The Impact of Information Technology and Software Tools on Improvement of Business of Tourism Sector in the Sarajevo Canton

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Abstract: *The Internet is undoubtedly the world's most important social phenomenon, which today is a matter of great interest and research. According to statistics on Internet use, in 2019 the number of Internet users in the world was more than 4 billion. Rise of the Internet, as well as the development of other information and communication technologies, changed significantly modern ways of communication and business in the tourism sector. The analysis of tourist demand arising from the use of information and communication technologies, software, the Internet and social networks is becoming a key element in forecasting future values given the increasingly present new trends based on the use of information and communication technologies.*

This paper aims to present the impact of IT and software tools on improving the business of the tourism sector in Sarajevo Canton.

1. INTRODUCTION

Due to the strong development of information and communication technologies (ICT) (Pradhan et al., 2021; Fernández-Portillo et al., 2020; Doong & Ho, 2012), the tourism sector has undergone several significant changes in the last few decades (Kaushal & Srivastava, 2021). The technological revolution caused by the development of the Internet has dramatically changed the market conditions of all tourism organizations. ICT is evolving rapidly, providing new tools for redirecting and developing tourism (Masaki et al., 2021; Ali & Frew, 2010).

Information technology (IT) has become a strategic weapon for the identification, presentation, distribution of tourism products and achieving sustainable competitive advantage. Tourism management is the most important candidate for using IT with the need for gathering information in large quantities and diffusion of tourism management (Inkson & Minnaert, 2018).

As we are in the information age today, it is believed that competition in the information and communication technology market has led to the accelerated development of tourism, and information and communication technologies themselves offer travel agencies opportunities to build quality relationships with their clients and partners at lower costs. Sarajevo Canton is increasingly using information and communication technologies that affect the organizational structure, culture and interpersonal relationships within travel agencies.

This paper confirms the assumption that the use of the Internet (as an important part of information and communication technology) increases the demand for tourism products in Sarajevo Canton. On the other hand, it gave tourist entities a better insight into the needs and wishes of guests.

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2. INFORMATION TECHNOLOGIES AND SOFTWARE TOOLS IN THE BUSINESS OF THE TOURISM SECTOR

The World Economic Outlook Update (IMF, 2021, p1) predicts the global economy will grow 5.5 percent in 2021 and 4.2 percent in 2022 (Jaganjac et al., 2021).

In order to highlight the essence of competitiveness in the field of tourism, the concept of tourism should first be taken into consideration, taking into account the fact that, as a phenomenon, it depends on a very wide range of factors and significantly influences the direction of the overall development of space and society in general. Tourism is a very complex economic sector, whose development has a crucial impact on the progress and prosperity of a national economy (Ilić & Nikolić, 2017).

The development and advancement of information technology has had a major impact on tourism. Internet technology is important as it can drive security and effectiveness (https://www.e-spin-corp.com/impact-information-technology-on-tourism-and-hospitality, September 15, 2021).

The use of information and communication technologies has the resource to transform the market from local to global and in crisis situations companies may have a better chance of surviving and improving their market position, especially in tourism where the number of competitors in the market increases almost daily (Baldigara et al., 2013).

Tourism has become a key branch of the economy in the world economy. With the advent of the Internet, there have been strong changes in tourism, as follows (Croes et al., 2021; Calero & Turner, 2020):
- the disappearance of intermediaries was encouraged,
- new intermediaries are emerging on the Internet, and traditional intermediaries have to change roles,
- direct access to end users, i.e. consumers, is provided,
- instant transmission of reliable information is ensured,
- it is possible to display the state of business in real time,
- organizational and distribution costs are reduced,
- convenience and flexibility are increased (Zekanović – Korona, Klarin, 2012).

Despite major changes in the business of travel agencies affected by information and communication technology, travel agencies are responsible for 77% of the total booking for cruising, 55% for booking air transport and 73% for booking travel packages or arrangements, which indicates that travel agencies continue to operate successfully (Buhalis, 2020).

According to market experts, the application of information and communication technology has improved communication, adaptability, productivity and speed of business deals and marketing activities. The biggest change that travel agencies have experienced under the influence of information and communication technology is the speed and availability of communication with clients precisely because of the availability of various high - tech devices. Technology will constantly grow and develop, but the success of travel agencies in the future will be reflected in the fact that it is developing towards the IT sector and including it in its future business.

Technology is revolutionizing the tourism sector and determining the strategy and competitiveness of tourism organizations and destinations (Abdulla et al., 2020). Many organizations were

predicted to be forced to transform their management and marketing strategies and redesign implementation practices to benefit from changes in technology. Technological innovations are a catalyst for development and competitiveness in tourism.

Technologies such as artificial intelligence, robotics, cashless payment, augmented (AR) or virtual (VR) reality are already used to a greater or lesser extent in various industries and countries around the world, bringing about changes that change the business of travel agencies. Smartphones and mobile devices have changed the way people communicate and interact, and therefore towards travel services. All providers, intermediaries and users of tourism services become interconnected dynamically, which ultimately creates added value for all those connected within that ecosystem (Buhalis, 2020).

In addition to the clear benefits of ICT implementation in tourism, there are negative effects such as protection of personal data and privacy, inefficient systems and system scheduling, digital isolation of a certain percentage of the population, loss of knowledge and information, endangering certain languages and cultures, lack of personal communication and even survival of the human species.

Innovations can sometimes be ahead of their time, as in the example of robotic hotels in Japan where they had to withdraw most of their robots from use due to high cost and unpopularity with users. This points to the need for further research into the advantages and disadvantages of personal and computer interaction, as well as ethical and personal data protection issues. It is very important to actively include advanced technology in all phases of performing the intermediary and tourist activity of the travel agency itself, in order to make the business more efficient and effective.

External factors are those that are outside the organization and include factors such as economic, political - legal, social, technological and environmental (Gavrić et al., 2020).

What is also important is that human resources should certainly be exposed to the greatest possible influence of information and communication technology, because in this way they expand their knowledge, gain experience and the work of the travel agency can be significantly improved.

2.1. Investing in information and communication technology

Business-oriented people often have a completely different vision of what information technology represents for a company and how information technology can be fully utilized. On the other hand, there is management in companies which in many cases does not know enough about modern information technologies, their possibilities and limitations.

People who are oriented towards information technology often do not have enough sense for the everyday needs that arise in business, the needs related to customers and users who are oriented to business processes.

Today, investing in information technology represents the largest part of every company's investment (Tang et al., 2020). In a business where the importance of information technology is growing rapidly, it represents a constant presence in modern business, and information

technology is being given increasing importance, especially when it comes to investing. By investing in information technologies, a certain competitive advantage can be gained, through which the strongest competition that appears on the modern market can be greatly suppressed.

Information and communication technology has changed the operational and strategic management of tourism in at least four important segments:
* marketing,
* strategic management,
* Internet security,
* web design and services provided to guests (Law et al., 2013).

Without successful digital marketing, today's tourism can practically not function. Social networks are an indispensable tool for promotion, and today almost 80% of hotel guests use the Internet to search for hotels, while less than 5% of them use travel agencies. Also, according to research, guests believe that the Internet is the best source of cheap arrangements.

It is estimated that Facebook currently stores about 300 PB of data. The number of new comments and likes on Facebook is around 3 billion a day. The number of video views on YouTube exceeds one billion per day. Twitter users post over 500 million tweets a day. All this data needs to be stored somewhere and enabled to be processed quickly and easily (Vinčević & Zajmović, 2021).

Table 1. Data on new actions on the Internet in one second

Data source	Number of actions in 1 sec	Data type
Instagram	754	New photos
Skype	2367	Calls
Twitter	7428	Tweets sent
Google	57511	Searched queries
YouTube	136677	Videos viewed
Email	2544176	Sent emails

Source: Vinčević & Zajmović, 2021

Today, the most widespread method for making business decisions for investing in information technology is certainly cost-benefit analysis. The biggest problem with this analysis is what benefits can be directly measurable. This makes it almost impossible to accurately quantify any business investment decision to the end (Alaei, et al., 2017).

Criteria for evaluation of investment projects in information technology can be:
* Net present value (NPV) = benefit in a given period - discounted costs in a given period,
* Internal rate of return (IRR) = NPV / discounted costs,
* Return on investment - usually in addition to the two criteria mentioned.

In order to properly analyze the investment made in information technology, managers must have information about the total value of ownership that information technology can represent. In addition to cost analysis, it is certainly extremely important to analyze the qualitative advantages and benefits that occur in the company when investing in information technology. As the increasing complexity of information technology occurs today, there are a number of situations in which it is almost impossible to predict the long-term effects of any information technology.

There are some definitions that set out common principles shared by companies with highly efficient use of information technology:

- Information technology needs to be done as a business-driven line activity;
- Information technology is the area of the greatest management that occurs in a company;
- Decisions related to information technology and funds must be made on the basis of the produced activity;
- Simplicity and flexibility need to be introduced in the technological environment;
- Continuous annual improvements in operational productivity and efficiency need to be introduced;
- It is necessary to build business-smart information organizational departments in the company (Law, et al., 2013).

What is certainly common is that it is necessary to analyze business needs and analyze the opportunities that information technology provides in solving everyday business processes and problems.

The rapid development of the Internet, information technology and e-business certainly adds even more complexity when managing information technology in companies, but these elements do not change the facts that are becoming increasingly important for the successful operation of modern companies (Bayram, 2020).

2.2. The impact of information and communication technology on the business of modern travel agencies

Today's sophisticated technology only accelerates the dive into the already existing information society which is part of the economic reality, and in which information and knowledge, as practically usable, are the decisive factor in economic and social life. The new information technology „as a high technology whose application enabled the massification of material production, the formation of the global economy", did not create a new information society (Baletić, 1995).

Information and Communication Technology (ICT) has changed the global business environment through a wide range of tools, methodologies and functions, facilitating the strategic management and supporting firms to achieve a long-term competitive advantage (Nikoli & Lazakidou, 2019).

Information and communication technology „enables the transmission and use of all types of information and is the most natural generic technology today, and the foundation of the economy of 21st-century society. Bearing in mind the need for a successful business to be based on knowledge and experience, whose assumptions are an innovative attitude to problem-solving, and the premise for fast and reliable obtaining of information in digital form (transformation of analog information into digital), it is logical to argue that institutions, economic activities and possible relationships between companies take on the characteristics of the virtual.

The discrepancy between the temporal and spatial dimension of tourist supply and demand gives additional responsibility to intermediaries regarding the reliability of the quality of services they guarantee, contracting services with selected service providers in the destination, whose integrated content of services will be through the positive experience of tourists. "It pays off in the long run for all participants in this process. Increasing accountability reduces risk" (Cleary & Malleret, 2006).

The term „high tech to high touch" gets its true meaning here by having an insight into the immateriality of the service and the experience provided by the space in which it is simultaneously produced and consumed. It has been proven that the positive experience that a tourist has experienced in the recent past related to the quality of the offered tourist product or simply service or even recommendation (information), influences positive aspirations and trust in relation to the product of a particular subject, thus strengthening its reputation and image (image, i.e. idea of it).

By investing time and money in the much desired experience in the destination and due to the time lag from the moment of purchase to the moment of realization, uncertainty increases for the tourist, and thus tension and emotional criticism in relation to the quality of service in the tourist destination. Information and communication progress certainly affects the competitiveness of subjects and emphasizes „intolerance" in relation to the length and duration of the dialogue in the form of shortening the time required to respond and adapt to the increasingly demanding client (Cleary & Malleret, 2006).

In the search for greater profitability and taking on a greater global market advantage in the last three decades, „many technologies are continuously shaped, improved and changed, including reservation systems, online, interactive, video and computer reservation systems."

The following are examples of ICT technology that have contributed to travel agencies making a significant step forward in their business and enabling them to keep up with rapidly growing new tourism trends. Here we primarily mean the use of the Internet and everything around it.

Use of the World Wide Web (WWW) system: As stated, this system allows the design of Web pages that contain various types of content, and are located on web servers and are available to all users of web systems in the world.

In the travel agency WWW system is used in several ways:
- By creating its own website and putting it on the network, the agency presents itself to potential users. On the page, it gives them information about the narrow field of tourism in which it is engaged, the services it offers, previous references. Such a site also serves to promote the agency itself, and it must be attractive so that in the "forest of agencies" that offer similar services, the customer chooses it. That is why web design has become a specialty, an occupation of some IT professionals.
- By reviewing Web sites that present interesting tourist destinations and various tourist boards online, then a Web site from accommodation, transport service providers… The agency selects destinations to offer to users, such as accommodation, entertainment, transportation, learning services. The fact that Booking.com has a database of more than 660,000 hotels worldwide and Airbnb more than a million accommodation units in 191 countries, in more than 34,000 cities, speaks about the volume of big numbers in databases.

The World Wide Web has pushed all boundaries and turned out to be a unique bridge between tourist supply and demand that easily, quickly and continuously, bidirectionally exchanges information, regardless of geographical distance and language barriers. It is a fair relationship: one-on-one communication, as opposed to traditional marketing communication using print and electronic media („one-to-many").

More precisely, on the Internet, the consumer chooses when and what information wants to access. The customer is not just a passive recipient of a message prepared in advance by the agency, such as in an advertisement on television or radio.

Furthermore, in addition to this significant improvement in customer relations for the agency, it is especially important that the ratio of the scope and price of the promotional message on the Website is far more favorable than in advertising in print or electronic media (Dzia-Uddin et al., 2018).

There is no limit to the number of letters and seconds. The costs of advertising through the Website are reduced to the cost of creating the site itself and are negligible in relation to the fact that the agency is present online in the Internet space, so it can be said that advertising through the Website significantly reduces the agency's operating costs.

The advantage of this „Internet presence" is that the message is addressed to the global, unlimited market, i.e. to everyone in the world who uses the Internet for 24 hours. The problem of time zones is eliminated, while the user connects to the network and opens the Web page when it suits him.

The results of such promotional activities are easier to measure than before - from the simple fact that an agency can track how many users have opened its website, to the faster response of users to messages from the website. Today, the tourism sector has to pay a lot of attention to the content generated by the tourists themselves because this feedback has an almost crucial influence in creating the offer. The reasons why users give more importance to the ratings of other users are:
- quality of assessment and suitability of such comments,
- risk reduction,
- objectivity of such assessments,
- getting recommendations,
- price optimization (Law et al., 2013).

Due to the small volume of business and high financial costs that this technology required in the very beginning, travel agencies became involved in this process relatively late, only in the 1990s. Interest and need for use are growing, especially in Europe, which is evident by the inclusion of already existing reservation systems or service providers (airlines and hotel chains) or integrated systems with multiple input-output connections of unified service providers.

Today, prominent communication technologies represent a business framework that is especially supported by European travel agencies. Therefore, according to Rayman and Molina, modern information technology will contribute to:
- reduction of transaction costs,
- realization of e-commerce by increasing the speed of exchange of goods for mutual benefit (Rayman et al., 2001).

The efficiency of the business of tourist intermediaries is based on the rapid identification of the wishes of tourists, in adapting the content and manner of their offer to the requirements of tourists, and in adapting communication (Zhang et al., 2020). For tourists, the availability of information plays a very important role when making a travel decision, with the application of ICT not only reducing uncertainty and potential risk, but further increasing the quality of travel.

According to many authors, tourism is considered an „information-rich industry". This phenomenon is interwoven with the value of information from the initial idea to visit the destination to valuable information related to travel decisions, technical reservations, payments, whereby the overall value of the highlighted activities will be valorized by going on a trip and experiencing it (Khan, 2018).

Direct and friendly contact with employees in tourism in general cannot be underestimated, and they instill confidence in the customer that they will receive the requested service. The classic elements of the marketing mix (product, price, promotion and distribution) are also influenced by modern information and communication technology. The application of ICT has enabled the development of electronic distribution channels such as global distribution systems (GDS), central reservation systems (CRS) or online travel agencies (OTA), which are characterized by a high degree of flexibility and allow connecting tourism supply and demand globally.

The application of ICT in promotion has enabled the personalization of promotional messages, a greater degree of flexibility in promotional activities, a greater degree of interaction with end users, better public relations and improved care for end users (Mulyana et al., 2020).

The application of ICT enables the creation of prices („dynamic pricing"), as well as the creation of products („dynamic packaging") in real time. In the promotional activities of tourist companies and destinations, Internet sites are irreplaceable today. However, unlike the situation ten years ago, when websites mostly served as electronic versions of printed promotional materials, today they have a whole range of new functionality options. The most important feature of modern Internet sites in the function of tourist promotion is the intensive use of multimedia content and the high degree of interactivity achieved through the implementation of the so-called WEB 2.035 functionality.

WEB 2.0, in addition to a high degree of interactivity, is characterized by openness, user cooperation and the ability of end users to generate content that is published on Internet sites (so-called UGC - User Generated Content).

The influence of ICT is crucial, that the competitive work of a modern travel agency without the strong support of ICT technologies would not be possible at all. It has been shown that operating costs have been reduced, with less modern technologies by reducing the number of employees and required branches, reducing office costs (telephony, photocopying ...) and advertising costs.

2.3. Importance of electronic reservation systems for travel agencies

Nowadays, when tourists are limited in time and physically often dislocated from travel agencies, the advantages of new technologies are contained in the possibilities of direct communication of users, in overcoming temporal and spatial obstacles by encouraging efficiency contained in direct contact with service providers in the destination (Nikoli & Lazakidou, 2019).

When it comes to organizing travel through a travel agency, the services incorporated in the travel arrangement are used, while the advantages of the manner and conditions of using such related services in a single tourist product are not negligible (Mihajlović, 2013).

The best known and most used global online booking systems are:
- Booking.com,
- TripAdvisor.com,
- Expedia.com.

Among Sarajevo's online reservation systems, https://sarajevo.travel/ba stands out the most (https://sarajevo.travel/ba/gdje-odsjesti/hoteli). A tourist, resource client agency, planning a trip or vacation today via the Internet can view the entire offer, as well as the offer of the competition, make a reservation, read what to expect from the hotel, where he/she can eat and drink and finally pay online. All this without seeing or directly contacting anyone from the agency. When agencies established close contact with consumers via the Internet, they no longer need so many proverbs. A large part of the work can be done from one place in the new conditions, so the agency can close most branches and thus reduce operating costs (labor, rent of space, office equipment and materials).

For the rest, the necessary part of the staff is open to ideas without borders and creativity in solving the demands of never more numerous, but also never more demanding clients. Yet large international agencies, given global coverage, retain branches in key cities as customer service. For example, Booking.com has over 70 networked branches, on all continents.

In order to place the object on the Booking.com page, in order to be available for rent, the landlord must, guided by a very well-programmed and set protocol, enter the required data and provide answers to a number of logical questions. Thus, with a series of photographs of the facility he intends to rent, the landlord gives the interested user, the potential guest, information needed to decide whether or not he or she wants to rent the offered accommodation unit.

In the process of registration of the object, the landlord receives a number of useful tips, such as how to prepare and in what standard the object for rent and the like. On the other hand, the agency attracts the guest with its pages because they are at the same time attractive, and conceived clearly and functionally, which enables the guest a pleasant search and long-term planning.

For ease of search, registered facilities are classified according to several criteria: apartments, cottages, villas, the most attractive destinations, etc. with a number of standardized information such as location, distance from the sea and beach, proximity to other facilities, parking, etc. and also rental prices.

If the guest decides to rent one of the offered facilities, the reservation performs the following steps of a simple protocol. He/she receives a booking confirmation from the agency, and the landlord receives a notification about the confirmation of the appointment. The guest pays for the use of the rented accommodation unit electronically to the agency, and the agency pays the landlord, retaining his commission. A very important part of the Internet communication between the guest, the agency and the landlord is the evaluation of the satisfaction of the guest, who is obliged to write a review after leaving the accommodation unit:
- assessment of their satisfaction with the consumed,
- assessment of the ratio between the announced and actual quality of service, equipment and cleanliness of the facility,
- kindness of the host when receiving and leaving guests,
- and according to several given criteria, to give a numerical rating of satisfaction from 1 - 10.

Since the reviews are public and go with each accommodation unit and are available to new interested parties, this has a very encouraging effect on renters to adhere to high standards of equipment of accommodation units and quality of service, to eliminate any omissions. In addition, the agency automatically updates the position of the accommodation unit on offer: at the top of the offer pages are the best rated ones. All of the above takes place with the help of ICT technology, without any physical contact of the agency with renters or guests at minimal cost to the agency. At the same time, we should not forget the sociological and psychological aspects of the previously described procedure - personal human contact has completely disappeared.

ICT allows the agency to simultaneously mediate in renting a huge number of facilities with a minimum of errors. The agency is constantly updating its databases on rental facilities and users, and they are used for all types of marketing analysis. Considering the amount of the commission of 25% and the large traffic, it can be concluded that this is a very lucrative business, which on the other hand is constantly looking for new investments in the most modern equipment. The development of ICT affects the entire tourism system and, at the same time, results in changes on the side of the tourist offer as well as on the side of the tourist demand (Rayman et al., 2001).

Thanks to the opportunities provided by ICT, tourists today are able to get more information about the destination and have more freedom of choice when choosing a destination. In this way, the disparity between the expectations of tourists and the real tourist product is reduced. Based on the information provided by ICT, tourist destinations as well as tourist companies can react quickly to changes in the tourist market by adapting existing tourist products and creating new specialized tourist products, and are also able to promote and distribute these products more efficiently.

In order to optimally adjust the reservation system, travel agencies must take into account various parameters:
• Connecting and setting up automatic updates of tourist products and their descriptions. Data may include name, brief description, product category, location, images, videos, and the like.
• Setting the method of synchronization of available capacities and availability of tourist products and their prices.
• Adjusting the layout of the booking form and the data required for booking entry. This determines which data the agency collects when booking such as customer personal information, payment information and other necessary information.
• Setting notifications to all participants in the process: customers, agency, tourist product, etc.

Notifications must be short, clear and with the necessary information such as all details of the booking confirmation, cancellation procedures, next steps and all other necessary information. Online and integrated reservation systems have their advantages and some disadvantages.

Among the advantages are the constant availability of the system and the possibility of selling 24 hours a day, saving time and human resources, increasing the efficiency of the travel agency and customer feedback. Some of the disadvantages may be a slightly longer period of the system setup itself and additional training of workers for the maintenance, use and analysis of online system data (https://www.checkfront.com/how-to-setup-your-booking-system, September 15, 2021).

Electronic distribution channels often have additional functionalities that allow interaction between visitors and the exchange of their opinions on various aspects of staying in an accommodation facility. These interactive functionalities are very important because they represent one of the forms of promotion through oral recommendation („WOM - word of mouth"), which is one of the most effective and credible promotional activities. In addition to independent online booking systems, a very important electronic distribution channel for small tourism businesses can be their own websites.

Compared to online booking systems, owning websites has certain advantages and disadvantages. Their main advantage is the complete control of the owners over the content published on the website, which is not the case with the content published on the online reservation systems.

2.4. Use of applications and software solutions in the business of travel agencies

Due to the fact that today's work of travel agencies is especially based on modern information and communication technology, it is important to mention the leading applications that have definitely accelerated the way of agency business, especially in the segment of the reservation process. The leading applications used in the world and recently used in the tourism of Sarajevo Canton will be further defined.

Channel manager is a service provider that connects PMS (a facility management system used by travel agencies to manage prices and units) with online channels such as Booking.com. Channel manager allows automatic updating of prices, availability and reservations on several platforms/channels at once. If a travel agency does not use PMS in its regular business, some channel managers may assign it to travel agencies.

Caesar Booking Engine is also one of the intermediaries that allows travel agencies to receive instant bookings, directly from the website easily and securely. Access to the guest is very simple: the guest simply selects dates, accommodation units, enters their personal data and clicks Complete Booking - after which the reservation comes directly to the Caesar application and synchronizes with other portals such as Booking.com, Expedia and Airbnb.

Caesar Booking Engine offers various booking payment options through Booking Engine such as taking a deposit and free cancellation deadlines.

Also, it is important to mention the leading software for travel agencies that serves to run an unlimited number of apartments combined in one place - Megabrooker.com. The main features of this software are as follows:
- Software for travel agencies has only one reservation calendar for all accommodation units - keep all descriptions, pictures, prices and availability of accommodation in one place,
- Two-way synchronization - automatic synchronization (confirmations, cancellations, reservation modifications),
- Export calendars in iCal format - the ability to export calendars in iCal format to connect calendars with numerous web portals that support this form of integration,
- Instant update of information - without the possibility of overlapping reservations because all inquiries, cancellations, modifications of reservations are automatically updated.

Megabrooker.com also has special agency functions that serve to facilitate business, and they are as follows:

- Possibility to export prices to PDF price list;
- Multilingual setting of accommodation unit descriptions;
- Receive updates or cancellations of reservations and other modifications directly to one central e-mail;
- Multi-login user interface - the travel agency can independently provide renters with login information;
- „Masterfile" option - easier import of a large number of accommodation capacities both in MegaBooker and on online booking portals;
- Quick and easy filter - at any time the travel agency can have insight into absolutely all reservations and all possible modifications related to accommodation or renters, etc.

2.5. The impact of IT and software tools on the improvement of the tourism sector in Sarajevo Canton

Back in early 2019, the Los Angeles Times made a list of the top ten countries that should be visited in 2020. Bosnia and Herzegovina is also on the mentioned list, which is arranged in alphabetical order, more precisely, a visit to Sarajevo, Mostar and Medjugorje is recommended. Describing Sarajevo as an Olympic city, Mostar as a place of summer festival and popular for summer jumps from the Old Bridge, and Medjugorje as a popular destination for believers. It was also stressed that when visiting one of the countries, they consult the State Department website and check the security recommendations for that country.

One such recommendation is really a confirmation that Bosnia and Herzegovina has an extremely great potential in tourism, but it is still necessary to work on improving the promotion, and also the investment in infrastructure related to tourism and hospitality.

Global Analitika marked 2019 as a year in which one of the activities was the promotion of the tourist potential of Sarajevo Canton. Affordable tourism, i.e. tourism for all, enables everyone, without exceptions, to use the tourist services of Sarajevo Canton in a dignified manner.

Like other metropolises, many hotels, motels, travel agencies, and the tourism sector in general in Sarajevo Canton have recently been investing heavily in IT and software tools to improve their business. According to the survey, of the 25 respondents working in tourism, 17 have their own IT or use external staff. However, due to the complexity of technical expertise, many hotel companies choose to outsource at least part or all of their IT management.

Of the 25 respondents, as many as 20 believe that IT fully contributes to the promotion process, while 5 respondents believe that IT mainly contributes to the promotion process. None of the respondents thinks that IT does not contribute to the promotion process. However, when we look at the frequency of use of certain forms of promotion, we can point out that hotels most often use e-mail as a form of promotion (rating 4.2), followed by social networks (rating 3.7), while Google ads (rating 2.8) are used occasionally. When it comes to using their own websites, the majority of respondents or 21 (84%) believe that websites reduce the cost of promotion.

What is important to point out is that all hotels and travel agencies covered by this research, i.e. 100% of respondents answered that they use software to manage the booking process. However,

52% believe that the software for managing the reservation process fully contributes to the optimal use of accommodation capacity, while 48% state that this is not the case.

Large part of respondents, more precisely 84% of them use IT to network with partners. On the other hand, a total of 10 respondents, or 40% of respondents believe that the use of IT fully helps to achieve competitive advantage, 15 (60%) respondents believe that IT mainly helps to achieve competitive advantage.

The research was conducted where the factors that have an impact on tourism and its offer in Sarajevo Canton as information technologies were taken into account. Tourists were asked about the degree of satisfaction with information technologies in the tourist offer of Sarajevo Canton. The variables that were analyzed are the website, which means accessibility, information and up-to-dateness. Respondents assessed the extent to which they were satisfied with it, and whether it met their needs. Respondents also answered about its content and the extent to which it corresponds to the actual situation.

In addition to the mentioned variable, the surveyed tourists answered about the promotion through social networks, where they evaluated the same parameters as with the previous variable. Finally, the third independent variable, which is related exclusively to information technologies, is digital information and its accessibility for tourists.

The analysis of these three variables is based on the model of their impact on the tourist offer in Sarajevo Canton. The conclusion of this model will go in the direction of how important these variables are, and how much they affect the tourist offer in Sarajevo Canton, with precisely defined coefficients for each of them. In addition to the model, all three independent variables will be descriptively presented.

Table 2. Cronbach Alpha IT variables that affect the tourist offer in Sarajevo Canton

Financial indicators of bankruptcy proceedings	Cronbach Alpha
Website	0,682
Promotion on social networks	0,667
Digital information	0,814

Source: Author's processing

The degree of agreement of independent variables, since each indicator has more questions, was done separately, and what can be concluded is that the variables are digital information, highly compatible, while the website and promotion on social networks are somewhat less compatible between the sub-questions.

Table 3. Descriptive statistics

Financial indicators of bankruptcy proceedings	Mean	Std. Deviation	N
Website	2.7879	.68672	330
Promotion on social networks	2.5152	1.13312	330
Digital information	2.6061	.98436	330

Source: Author's processing

This model provides the best possible prediction of the value of the dependent variable based on the value of the independent variables if all assumptions are met. Based on the magnitude of the regression coefficients, we can conclude what is the relative influence or importance of each

independent variable, if these coefficients are converted into beta coefficients β. These coefficients are obtained when all values of variables are standardized.

The data from the previous table show the satisfaction of tourists with independent variables that reflect the state of the tourist offer in Sarajevo Canton. According to the analysis, it can be concluded that tourists are not satisfied with certain information technologies offered by Sarajevo Canton.

The average rating of the respondents is slightly above 2, for all three independent variables, on the offered scale from 1 to 5. The best ranked rating of all three offered is the website, which obviously provides some information, but far from necessary.

The following table analyzes the parameters of the model, which show the representativeness and reliability of the same. The model itself depends on the analyzed parameters, as well as its accuracy and reliability, in order to draw certain conclusions.

Table 4. Model parameters

Model Summary[b]									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.637[a]	.701	.571	0,4913	.309	37.954	5	324	.000	1.791

a. Predictors: (Constant), Website, Promotion on social networks, Digital information
b. Dependent Variable: Tourist satisfaction with IT technologies

Source: Author's processing

Analyzing the model, one can conclude an extremely high correlation between the variables. The coefficient of determination is 0.701, which is also the representativeness of the model, so this model explains 70.1% of the variables, while the rest is influenced by some factors unknown to us.

The adjusted coefficient of determination is slightly lower, and it is 0.571. The standard error of the model is significantly smaller than the standard deviation (0.4913 <1.44), which shows that this model reduces the deviation from the descriptive statistics. The Durbin - Watson test shows a small negative autocorrelation, which is 1,831, since this test value is approximately 2, so it can be concluded that the degree of autocorrelation is acceptable.

Table 5. ANOVA test model

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	217.862	5	40.322	27.954	.001[b]
	Residual	491.835	324	1.567		
	Total	709.697	329			

a. Dependent Variable: Tourist satisfaction with IT technologies
b. Predictors: (Constant), Website, Promotion on social networks, Digital information

Source: Author's processing

The quotient of the square and the average of the residuals give the empirical value of the F test. Based on the sample size and the empirical value of the F test, we obtain the significance value, which in the case of multiple regression is 0.001. ANOVA test tests dependent and independent variables in order to determine the relationship between the mentioned variables.

In this case, the analysis showed that there is a compatibility of dependent and independent variables, and that it is statistically significant. Based on the above, it can be concluded that these variables have a high degree of dependence. Therefore, the hypothesis is proven, i.e. there is a significant relationship between dependent and independent variables, and the coefficient of determination is significant, because $p = 0.001 < 0.05$.

Table 6. Model coefficients

	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.039	.516		4.224	.000		
	Website	.630	.119	.540	5.995	.001	.807	1.201
	Promotion on social networks	.712	.165	.617	9.987	.000	.812	1.214
	Digital information	.818	.071	.290	.807	.039	.887	1.036

a. Dependent Variable: Tourist satisfaction with IT technologies

Source: Author's processing

Based on the previous table, it can be concluded that the multiple regression model, i.e. the function looks like this:

$$Y = 2{,}039 + 0{,}63X_1 + 0{,}712X_2 + 0{,}818X_3$$

Where is:
X_1 – *Website,*
X_2 – *Promotion on social networks,*
X_3 – *Digital information.*

Based on the previous function of the multiple regression model, it can be concluded that the greatest impact on tourist satisfaction in Sarajevo Canton, and when it comes to information technology have digital information and the least impact of websites. According to the above, it can be concluded that the management of Sarajevo Canton should pay special attention to digital information, if it wants to improve information technology within the tourist offer, and thus increase tourist satisfaction and create conditions for increasing the number of visits in the future.
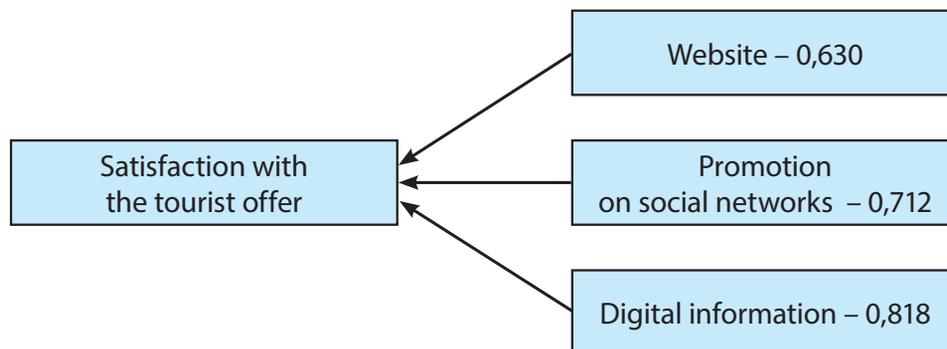

Figure 1. Model of the influence of independent variables on the dependent variable
Source: Author's processing

3. CONCLUSION

The presence of computers is one of the basic characteristics of today's modern business in tourism, and thus in the tourism sector of Sarajevo Canton. In business conditions, which are characterized by increasingly demanding customers, frequent and rapid changes in the market, intense competition, the application of new information technologies is of strategic importance to every hotel company, travel agency and the like.

Information technologies enable the exchange of knowledge, information, capital and services and enable the tourism sector to offer its services 24 hours a day, which is very important since they operate in a global market that does not know the borders of countries and different time zones.

Management must respond quickly and adequately if it wants to maintain its position in the market, and for this reason they are increasingly using information technology to better and more easily exchange information and resources between their departments and between them-selves and partners, manage human resources and choose those who need additional education, maintain and improve connections with clients and attract new clients, and make work more enjoyable, efficient and successful. One of the key factors with technology is the human factor because without it, technology alone does not bring much.

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