Research Article

Application of Information Systems in Tourism and Leisure Sector

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ABSTRACT: The article analyzes the peculiarities of application of information systems in tourism and leisure sector, reveals the advantages of competitiveness. The study found that the functionality of information systems application provides a user with information about hotels, travel, and the attractiveness of leisure products. Therefore, in the development of tourism and leisure organizations, it is important not only to maintain good contacts with clients or establish positive relations and their consolidation in society, but also to implement information systems.

Key Words: tourism and leisure sector; tourism products; information systems; the information society.

Introduction

Application of information systems and information dissemination in Lithuanian tourism sector is one of the topical issues. In the 21st century, professional, personal life and business development are unthinkable without modern information systems. Realization of the tourist product requires such information systems that can provide information on tourist accommodation, booking and booking opportunities, transport rent, ticket reservations and other services within a short period of time.

Globalization process determines a rapidly expanding flow of information which results in building the information society. It is understandable that the emergence of information systems was determined by the level of computer technology evolution and changing expectations and needs of users. Despite the rapid development of information systems only since the middle of 1990 they have become important in the activities of tourism and leisure organizations as most of them began to actively use the Internet (Novikov, 2007). For businesses, the Internet has made it possible, without much effort, to gain access to large groups of consumers, to provide specific information about the products offered, to securely disseminate details about their activities, to quickly and efficiently receive customer requests, to order the necessary services, and to reduce the financial costs of producing and distributing printed materials (Agarval, Prasad, 1999).

The tourism and leisure sector has become a mature market that needs changes in the transmission of information. Innovations, according to the researchers (Crawford et al., 2005; Davidaviciene et al. 2009; Vaškaitis, Arminienė, 2013),

include many participants contributing to product development and network management. The application of information systems improves a company's activities, coordinates functional and business lines, increases the competitiveness in the tourism business and promotes a greater flow of tourists. Modern information systems strategically help organizations make the right decisions, and, thanks to them, tourist regions can realize everything they have got by presenting themselves to potential tourists: museums, architectural monuments, various cultural and sporting events, festivals, and other activities. Therefore, in order to maintain a high level of customer service, it is necessary to analyze the possibilities of information systems application.

The object of this paper – is information systems.

The aim of this research – is to evaluate advantages and disadvantages of information systems application in relation to consumers.

To achieve the goal, the following *tasks* were structured:

1. To analyze theoretical aspects of application of information systems in the tourism and leisure sector.

2. To examine advantages and disadvantages of the use of information systems in the tourism and leisure sector with respect to consumers.

Methods: Analysis of scientific literature, survey.

Research ethics. Respondents were told that participation would be voluntary, guaranteeing anonymity, privacy, the right to decide on the opportunity to participate in the research and express their thoughts freely.

Theoretical Aspects of Information Systems Application in Tourism and Leisure Sector

The concept of information systems has experienced momentous changes in different periods of existence. Every decade, the area of use accelerated, helping to reach a faster speed of service, ensure a higher level of quality, and change consumers' behavior. The large amount of information of various kinds, its selection and screening, storage, processing and presentation have become the main factors of the development of a tourism company (Selezniava, 2011).

Tourism and leisure industry requires the most diverse application of information systems, from the widely used systems for working with electronic tables, text and databases to the use of specialized programs that provide automated work for individual tourist companies (Ikonikov, Sadovskaja, 2014). Tourism automated control systems are designed to create an effective tourist structure and improve the working conditions for the staff. Installing information systems, a company does not need to change its profile much since flexibility only is enough (Župerka, Župerkienė, 2015). According to G. Korres (2008), the spread of information and communication technologies in the tourism sector allows users to interact directly with tourism service providers.

Today`s tourism and leisure is an intelligent and informative service industry closely associated with specific activities of a tourism company, so the smart use of information systems creating and offering a new product is important (Esaulova, 2010), as well as distribution of tourism services via electronic business, „even without visiting a territory" (Langviniene, Hungary, 2005, p. 295).

Information systems in tourism and leisure industry are divided into shared management modules of the global systems, tourist destination systems, general destination management and auxiliary systems which are classified in greater details. Information systems are the elements comprising the environment: computers, software, computer networks, databases, and people. The main purpose of information systems is to store, process and transfer the final required information for decision-making.

In the 1950s, the role of information was recognized as a key resource for businesses, organizations, regions, and communities because the development of various types of automated information systems began. The first information systems were intended solely for the processing of invoices and payroll accounting, and were implemented through the use of electromechanical accounting machines. It encouraged time and cost reduction while preparing paper documents.

In 1970, information systems began to be used by businesses as a production management tool that supports and accelerates the process of preparing for solutions. The emergence of personal computers triggered the emergence of distributed computing resources and decentralized management systems. This reduced the centralized burden of computer resources and the highest level of management, which allowed focusing on key and long-term strategic decisions.

The beginning of the 1990s is considered to be the age of the network. In those days, network interconnection began at all levels, increasing the capabilities and reliability of information systems, reducing the size of equipment and reducing costs by acquiring it and connecting terminals located in different places of the planet.

In the 20th century, the development of the sports, recreation and entertainment industry accelerated, bicycles, motorcycles and cars have come to life. As a result, information systems in the tourism and leisure sector resulted in increased competitiveness and improved cooperation.

The following information systems are commonly used in the sector of tourism and leisure services:

Computer reservation system is the global distribution system which is represented by Amadeus, Saber, Galileo, etc. Initially, these systems were designed for booking airline tickets, but later hotel, cruise booking and car rental were incorporated.

The global computer network is a global information transfer and storage system that connects various types of computer networks. This system allows you to use your computer to search for information and communicate directly with that network user.

The satellite navigation system is destined for overground and space equipment designed to detect the location of land, water and air objects, and their movement parameters (speed, movement direction).

A telephone network is a system of telephone exchanges and communication nodes for the provision of telephone communication. It is used for transmitting analogue, digital messages, text or graphics. Network subscribers can be natural or legal persons (companies, organizations).

Electronic payment system is destined for transferring money by businesses, financial organizations and Internet users for goods via the Internet with e-money (EasyPay), mobile payment system (iPay) or international payment system (Web Money-transfer).

Electronic document flow system is an electronic document management structure for organizational technical system, distributed by computer networks and providing document flow control. The basis of this system consists of work with electronic elements, management of cooperation with customers, processing of applications, automation of services.

E-business is a system that executes basic business processes on the basis of the modern Internet technologies and it is integrated into information systems. This system provides a competitive edge for businesses by reducing costs.

Office application system is a software product designed to perform common tasks and provide partial automation for routine work in tourism companies working with text (Word), electronic table processing (Excel) and databases (Access).

The legal information system is destined for reliable legal information storage with an effective search and analysis capabilities for a wide range of professionals. It provides a quick access to legal information and opportunity for the prompt work.

Multimedia system is a creation of electronic directories, catalogs, museum and tourist guides, etc. Electronic guides allow you to travel virtually through the offered routes, view these routes in active mode, get information about a country,

objects, hotels, campsites, motels, and to get discounts. A client can plan a travel or leisure according to price, discounts, season, and transportation system.

Geographic information system is destined to provide spatial information related to objects. The system is used for designing tourism areas and acquaintance with a territory.

All of these systems serve to create an effective tourism and leisure structure in pursuance of comfortable working conditions for employees as a part of professional development. The factors influencing the participation of tourism service providers in the system are compliance with the goals of the organizations (attracting as much visitors and users as possible). Establishment of good contacts with customers in the field of tourism and leisure, promotion of tourist and leisure services, setting up and consolidation of positive tourism and leisure relationships in society is one of the determinants of the new information systems. Tourist firms must provide the users with informational, accessible, user-friendly, reliable, of inspirational content and interactivity system.

Individual needs determine the consumption of tourism and leisure products. The study by L. A. Isajeva (2014) found that the use of tourism products and services is determined by conditions and circumstances that affect the needs of the developing population. According to L. I. Bušujeva (2005), the internal factors determining the use of information systems are dependent on:

1. *Information changes:*
• increase of information value;
• increasing demand for information quality;
• growing confidence in the results of analysis or research.

2. *Organizational changes*:
• the need to reduce administrative staff;
• review of implementation of some activities and processes;
• database and specialists expansion in the field of information technologies.

3. *Company's performance changes:*
• enhancing the company's position in the market;
• profit increase;
• focusing on individual users;
• increasing precision by targeting groups.

Supposedly, the companies with improved collection and distribution of information can predict the market trends better. However, there are many obstacles encountered not only by the company employees (giving access to the data accumulated in the organization), but also by consumers (using information systems). Most of the companies face four main obstacles. The first obstacle is the managers' fear of investing in the technical part, since it is unclear whether it will pay off; the second is the investment of staff into the qualification improvement, the third is lack of knowledge of staff and resistance to innovations; and fourthly, negative experience, shortage of informativeness and promotion measures. Issues arising from information system users lead to lower productivity and persistent errors in the transmission of information. V.S.

Novikov (2007) states that consumers do not purchase tourist products on the Internet because they do not trust virtual agencies, they do not know reliable tourist websites. Another serious problem is the relevance of the online publication of information. Not surprisingly, attractive prices announced on the websites of tourism and leisure agencies are already redeemed, and managers offer different options. All this is bound up with the lack of a united database, which undergoes the changes of real activity. Another problem is the fear of people using electronic payment systems. People prefer to withdraw money from ATMs, and traditionally pay cash in the agencies because they are scared to be tricked by losing their savings through online systems. Therefore, it is important for the company executives from the very beginning to provide the modernization and improvement of information systems, which would allow expanding the possibilities of their business.

Presentation of Information Systems Application Research

With the rapid development of technology, some consumers are still afraid of using information systems because they do not embrace the innovations. Organizations contribute to the solution of the problem, but they either offer little purchase of tourism and leisure products on the Internet, or do not update the information systems. A survey was conducted to find out about users' access to the information systems.

During the research, 191 residents of Panevėžys city were interviewed, of whom 58 men and 133 women. It was found that the majority of respondents had higher education (73%), a small proportion had secondary (14%) and vocational (11%) education. The smallest part were people with the basic education (2%).

The aim of a survey was to estimate the most frequently purchased tourism and leisure products. The study showed that 63% of respondents buy online independently and only 23% of them do it through the travel agencies. The remaining interviewed (14%) indicated that they usually buy tickets at the booking-offices of Cido Arena, theater and community house, but never use the information systems. It is becoming clear that more people plan their journey or leisure time in accordance with their desire and demand. They do not need to go to the tourism agencies because of the high level of technological progress and subjective factors. Furthermore, it was important to find out the reasons preventing the quarter of respondents, living in the technological era, from the purchase of tourism and leisure products through online systems. This fact indicates that respondents need managerial advice.

When traveling on your own, you need to find a lot of different information about the country you want to visit, and not all information can be found in the Lithuanian language, so the knowledge of foreign languages is required. It should be noted that small travel agencies in Lithuania do not want to invest money into the internet sites, therefore consumers can still see obsolete, outdated information, and only a small part of tourism and leisure products can be purchased online. Other factor leading to non-use of online systems is mistrust, as they often contain unreliable, vague and misleading information.

Online travel agencies often use a promotional trick to attract customers, offering a small initial travel cost which is later replaced (hidden extra costs spring up which make the overall cost of travel less attractive).

A modern person is very busy and often his/her free time does not coincide with the working hours of travel agencies, making it easier and faster to save time by buying online. According to one respondent, „online system is a great thing when travel on your own, since it is possible to reserve everything by yourself without leaving home, and the trip itself becomes much cheaper". The survey results made it clear that respondents prefer to compare prices of various websites at any time of the day, and find the most suitable option in line with their needs.

The study investigated how often the respondents buy tourism and leisure products using the information systems. From the data obtained, it was cleared up that 35% of respondents usually buy once, and 36% respectively twice a year using information systems. In 2017, according to the Official Statistics Portal of Lithuania, consumers bought less tourism and leisure products than in 2016. It follows thence that people's demand to buy could have been determined by the economic conditions on which the needs are directly dependent. A small number of respondents (11%) buy once a month, because tourism and leisure products are used depending on the needs and situation. It should be noted that consumers are interested and encouraged by the purchase of products through the information systems 24/7, without leaving home.

The results of the survey revealed that consumers prefer to buy tickets for concerts, theater, cinema as this is the most popular way of spending free time in Lithuania. Some respondents devote their time to the purchase of tours or SPA procedures. Fewer users buy tickets for festivals, seminars and exhibitions because such events have less interest and are up for the target groups. Sports enthusiasts usually buy an annual ticket and enjoy their favorite team match without worrying that tickets can be sold out. Tickets for amusement parks and circus are bought infrequently since this kind of entertainment happens only once or twice a year. The conclusion is that consumers buy various leisure products through online systems as far as they do not need to buy tickets beforehand, fear of long queues or worry about ticket sales. Pursuit of convenience and time saving shape such behavior.

The majority of respondents independently buy the following tourist products: airplane/bus tickets, accommodation services. Independent purchase of ferry/train/cruise tickets and car rentals allows to guess that people want to save up money by buying online without assistance of tourism professionals. A small percentage of consumers, who buy travel packages from tourism agencies, are happy since everything is done for them, and they have nothing to worry about, just have pleasure walking with a guide and enjoy a rest. Summing up, it is obvious that consumers feel the need to buy or make reservations for tourism and leisure products on their own.

The survey participants are mostly satisfied with the electronic payment systems and the Internet. These systems allow them to use the reservation systems independently, to pay for tourism and leisure products in real time. By purchasing products independently, through the reservation systems, you can see realistic photos taken by travellers, read and write reviews. Many people use maps and satellite navigation systems while traveling, and, consequently, reach the destination effortlessly, without asking for help. It shows that in the current world, a consumer will be hardly able to manage without some information systems. On the ground of the survey data, consumers are mostly influenced by the constant updates of the information systems, which allow to receive the latest offers avoiding misunderstandings. It sometimes happens that a consumer buys a tourism or leisure product online, but the product was already sold out a few hours ago. An improved system allows you to quickly find the proper information and constantly get acquainted with the latest developments, view the latest photo galleries, create a travel route or service package for yourself.

The most common problem faced by the survey participants is the lack of consultation on web sites and, if provided, it is on during working hours only. Tourism and leisure companies should consider extending the time period for providing advice or providing them twenty four hours a day. In this way, consumers would be encouraged to use the information systems more often. Non-upgraded systems provide inaccurate, false information that disappoints a client. There are often technical errors that prevent you from paying for products or services, or advertise discounts that do not exist in reality.

Such mistakes pose additional problems and inconvenience to users. Also, an overly tricky menu complicates the search and causes problems since it takes a lot of time to realize how it works. Information systems should be upgraded and updated to prevent consumers from facing problems.

The disadvantages highlighted in the study are given below:

Unsatisfactory information about a product or service. With a very concise description, it is difficult to get customers interested in buying products, so leisure organizations should provide more detailed and widespread information to keep the consumers concerned.

When paying for goods online, it is often not allowed to use various payment cards, i.e., a consumer is required to mostly use a credit card, and, as a result, only a few websites allow paying by debit card or transferring money to a company's account.

In Lithuania, if you want to book or order leisure products, consultations are available on the phone only, as such services are not always provided online. It is very inconvenient for people who are busy or work late hours.

Leisure companies should offer a wider range of services such as bowling, paintball, etc., taking into account a consumer needs and prepaid services through the information systems.

Respondents believe that „higher discounts and exclusive offers always attract people's attention because it affects psychologically". A user feels exceptionally pleased if he/she personally gets special offers with significantly higher discounts. For many, while buying leisure and tourism products online, it is very important to use easier and simpler information systems which make it possible to quickly,

efficiently and conveniently find the proper information. Price comparisons on various sites would allow the buyer to choose the cheapest option for the same product because people often do not want to pay more for the same stuff. Getting a quick response to inquiries, customers receive specific and up-to-date information about the product they are interested in, and are not forced by the agency managers to wait long. The variety of goods and wider presentation of information along with a faster, high-quality search system would allow customers to save time looking for the appropriate tourism and leisure products. Web sites should secure greater reliability by usage better protecting systems against various hackers and spammers. Besides, websites should have clear, easy-to-understand content with better quality information. Analyzing the factors stimulating development of new information systems in tourism and leisure sector, consumers' desire to receive better discounts and exclusive offers is definite.

Summarizing the data that are obtained, it can be stated that people of all ages use information systems for the purchase of tourism and leisure products. Finding the proper information fast and receiving the latest offers attracts respondents the most. Consumers often buy online once or twice a year, besides, they can compare the prices of different websites and purchase cheaper products. The study revealed that the purchase of leisure products, such as tickets for concerts, theater and cinema predominates, while travel products are mostly purchased for airline tickets and accommodation services. E-payment systems and the Internet satisfies the needs of users the most since, without those tools, to buy through online systems would be hardly possible. The study also revealed that among the issues of information systems, consumers face lack of consulting, technical errors and non-upgradeable systems. Therefore, when shopping for leisure products, consumers cope with shortage of information, not of all payment cards accessibility and impossibility to buy all products online. More frequent use of information systems by the customers will result in higher discounts and exclusive offers and will meet their needs.

Needs satisfaction, better discounts, best deals of the day and other actions would encourage the respondents to use the information systems more often.

Table below demonstrates advantages and disadvantages of information systems usage indicated by the survey respondents.

Table 1. Advantages and disadvantages of of information systems usage

Advantages	Disadvantages
1. Allows to receive new offers	1. Consultations are held on the telephone only
2. Allows to find the proper information faster	2. In most cases, it is possible to pay for services only at the place of service
3. Allows to save up	3. Not all payment cards are accessible
4. Enables to constantly get acquainted with innovations	4. Not always possible to pay in advance
5. Allows to view the photo galleries	5. Not all products are purchasable online
6. Allows to broaden horizons	6. Insufficient range of services
7. Allows to write comments	7. Too little product information
8. Allows to plan a journey route independently	8. In most cases, the service is reserved by phone only

It can be stated that purchase of tourism and leisure products and services through online systems is shaped by consumer desires, satisfaction, dissatisfaction, and economic conditions of people on which the needs depend. The need itself is formed by the price comparisons, search for the most affordable options, availability to buy products at any time of the day, convenience and time-saving. Such systems allow the seller to reduce expenses and labor costs when processing orders, optimize as many business processes as possible analysing the demand. Application of information systems enables to increase the growth of sales of tourism and leisure services.

Assessing the results of the survey, it is seen that tourism and leisure service organizations could more often provide a system of points-based rebates to encourage consumers to buy through online systems. For example, a customer would accumulate points more frequently and then use them to partly cover the price of product. Organizations, by providing consumers with a discount system, would encourage them to purchase more often on their online systems.

Summarizing the results of this research it is possible to maintain that the information systems in the tourism and leisure sector allow users to participate in service delivery, build packages, and form the desired products while the sector organizations will be able to free up their employees swapping them for other activities, and discover new breakthrough opportunities in the tourism market.

Conclusion

1. Analysis of scientific literature revealed that the tourism and leisure industry requires the application of the most diverse information systems, ranging from widely used systems for working with electronic tables, text and databases to the use of specialized programs that provide automated work for individual tourist companies. Tourism and leisure organizations use various information systems such as reservation systems, the Internet, satellite navigation systems, electronic payment systems which create an efficient functioning of the tourism services sector and prospects for its development.

2. After analyzing consumers` use of information systems and buying tourism and leisure products, it was observed that the latest information technologies enable the user to quickly create an individual „tourism product". In addition, the application of information technology systems creates added value for tourism sector organizations and enhances their competitive edge. The results of the research

revealed that electronic payment, reservation systems and the Internet satisfy consumers' individual needs in the tourism and leisure sector the most. However, the study also revealed some shortcomings in the application of new information systems from the point of view of consumers. It is found that there is a lack of 24/7consultation in cyberspace, limited accessability of some payment cards, and insufficiency of system functionality. All of these reduce consumers` ability and satisfaction of their requirements when choosing tourism and leisure products.

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