificant shortcomings, since tourist service consists of these very small details;

- the assessment of the quality of tourist services is characterized by considerable subjectivity;

- significant influence on the consumer's assessment is made by people who are not directly related to the package of services purchased (for example, locals, members of the tourist group);

- the quality of travel services is influenced by external factors which count as force majeure (natural conditions, weather, tourism policy, international events, etc.).

These specific features of the tourism product have a significant impact on marketing in tourism and its information component (Pinchuk, Galuzyns'kyj, Orlenko, 2003). Tourist marketing is defined as the identification of the most complete satisfaction of people's demand from the point of view of social and psychological factors, as well as the identification of the financially most rational way of dealing with travel agencies, which allows one to take into account the identified and hidden needs in tourist services (Meyerson and Scarborough, 2008, Mazaraki, Tkachenko, Mel'nychenko, 2013).

The use of IT, in particular the Internet, enables businesspeople and marketers to explore new market opportunities for their travel services, to highlight and explore various market segments (geographic, demographic, professional, organizational, behavioural, etc.). Tracking relevant information can be used to predict the future development of consumer demand and identify new trends in the behaviour of existing and potential customers.

The main feature of the e-commerce market is its interactivity. The manufacturer can at any time find out the user's opinion about the consumable product or service, process the received information and make a decision. This allows the manufacturer to flexibly change its own marketing policy, depending on the circumstances (for example, fluctuations in demand) (Ponomarenko, 2002).

The Internet opens up to travel agencies not

only the ability to effectively organize feedback and to quickly investigate current demand, but also flexibly change marketing plans depending on the circumstances. The Internet under present conditions has become an independent tool for finding fresh marketing information that far exceeds the usual media. In addition, the use of the Internet greatly reduces overheads on the promotion of goods and services while reducing the risk of investment.

Internet marketing interacts with a set of subsidiary industries that include not only banner advertising and public relations, but also study the demand of the consumer audience, the development of algorithms for the formation of high-efficiency advertising campaigns, the means of correct positioning of the trademark in the market, the technology of electronic commerce. This allows Internet marketing to rapidly evolve and influence the development of the tourist industry (Gljebova, 2016, Meyerson and Scarborough, 2008).

If the company is sufficiently diversified, then it will be able to penetrate into new business spheres with the help of the Internet before others, instead of trying to compete within their current business.

A growing role in effective promotion of tourist products on the market of tourist services is played by geographic information systems. Application of geoinformation systems and technologies means the transition to a new, more qualitative level of management, planning, design and operation of complex tourism industry systems. Therefore, the introduction of GIS in the tourism sector is a topical issue of the entire territory of Ukraine. The legal basis for this is the Law of Ukraine “On the National Program of Informatization” of 04.02.1998, by which geoinformation systems are classified as the main category in the implementation of the programs of informatization of Ukraine (Zakon, 1998). GIS is defined as an automated information system designed to process spatio-temporal data, the basis of which integrates geographic information (Vysochan, 2011). Thus, GIS is defined as an organized set of certain complexity of equipment, software, specially created geographic data and personnel, forming a special complex, intended for the effective input, storage, updating, processing, analysis, and visualization of all types of geographically oriented information. The entire variety of GIS functions can be grouped into categories, among which the most significant are the following: data collection and input; their correction and storage; restructuring, generalization, transformation; request, analysis (calculation); presentation of results.

Using GIS, the following functions are carried out:

- creation of a universal basis (geographic database) for the organization of various types of information necessary for the study of the situation, for research or for management in a particular region;
- a tool for displaying the dynamics or for predicting the functioning of complex natural and man-made phenomena and as a reference and information system;
- GIS is an important tool in modeling or for the creation and use of knowledge bases and expert systems.

Structurally, GIS is a complex, organized system that includes the following components:

- 1) data management (in the project it is important to determine the general organization of the system, provide the necessary staffing, choose the nature of administration);
- 2) data collection (determining moment – types of data sources and their exchange formats);
- 3) entering and storing data (it is necessary to find the most accessible ways of transferring all data into a digital form);
- 4) search and analysis of data (enough to perform standard model-analytical operations);
- 5) using (creation of the user interface);
- 6) information output (mathematical and cartographic modeling and generation of maps in the given form).

To work in the tourism business you need to have information about:

- natural conditions for the organization of specialized types of tourism and recreational activities;
- excursion potential of cities and administrative districts;
- features of the hotel industry, transport and other tourism infrastructure;
- provision of tourism personnel;
- opportunities, problems and conditions for provision of basic and additional services in the field of hospitality.

It should be noted that specific indicators are determined by the peculiarities of the recreational resources of the territory.

From the list it becomes clear that even the minimum necessary set for creating the optimal combination of goods for the implementation of tourism or the process of providing optimal forms of targeted services and services in the organization of recreation will not be successfully completed without GIS projects.

In the field of tourism, recreational activities and

hospitality industry it is expedient to develop GIS projects for solving the following tasks:

1) inventorising of natural and socio-economic resources and assessment of their degree of use in tourism and recreation;

2) monitoring of the state of the environment (biotic components) and revealing the scale (reasons) of its transformation as a result of recreational activity and tourism;

3) development of strategic programmes and specific plans for managing resources, objects, territories in the short and long term;

4) information support for regional sustainable development projects.

The advantage of GIS is determined by the visual representation of hundreds and thousands of digits, dozens of geographical names, easy access and basic topographical and socio-economic information in understandable images. With the help of GIS, it is possible to introduce geographic analysis functions in the process of development of prospective tours and organization of recreational zones with the service of a wide range of requests – from the calculation of time and the offer of optimal segments of a tourist trip to the preparation of a seasonal route sheet and the schedule of an agreed order and the use of charter flights from different companies and states (Mihjejev, Noskova, Chudakolov, Ju., 2015).

The use of GIS allows us to rationally justify the choice of the necessary information technologies and their competent use in the work of any tour company, which can significantly increase competitiveness, reduce the complexity of routine work, accelerate the processes of obtaining and providing information necessary both when working with partners and customers, as well as when making managerial decisions.

Thus, the use of the Internet provides the formation of a single tourist information space in which all players in the tourist market (tour operators, travel agencies, clients) have the opportunity to place or select the necessary information in real time, with the essential factors being «clarity» and «truth» This information is for everyone, that is, all information should be treated equally. Information should reflect the real state of affairs.

Conclusions. Information technology creates a single tourist information space, which enables clients to create their own tours without the participation of travel companies, significantly saving their financial resources. On the basis of the above, we can conclude that with the increase in the volumes, quality and diversity of digital spatial information, the role of

geoinformation systems and technologies as the main tool for visualization, search and analysis of information when making various management decisions will increase. The high degree of development and application of IT makes it possible to effectively organize not only the work of tourist organizations, but also to carry out its certification.

Automation of the information management process helps to ensure a qualitatively new approach to management decisions. Thus, in the current market conditions, with the increase in the volume of tourism receipts and increasing competition, the subjects of tourism activity depend on effective management, which is impossible without the use of modern IT, providing a quick response to customer needs and maximum satisfaction, in accordance with the requirements of enterprise flexibility, orderliness and consistency of operations.

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