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**TOURISM
IN FUNCTION OF DEVELOPMENT
OF THE REPUBLIC OF SERBIA**

Tourism product as a factor of competitiveness of
the Serbian economy and experiences of other countries



**THEMATIC
PROCEEDINGS**

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**UNIVERSITY OF KRAGUJEVAC
FACULTY OF HOTEL MANAGEMENT
AND TOURISM IN VRNJAČKA BANJA**



THE IMPORTANCE OF ICT FOR THE COMPETITIVENESS OF TOURISM COMPANIES

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Abstract

Information and Communications Technologies (ICT) play a major role in tourism industry. The integration of ICT in tourism industry is essential for success of a tourism enterprise in the current global market. ICTs facilitate an individual to access the tourism products information from anywhere, any time. On the other side, tourism enterprises can also reach the targeted customers across the globe in a single click on the keypad after emergence of mobile computers, web technologies, etc. According to the research results, paper indicates the importance of ICT implementation for the improvement of competitiveness level of Serbian tourism sector. It also explains the gaps between tourism business and ICT influence and suggests measures to fill the gaps in Serbian tourism enterprises.

Key Words: information and communication technologies, development, competitiveness, data, knowledge

JEL classification: Z30, Z31

Introduction

The emergence of information and communication technologies as the key general purpose technology in the last 40 years affected almost every aspect of economic and social activities. The world has been experiencing positive effects from ICT on its economy, business growth, and living standards. Both developed and developing countries are trying to put in place right enabling conditions in order to tap all the innovation and

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growth opportunities offered by proper ICT implementation in different sectors of national economy and society.

Under this new development and work conditions in the world economy, tourism industry is also persuaded to accept and implement new business models and tools based on ICT in order to keep and improve its competitive potentials.

Global tourism industry in new digital environment

Tourism is reputed to be the world's largest industry with a global economic contribution (direct, indirect and induced) of almost 7.6 trillion U.S. dollars in 2016 (Statista, <https://www.statista.com/statistics/233223/travel-and-tourism--total-economic-contribution-worldwide/>). Its revenues support a significant proportion of the economies of many nations and it is one of the largest employers worldwide. Its contribution to gross national product, employment and regional development are well documented and, unlike many other sectors, it is forecast to grow in importance in the coming decades as leisure time increases.

The number of international tourist arrivals (overnight visitors) in 2016 increased by 4.0% to reach a total of 1,235 million worldwide. It was the sixth consecutive year of above-average growth in international tourism following the 2009 global economic crisis. International tourism receipts grew by 4.4% in real terms (taking into account exchange rate fluctuations and inflation) with total earnings in the destinations estimated at US\$ 1.260 billion worldwide in 2015 (€1.136 billion) (UNWTO, 2017). In order to keep the development momentum world tourism faces major challenges, which should be used as new business opportunities at the same time. The main challenges are (EC, https://ec.europa.eu/growth/sectors/tourism/policy-overview_en):

- **Security and safety** - environmental, political, and social security; safety of food and accommodation; and socio-cultural sustainability threats;
- **Economic competitiveness** - seasonality, regulatory and administrative burdens; tourism related taxation; difficulty of finding and keeping skilled staff;
- **Technological** – keeping up to date with IT developments caused by the globalization of information and advances in technology (IT tools for booking holidays, social media providing advice on tourism services, etc.)

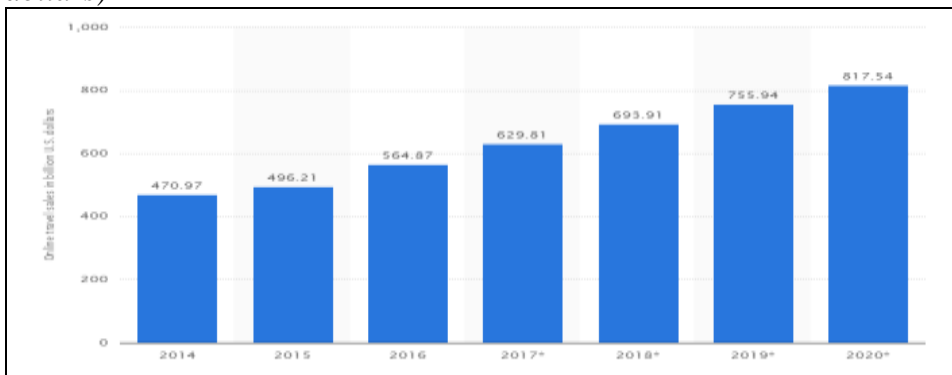
- **Markets and competition** - growing demand for customized experiences, new products, growing competition.

Technological challenge is very important for tourism industry. With more than 3 billion people online, implementation of ICT and presence in digital market has become of high importance for tourism organizations.

E-commerce in tourism industry

The fact that tourism is an information-intensive industry creates necessary preconditions for electronic commerce to play a significant role in the tourism services realization. Basic components of tourism product are information and confidence, two elements in the basement of every e-commerce transaction, making the transition of tourism as traditional service activity to e-tourism phase as a logical forward development step. That is, implementation of ICT in tourism industry can further improve the quality of tourism information and rise confidence of potential consumers, as basic competitive factors of tourism product. The online travel industry is primarily made up of travel e-commerce sites and review sites. Travel e-commerce sites specialize in the selling of travel products such as flights, hotels, and rental cars. These can be either purchased directly through a travel company’s website, such as the Lufthansa website, or through an online travel agency (OTA), such as Expedia. Travel review websites, such as TripAdvisor, allow travelers to post their experience of hotels, restaurants and other hospitality purchases online. These companies often generate revenue via advertisements on their sites (Statista, <https://www.statista.com/topics/2704/online-travel-market/>).

Figure 1: *Digital travel sales worldwide 2014 - 2020 (in billion U.S. dollars)*



Source: Statista, <https://www.statista.com/statistics/499694/forecast-of-online-travel-sales-worldwide/>

Global online sales value of air travel, hotels, and OTA`s cumulatively generated 564.9 billion U.S. dollars in 2015 (Figure 1). This figure was forecasted to grow to 817.5 billion U.S. dollars by 2020 (Statista, <https://www.statista.com/topics/2704/online-travel-market/>). On the top of the list of countries using the Internet for buying tourism products are developed countries. In 2015, the largest share of online travel sales were conducted in North America, the U.S. alone generated around 168 billion U.S. dollars through mobile and desktop travel sales. This figure was forecasted to grow annually until 2019. The European region was expected to tally one quarter of the world's online travel sales in 2016 and was the third largest online travel market globally. Online travel sales in Europe rose from 118 billion U.S. dollars in 2010 to 176 billion dollars in 2016 (Statista, <https://www.statista.com/statistics/247303/forecast-of-online-travel-sales-volume-in-europe/>)

Regional distribution of digital travel sales indicate the leading position of North America and Western Europe (Table 1). In 2015, North America accounted for 35.8 percent of the total global online travel sales. This figure was projected to drop to 28.9 percent, with the rising participation of Asia and Pacific region up to 38.5% of total by 2019.

Table 1: Distribution of digital travel sales worldwide from 2014 to 2019, shares in % by region

| Region | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|----------------------------|------|------|------|------|------|------|
| North America | 34 | 35.8 | 33.8 | 31.8 | 30.2 | 28.9 |
| Western Europe | 29.8 | 26.2 | 24.8 | 23.5 | 22.3 | 21.2 |
| Asia, Pacific | 24.7 | 28.4 | 31.5 | 34.3 | 36.3 | 38.5 |
| Latin America | 5.3 | 4.6 | 4.9 | 5.1 | 5.3 | 5.5 |
| Middle East and Africa | 4.3 | 3.8 | 3.9 | 4.1 | 4.4 | 4.7 |
| Central and Eastern Europe | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |

Source: Statista, <https://www.statista.com/statistics/499760/forecast-of-online-travel-sales-share-by-region/>

Tourism value chain in the Internet era

On the new electronic market, all participants in tourism value chain, i.e. government, tour operators, distributors and wholesalers, hotels, airlines and other transport operators, and tourists themselves, are changing their roles and activities. Each of these actors is affected in different way by

application of ICT in tourism industry and has to adapt to new way of doing business and acting in global tourism market. The assessment of the awareness, accessibility and use of this ICT potentials and the Internet services by different tourism stakeholders has shown that tourism stakeholders are using ICT differently, based on main factors, such as their competence, their size, and their relative position in the tourism value chain.

The old hierarchical value chain in tourism industry has become obsolete. The Internet with its interactive capabilities substantially disrupted the existed hierarchy of direction of information and payment that existed in so called pre-Internet phase. In the new Internet based tourism industry, tourist may book online any combination of tourism services with/through any combination of producers and inter/info-mediaries. This is the main change in B2C sector of tourism industry. On the other side, B2B dimension of tourism has increased significantly. The main reason is very intensive process of linking among proprietary booking systems of each producer and inter/info intermediary with one another. The final aim is that each player can in this way provide a much larger variety of tourism products.

B-to-B relation in the tourism sector is promoted by current tourist demand asking for complex tourism product that would include a consumer-customized itinerary of lodging, travel, and car rental and recreation activities. That is, to enable to potential customer to express a detailed tourism product preferences is useless, if the owner of the web page provides no more than an “Internet enabled” proprietary CRS (computer reservation system) and can not push content from other providers. As a global network with interactive capabilities, the Internet offers ideal solutions for multi-directional transfer of information in tourism industry. The Internet can be used to network global tourism capacity with unseen scope and detail. Although its reliability and security are sometimes questioned, the benefits of its outreach as a public network and the relatively low cost of access far outweigh such perceived disadvantages.

Empowerment of consumers to actively participate in the creation of tourism product

Tourism has closely been connected to progress of ICTs for over 30 years. The establishments of the Computer Reservation Systems (CRSs)

in the 1970s, Global Distribution Systems (GDSs) in the late 1980s and the commercial use of the Internet in the late 1990s have transformed operational and strategic practices dramatically in tourism (Buhalis, 2003; Buhalis & Law, 2008). The tourism industry at first focused on utilizing computerized systems (e.g. CRS, GDS) to increase efficiency in processing of internal information and managing distribution. Nowadays, the Internet and ICTs are relevant on all operative, structural, strategic and marketing levels to facilitate global interaction among touristic suppliers, intermediaries and consumers around the world (Buhalis & Law, 2008; Egger & Buhalis, 2008).

Besides internal and external perspective of ICT impact on business processes in tourism enterprises, it is important to note the ICT caused change in relationship between suppliers and users of tourism services. In this context, the Internet and its inherent interactivity has great importance, because consumer is empowered to find information quickly and precisely on any destination or activity that is in his/her interest, to get information quickly and easy at any time of the day, i.e. to get an instant answer to his/her query. Especial challenge for a customer is the possibility offered by modern tourism websites to create its own tourism product (when, where, which hotel, recreational activities, etc.) with the possibility to pay for this service online.

Tourism industry and Web 2.0 revolution

The Internet and its underlying technology is not a static phenomenon in history, but instead continue to change over time. After 2000, the so called concept Web 2.0 represents a further “revolution” that has impacted the way we communicate, work and conduct business. Web 2.0 is not really a technological advancement, since it relies on well-known and developed tools. Web 2.0 rather identifies the changes occurring in the ways software developers and people make and use the Web. The applications that facilitate interactive information sharing, collaboration and formation of virtual communities form today a large part of cyber users` daily activities (TOURISMLink, 2012).

As it happened for the first Internet revolution, Web 2.0 could not remain unnoticed in activities genetically bound to the human kind such as travel. The impact of Web 2.0 on tourism has been quite important and some scholars have started to use the term *tourism digital ecosystem* to mean the strict embeddedness of ICTs into all kinds of operations performed by

the industry (Nachira, 2005; Pollock, 2001). In parallel with social media revolution, the wide diffusion of mobile communication and mobile devices (mainly smartphones and tablets) has further modified the way people access the Internet and avail themselves of online resources, providing more opportunities to all online information providers. Two important developments for tourism industry are (TOURISMlink, 2012):

A) The rise of travel and tourism reservations through social networks' applications such as Facebook,

B) The rising numbers of world travelers forecasted to use a smartphone to find travel information and/or make reservations.

The growing importance of mobile technology is leading to a shift in power from technology players such as search engines like Google to smartphone manufacturers and developers (Euromonitor International, 2010). Business travelers were the first consumer group to adopt mobile travel technology due to the need to make last minute reservations. Leisure consumers are quickly catching up. Mobile applications offer various services from flight booking/check-in (BA), guidebooks (Lonely Planet), tourist information (Visit Lisbon) to building an itinerary (Trip It) (TOURISM link, 2012).

Following the success of the iPhone, smartphones are revolutionizing the travel industry thanks to geo localization services based on GPS technology. GPS-based travel applications impact travel behavior, favoring last-minute bookings via smartphones at tourist destination, leading to shorter booking windows. In 2016, more than 28 percent of the global population used a smartphone. Smartphone user penetration is rising with the forecasts for 2020 to reach **40% of total global population**, with mobile phones set to overtake PCs as the most common web access device worldwide (Statista, www.statista.com).

Motivation to offer tourism services online

Innovation and new information technologies have become determining factors for the competitiveness of the tourism industry and for strengthening exchanges with other sectors linked to it. Effective and high-speed ICT infrastructure and software applications in the tourism industry are crucial for tourism development as they enable direct relations with customers, increased profit margins and global reach. ICTs allow customer-management relations and supply chain management to be combined into a single source that facilitates a variety of operations -

product selection, ordering, fulfillment, tracking, payment and reporting to be performed with one easy-to-use tool. In this way ICTs ultimately cut costs by enabling the provider to be in a direct contact with the consumer and also impact employment through the need for required maintenance of ICT equipment (Bethapudi, 2013).

According to Buhalis and Jun (2011), the Internet and ICTs have enabled tourism organizations to develop their processes and adapt their management to take advantage of the emerging digital tools and mechanisms to:

- Increase their internal efficiency and manage their capacity and yields better,
 - Interact effectively with consumers and personalize the product,
 - Revolutionize tourism intermediation and increase the points of sale,
 - Empower consumers to communicate with other consumers,
 - Provide Location Based Services by incorporating data, content and multimedia information on Google Maps and Google Earth,
 - Support efficient cooperation between partners in the value system, and
 - Enhance the operational and geographic scope by offering strategic tools for global expansion.
-
- In the tourism industry ICT's are not equally applied:
 - In all functions – Although ICTs have a major effect on the methods of operation of the tourism industry, it has not affected all its functions equally. It is having the greatest impact on the marketing and distribution functions, while leaving others which need more human contact relatively untouched.
 - In all tourism sectors - Certain sectors, such as the airlines, have been keen adopters of technology, using it to help manage and streamline their operations and gain strategic advantage. Others, in particular the hotel sector, have been less enthusiastic, but are gradually waking up to the benefits which electronic distribution can bring;
 - By big tourism companies on one side and SMEs on the other - Large corporations have capital and human resources to transform their systems into a total network system; however, small and medium-sized tourism enterprises (SMEs) struggle to integrate the systems due to a shortage of financial sources. Consequently, SMEs are at a competitive disadvantage and find it increasingly difficult to maintain their position in the digital marketplace. Offering programs and

funding, governments need to support the integration of information society tools and services into all tourism activities, particularly those carried out by SMEs. There is a need to undertake awareness-raising about ICT and to start partnership initiatives with the aim to boost the competitiveness of small businesses in tourism sector, integrate them into global digital value chains, and improve their ability to create more jobs.

To take full advantage of the opportunities offered by ICT, each tourism actor needs to integrate ICT based services into his/her business environment. This means that every tourism company has to make real changes in its business structure parallel with connection, i.e. changes in internal business organization and processes as well as in relations with external actors (customers and business). To realize in practice all the benefits and advantages of ICT (lower cost, higher productivity, less working force, etc.), a company has to make complete organizational and business reengineering. To ensure a smooth transition from traditional business to the new networked economy, and to avoid internal tensions and disruption, tourism stakeholders must understand the deep nature of the transformation occurring and measure and follow its impact (Vidas-Bubanja & Bubanja, 2016).

Beside numerous benefits to individuals and organizations offered by ICT implementation, there are also limitations and barriers in utilizing the Internet and ICTs for tourism enterprises (Buhalis & Jun 2011). One of the most concerned technological barriers is a lack of global standards for quality, security, and reliability (Turban et al., 2008; Van Toorn, Bunker, Yee, & Smith, 2006). The lack of standards in technology and its applications eventually increases the cost of system integration for effective and efficient management in distribution, operation and communication worldwide.

Payment security and privacy concerns are one of the major non-technological barriers that prevent consumers from completing transactions online (Buhalis & Law, 2008). Business organizations in tourism industry must therefore pay more attention to protect themselves and their customers from losses due to cyber-crimes, such as auction fraud, vacation fraud, gaming fraud, spamming, identity theft and hacking booking details (e.g. credit card numbers and card-verification codes) (Buhalis & Law, 2008; Mills, Ismail, Werner, & Hackshaw, 2002).

Tourism industry in Serbia and the application of ICT technology

In its Strategy for economic development, Serbia positions tourism as a sector that can: 1) contribute to economic development of the country, 2) generate significant foreign exchange inflow and 3) hire additional work force. On the other hand, competition in the global tourism market is highly emphasized and many developing countries and countries in transition like Serbia are trying to offer their tourism services and position themselves on the market. It is therefore important for the domestic tourism industry to follow the trends in the global tourism industry and in particular to monitor the changes in the modern business environment in order to timely apply modern management tools and technologies and thus increase their competitive advantage in the global tourism market (Vidas-Bubanja, M., Popovčić-Avrić, S., 2016). In order to examine the level of Internet penetration and the presence of e-commerce transaction in tourism industry of Serbia, we should examine some basic statistics concerning ICT application in the whole Serbian economy (Table 2).

Implementation of ICT in Serbian economy requires a change in the domestic economic system in order to be able to support new business models based on knowledge intensive technologies. A necessary precondition for such an economic transformation of Serbia's national economy is to develop infrastructural resources, and each company has to adopt new organizational and business models based on ICT and to develop an educated workforce (Vidas-Bubanja, M. and Bubanja, I., 2016a). The number of the Internet users in the world raised significantly reaching 3.2 billion in 2015 (ITU, 2015). The Digital Agenda for Europe sets the target to increase regular Internet usage in member states from 60% to 75% by 2015, and Serbia is approaching that aim with the Internet penetration rate of 66% (RZS, 2015).

Table 2: *ICT implementation in Serbian economy (the average values of certain parameter for EU, in brackets)*

| | 2010. | 2015. |
|--|--------------|--------------|
| Internet use by individuals % | 40.9 (68) | 65.8 (79) |
| Households with Internet access at home, % | 39.0 (70) | 63.8 (83) |
| Enterprises with Internet access, % | 96.8 (94) | 99.1 (97) |
| Enterprises with WEB sites, % | 67.5 (67) | 75.2 (75) |
| % of individuals using the Internet for interaction with public authorities | - | 27.8 (46) |

| | | |
|--|--------------|-----------|
| % of individuals using the Internet for ordering goods or services | 6.1 (40) | 22.7 (53) |
| % of enterprises using the Internet for interaction with public authorities | 70.6 (87) | 94.5 (88) |
| % of enterprises receiving orders online (at least 1%) | 20.7 (-) | 22.9 (-) |
| % of enterprises purchasing online (at least 1%) | 40.1 (-) | 40.3 (-) |
| | 2014. | |
| % of enterprises using ERP | 16.2 (31) | |
| % of enterprises using CRM | 14.9 (20) | |
| % of enterprises using cloud services | 3.2 (32) | |

Source: *RZS, 2015 and EC, 2015.*

According to Serbian statistical office in 2015, 63.8% households in Serbia had the Internet access at home, and nearly 100% of enterprises used computer in their business and had the Internet access (RZS, 2015). Parameters relating to the application of digital connections for the e-commerce transactions or e-government services indicate the lagging of Serbia in these activities comparing to Europe and some neighbouring countries in the region. Serbia is missing the European Digital Agenda targets that 50% of EU citizens should buy online or use e-Government services in the same percentage by 2015 (EC, 2015). In 2015, 27.8% of Internet users in Serbia had online interactions with the Government, and the percentage is decreasing to 22.7% when analysing users who realise e-commerce transactions (RZS, 2015).

Concerning business sector in domestic economy, the realization of network transactions still is not on a high level. In 2015, 40.3% of enterprises perched products/services online, and only 22.9% of enterprises received orders by the Internet. Those domestic companies are trying to provide high speed connections with good bandwidth, and there were 98% enterprises in 2015 with broadband Internet connection. In the same year 94.5% of enterprises used e-government services. Domestic companies are only begging to use advantages of WEB 2.0 services, as 28.6% of enterprises use some of social networks for the purpose of their business. Domestic companies are lagging in value chain management processes as low percentage of companies use ERP and CRM software (16.2% and 14.9%, respectively). Cloud services pay only 9.2% of companies in 2015 which is an increase compared to 5.4% of companies in 2014 (RZS, 2015).

In line with other companies in Serbia, the majority of tourism enterprises are aware of the importance to use potentials of ICT and the Internet in order to keep and improve their competitive advantages and ensure presence in the modern global tourism market. The research undertaken in December 2016 based on the sample of 10 hotels, 5 tourist agencies and 5 carriers in Serbian tourism sector proved that all analyzed organizations have websites (Vidas-Bujanja & Popovčić-Avrić, 2016).

The websites of domestic hotels are usually in two languages - native and English, rarely in three (German or Italian) and they give information about hotel location, prices, other hotel accommodations and contents. Some hotels in higher categories use multimedia features in their presentations. Online reservation usually does not include the possibility to pay online, but only to get information about payment possibilities by using credit cards or cash. Hotel sites very rarely offer links to other tourism websites, preventing a hotel guest to reserve air ticket or rent car through hotel web site. This clearly indicates modest level of B2B communication development in domestic tourism sector. All analyzed hotels are present on the social networks, mostly on Facebook, but majority are present on LinkedIn, Twitter, Instagram, Google+, Pinterest and Youtube as well (Vidas-Bujanja & Popovčić-Avrić, 2016).

The visited domestic travel agencies have their web presentation containing information about offered travel arrangements in domestic or foreign destination. Tourists-consumers can get all the information concerning travel conditions on the Web, but still the reservation of complete tourist arrangement requires the visit to the agency. If there is possibility for online reservation, it refers to reservation of hotel lodging, or the purchase of transport tickets. E-mail contact is the most often offered communication solution. Higher degree of travel arrangement personalization in terms of participation of user in the creation of arrangements is still not possible (Vidas-Bujanja & Popovčić-Avrić, 2016)

From the analyzed carriers in tourism (Vidas-Bujanja & Popovčić-Avrić, 2016), Air Serbia and Lasta allow online booking and online payment of transport tickets. The complex situation in the Serbian Railways System is also reflected in the fact that this company does not allow its customers buying tickets online, but only the possibility of reservation by calling the Call Center. The lack of possibility for online booking and payment of transport tickets is observed in the case of smaller bus companies.

Online survey of ICT implementation in Serbian tourism industry

Motivation for online survey was found in three main facts: 1) the tourism industry in Serbia is in growing stage, 2) Serbian tourism industry has a high potential to attract domestic and international tourists, equipped with the number of attractive tourism destinations, 3) ICT implementation is an important factor in promoting, integrating and building brand loyalty in Serbian tourism.

The research study has been conducted by sending questionnaire online to 100 addresses of tourism organizations, travel agents, hotels, restaurants, resorts, professionals in tourism, travel and hospitality industry across Serbia. Limitation of the study refers to the relatively small sample size, the short time of the survey in just 3 weeks and a relatively low % of received answers (35%). The objectives of the study were:

6. To identify the role of ICT in tourism industry;
7. To find the gaps in level of usage of ICT in tourism industry in Serbia;
8. To suggest measures to improve the competitiveness and profitability of Serbian tourism industry by implementing ICTs.

Data Representation and Interpretation

The online survey had 15 questions and in 35 received questionnaires respondents expressed the following views.

Table 3: *Questions and answers from the questionnaires*

| Question | Answer |
|---|---|
| New technologies with website online presence will increase your business potentials | 95.2%, agree 4.8% mainly agree |
| Is top level management in your organization included in the activities of ICT implementation in your business? | 90% yes 5% no 5% do not know |
| Internet media (Facebook, YouTube..) are equally important in the promotion of tourism organization as mass media (TV, radio, newspapers). | 66.7% agree 28.6% mainly agree 4.8% disagree |
| Web site optimization and the use of Google search engine as marketing promotion tool contribute to convey your tourism product to your tourism target group. | 95.5% agree 4.8% mainly agree |
| How many search engines is the Website of your company registered in? | 71.4% one 14.3% more than one 14.3% do not know |

| | |
|---|--|
| Introduction of online payment for tourism services will further improve your online sale. | 61.9% agree 28.6% mainly agree 9.5% do not know |
| Is there a possibility to realize online payment for your services on your website? | 57.1% yes 38.1% no 4.8 % do not know |
| Computerization contributes to a great extent in easy & fast functioning of tourism organization in all segments of tourism industry (for example online reservation system). | 95.2% agree 4.8% mainly agree |
| Is there a training for employees in your organization for the ICT implementation? | 57.1% yes 38.1% no 4.8 % do not know |
| Mobile communication is going to be the next high demand service that supports tourism offer in Serbia. | 52.4% agree 33.3% mainly agree 14.3% do not know |
| Is your site adjusted for mobile application? | 47.6% yes 38.1% no 4.8 % do not know |
| Model “one stop shop” offer of different tourism services (hotels rent-a car agencies, carriers, etc.) through the central websites directly to consumers could be efficiently used in domestic tourism industry. | 55% agree 25% mainly agree 20% do not know |
| Virtual tour contributes to rise of the number of visits to your tourism website and acts as an online marketing pull factor. | 76.2% agree 14.3% mainly agree 9.5% do not know |
| Is there a virtual tour on your website? | 70% yes 15% no 15 % do not know |
| Do you agree that your target tourist group readily accept ICT trends that would reduce classical tourist transaction and open the possibility for cost reduction in tourism services? | 47.6% agree 47.6% mainly agree 4.8% disagree |

Source: *Survey results.*

According to the research results, there is high awareness in Serbian tourism enterprises about potentials of ICT for the improvement of business processes and for the promotion of tourist offer as 95.2% of the respondents agreed that the updated website has the vital role in improvement of their business potential. In the 90% of surveyed tourism companies top level management is included in the activities of ICT

implementation. At the same time, 38.1% of the respondents confirm that there is no ICT training for employees in their tourism organizations.

More than a half of respondents (66.7%) agree that the Internet media (Facebook, YouTube...) are equally important in the promotion of tourism organization as mass media (TV, radio, newspapers), but 71.4% respondents confirm that website of their organization is registered in only one search engine. Almost all received answers (95.5%) were positive concerning the contribution of Web site optimization to marketing promotion and the use of Google search engine for the placement of tourism product to target tourist groups. Received answers also confirm that the current information and communications technologies in our tourism organizations should be updated and upgraded as, for example, 70% of the respondents state that there is no virtual tour on their websites, despite the agreement that virtual tour acts as an online marketing pull factor and can raise visit of one website.

Very high percentage of respondents (95.2%) agree that online reservation system is essential to sell the tourism products and services and that computerization contributes to a great extent to easy and fast functioning of tourism organization in all segments of tourism industry. Although 61.9% of the respondents agree that the online payment will further support online tourism transactions, 57.1% of the respondents confirm that there is no online payment service on their sites. At the same time, 55% of the respondents agree that the offer through the central websites may reduce the tourism intermediaries and that model "one stop shop" offer of different tourist services (hotels rent-a car agencies, carriers etc.) through the central websites directly to consumers could be efficiently used in domestic tourism industry.

Concerning rising importance of mobile communications, 52.4% of the responds agree that the role of mobile commerce is very high in tourism industry and that mobile communication is going to be the next high demand service that supports tourist offer in Serbia. Still, 38.1% of the respondents confirm that their websites are not adjusted for mobile application.

Among surveyed tourism companies there is a rising awareness that their target tourist group readily accepts ICT trends that would reduce classical tourist transaction and open the possibility for cost reduction in tourism services (47.6% of the respondents agree). Although Serbian tourism

industry is in constant progress concerning ICT implementation, the conducted survey indicated gaps that still exist (Survey results):

- Almost the half of Serbian tourism, travel and hospitality websites are not mobile ready;
- In 40% of tourism organizations, employees are not still trained in the usage of ICT;
- More than 60% of tourism organizations do not offer possibility for online payments of tourism services on their websites;
- Majority of enterprises are not integrated with the updated ICTs (like virtual tours), and
- Most of the enterprises (71.4%) register their website in only one search engine.

Survey results can be used for the creation of suggested strategy orientation for domestic tourism enterprises. For them, it is essential that the current information and communications technologies should be updated, upgraded and seamless integration both internally and externally should be done to improve their business operations. The following key factors for applying ICT in domestic tourism enterprises should be considered:

- Maintenance and updating of websites,
- ICT training for all levels of workers,
- Establishing electronic linkages between all related sectors,
- IT education and training for policy makers, managers and other players in the industry,
- Integration of various sectors like transport, lodge etc.,
- Technical Infrastructure,
- Human Infrastructure, which includes skilled people, vision and management,
- Legal Infrastructure,
- ICT culture,
- Creation and sustainability of ICT environment.

Important topics for Serbian tourism industry in the future should also be: digital marketing strategy; online reputation and the use of social media; m-tourism (use of smartphones throughout the entire customer experience).

Conclusion

The role of ICT in tourism industry cannot be underestimated and it is the crucial driving force in the current information driven society. E-tourism represents the *paradigm-shift* experienced in the tourism industry as a result of the adoption of ICTs and the Internet. It is evident that all best business practices have been transformed as a result and that the each stakeholder in the marketplace is going through a redefinition of their role and scope. Although ICTs can introduce great benefits, especially in efficiency, coordination, differentiation, and cost reduction, they are not a universal remedy and require a pervasive re-engineering of business processes, as well as strategic management vision and commitment in order to achieve their objectives.

By implementing ICTs, Serbian tourism organizations can improve both their business processes and market positioning with the following goals: 1) to promote the development of sustainable, responsible, and high-quality tourism in Serbia, 2) to increase tourism demand, 3) to improve the range of tourism products and services on offer, 4) to enhance tourism quality, sustainability, accessibility, skills, 5) to enhance the socio-economic knowledge base of the sector, 6) to stimulate competitiveness in the Serbian tourism sector, and 7) to promote Serbia as a unique destination.

The visibility and competitiveness of Serbian tourism industry in the global marketplace will increasingly be a function of the technologies and networks utilized to interact with individual and institutional customers. Unless the Serbian tourism sector utilizes the emergent ICTs, and develops a multi-channel and multi-platform strategy they will be unable to take full advantage of the emerging opportunities (Buhalis & Licata, 2002). It is safe to assume that only creative and innovative tourism enterprises which apply continues innovation in using intelligent e-tourism applications and adopt their processes accordingly will be able to achieve sustainable competitive advantages in the future.

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