

Velina Kazandzhieva / Hristina Santana

E-tourism: Definition, development and conceptual framework

Abstract

E-Tourism is an objective reality. Its dynamics and fast-accelerating development cause significant change to the traditional model of the classical tourism system. The creation of an e-tourism system is a logical sequence of the digitalization of all processes in the value chain of the travel and tourism industry. The purpose of the article is, based on analysis of the factors and conditions of emergence and development of e-tourism, to construct and perform a conceptual framework of an e-tourism system. Specialized sources of secondary data have been studied and conceptual basis of the theoretical framework has been defined. E-tourism is identified as a process and key characteristics of its nature have been performed. The following research methods and scientific approach have been applied: theoretical exploratory approach; systematic and chronological approach; systematic screening of academic publications; analysis and synthesis; content analysis. The result of the scientific research is construction of a conceptual (theoretical) framework of the e-tourism system, introducing basic groups (subsystems) and integrated components and identifying the specific interactions between them.

Key words: e-tourism; evolution; e-traveller; conceptual framework

Introduction

In an era of digital economy concepts as "e-business", "e-commerce", "e-marketing", "e-service" have emerged and easily been apprehended. They have constant occupation in the contemporary economical vocabulary and meaning. As a logical consequence, the concept of "e-tourism" has been added to the listed above categories. The combination with the letter "e" indicates the basical and leading cause of the dynamics and fast-accelerating development and a new set of economical outcomes to be performed, including the travel and tourism industry as well. The entire process has been executed through the "e"lectronic network – The Internet that enters in the form of a mediator, due to its unique characteristics, advantages and challenges.

European travellers continue to embrace digital channels, and especially mobile ones, for travel booking. In 2015, the European travel market increase is an estimated 5% over the previous year to € 264 billion. Growth in online travel continues to get ahead of the overall market. After the increase of 13% in 2015, the online travel market will grow at 8% per year (Sileo, 2016). In the same year, 47% of the travel revenue in Europe was booked online, compared to 45% in the US, 31% in Asia Pacific and 23% in Latin America. Germany, Italy and Spain lead the sustained growth in online adoption, because consumers in those countries avail of improved websites and mobile experiences from travel and tourism suppliers and OTAs (Online travel agencies). The data performed represents an increase in the range and dynamics of e-tourism and forecasts foresee acceleration in growth.

The purpose of the article is: *based on analysis of the factors and conditions of emergence and development of e-tourism to construct and perform a conceptual framework of an e-tourism system.* To accomplish

Velina Kazandzhieva, PhD, Assoc. Prof., Department of Economics and Organization of Tourism, University of Economics, Varna, Bulgaria; E-mail: velina_kaz@ue-varna.bg

Hristina Santana, PhD Student, Department of Economics and Organization of Tourism, University of Economics, Varna, Bulgaria; E-mail: hristina_santana@ue-varna.bg

the purpose, the following research tasks have been implemented: defining e-tourism and its nature, evolution tracking in e-tourism systems, analysis of the influential and leading factors in its growth.

The research regarding the role and significance of technology and Internet, having great impact on travel and tourism industry are widely spread in comparison to the scientific publications about e-tourism, which in turn are scarce as per scope and content. The current article is an attempt to transfer the focus on e-tourism, to convey and enrich further scientific information as well as adding conceptual knowledge on the topic.

Methodology

The authors of the publication present a qualitative research of e-tourism, based on theoretical exploratory approach. The choice of the exact approach is defined by the status and character of the secondary data with regard to the actual stage e-tourism is in progress, which in turn is the initial and basic subject of research in the scarce scientific publications. In the article, the authors apply the system approach in order to determine the basic elements, constituting e-tourism system, the internal and external links between them, having great impact on the system functioning. The authors of the publication combine and apply the following research methods:

- A thorough review of the current scientific publications in order to define the actual stage of the subject of research and to concentrate the knowledge about e-tourism;
- Systematic screening of academic journals, articles, books and conference proceedings, in order to apprehend the conditions of the environment in which e-tourism has been raised, the exact factors, that have influenced its process;
- Content analysis - to make an objective definition of the content of the academic publications and the conceptions' range, integrated in the e-tourism system. Based on the content analysis, the exact nature and several important features of e-tourism have been interpreted;
- Retrospective analysis and chronological approach – to make an objective follow up of the logically interconnected processes, events and actual facts, which brought to the introduction and development of e-tourism into e-tourism system;
- Analysis and synthesis: in order to discover and define the nature of e-tourism, identifying the factors and conditions which have stimulated its growth; determining the consequences and effects influencing the classical tourism system;
- Conceptual (theoretical) framework as means to define the structure of the e-tourism system and its development guideline. This method is applicable especially in studying events and processes that have not been thoroughly explored but are being dynamic and constantly expanding its range and significance.

Some of the important restrictions during the research are basically regarding the following: relatively small number of scientific publications in which e-tourism is stated as a direct and initial subject of research; probable subjectivity; language difficulties. In spite of all this, the current publication is completing already existing researches, aiming to fulfil the gap of the conceptual knowledge on e-tourism. The literature sources examined are mainly in English language and date back to the past two decades. The authors of the article consider the latter an option to give a better definition of e-tourism, by examining the evolution processes in its growth, elucidating the structure of the e-tourism system and determining the conceptual trends in its balanced and effective way in functioning.

Literature review

Contemporary tourism is often referred to as a "hybrid industry" due to its perfect combination and blending with Information and communication technologies (ICTs). This inevitably leads to the rise of e-tourism in the latest 90-ies of the previous century and its significant growth in the coming decades of the 21st century. The modern e-tourism system is quite dynamic and inevitably connected with the progress and development of ICTs (Pan, 2015). As a result, a diversified toolbox and services, supporting and supplying, accelerating the global interactions among the participating elements of the system come into action (Băbăiță, Ispas, Ghenescu & Hălălău, 2010). Travel and tourism industry are constantly changing and evolving due to the mergers and inoculation with the ICTs (Buhalis, 2003; O'Connor & Murphy, 2004; Buhalis & O'Connor, 2005; Law & Jogaratnam, 2005). The process of integration has been additionally stimulated by the great potential, unique characteristics and influence of the Internet in the recent decades (Buhalis & Law, 2008).

During the last two decades, there is an increase of scientific publications on e-tourism. But those, examining its nature and specifics as a phenomenon, upgrading the classical (traditional) tourism system are still scarce as per range and content. However, two researches of Dimitrios Buhalis can be determined as an exception to the statement above. The first one reveals the author's analysis on tourism in the context of dynamical interactions between ICTs and the components of the classical tourism system (Buhalis, 2003). It is a short report of e-tourism concept and e-tourism domains but is focused on the role of ICTs for strategic and operational management in the various sectors of tourism industry: e-airlines, e-hospitality, e-tour operators, e-travel agencies and e-destinations. The second research reveals e-tourism case studies (Buhalis & Egger, 2008). They present different groups of travel organizations that have integrated innovation technologies into their strategic and operational process in order to achieve: activity growth and transition to e-business; competition increase; better profitability. The publication examines the marketing and management issues of companies that have successfully implemented e-tourism solutions. However, focus is still on the ICTs.

Due to the integrant relationship and merging of the traditional tourism system's components and technology, it is of no wonder, that other publications explore the characteristics and development of e-tourism considering Buhalis's approach and research. Based on the fact, Andreea, Donici and Teofil (2012) identify direct connection between e-tourism and a couple of specific conceptions: Computer Reservation Systems, Global Distribution systems, Property Management Systems or Social media. Other authors examine e-tourism as of the position of Internet-based marketing method (Jonathan & Tarigan, 2016). They study the potential of using e-tourism and its effects on the development of travel and tourism industry. The quantitative evaluation underlying their publications has been delivered by constructing a multivariate regression model. The authors predict that by applying the empirical model, a growth of up to 40% in the tourism sector on a national scale can be achieved. And all this – as a result of the e-tourism development and stimulation.

Special attention is being adverted to the Pourfakhimi and Ying publication (2015), who based on the bibliometric analysis approaches explore evolution, structure and spectrum of e-tourism research. Leading report headlines and tendencies have been analysed as part of the ENTER conference proceedings from 1994-2014, held by the International Federation for IT and Travel & Tourism (IFITT). The authors indicate the foundation of scientific research dedicated to e-tourism is based on publications in two distinct headings: ICTs and tourism (or management). The first heading is prevailing in three out of the four stages of e-tourism research evolution. The last stage reveals authors' interest towards social media, smart and mobile systems in e-tourism. The second heading of the foundation marks

less publications on tourism. Research has been held by the supplier of tourist products/services (or supplier groups), the consumer and their behaviour patterns. Publications on hospitality and destination management prevail in the heading.

E-tourism system comprise electronic distribution of tourist information on services and products, exerting considerable influence upon contemporary consumer behaviour and his transition to e-tourist. Following the thread of thoughts, there are publications exploring factors and determinants, identifying consumers' apprehension and behaviour towards e-tourism services (Bajpai & Lee, 2015), as well as their protection while purchasing online travel services and products (Nedelea & Bălan, 2010). Generation of stimulus, information search and service quality influence consumer loyalty. The combination of factors affects and determines consumer behaviour and inclinations towards e-tourism services for travel planning purposes. Dimensions of e-travel service quality have been identified and key elements of which are: information quality; security; web site functionality; customer relationships; responsiveness (Ho & Lee, 2007). These elements and the interactions between them determine online customer satisfaction and loyalty intention.

The literature review acknowledged and validated Pourfakhimi and Ying (2015) assumptions and conclusions that academic publications comprise of researches on ICTs application and practices in the travel and tourism industry, and in turn, publications on e-tourism are predominantly scarce. In a digital era, the strategic vitality of tourism business is determined by its initial purpose to create value and utility to the customer. To accomplish such purpose, ICTs get into the position of a tool and Internet – the mediator of the process. Further publications on the topic should focus on e-tourism system and the opportunities digital tourism business is about to generate in the form of value and benefits to the stakeholders. Moreover, the latter is fundamental and generic purpose while implementing e-tourism strategies.

Nature and definition of e-tourism

The functioning of the contemporary tourism system and its future seem unthinkable without the technological innovation, corresponding to the current conditions of the business environment, being the result of the ICTs development and wide use of the Internet. In this way of speaking, while identifying the nature and definition of e-tourism, some authors present it as a form of ICTs application in the travel and tourism industry, a way to establish and maintain trade relationships (mainly sales) in the global network in order to supply goods and services to the end consumer (Condratov, 2013). E-tourism is an innovative method greatly influencing consumer behaviour. Its growth is basically determined by the interactions between the tourism organization, consumer and the government (Nedelea & Bălan, 2010).

One of the most cited definitions on the topic states: "e-tourism reflects the digitalization of all processes and value chains in the tourism, travel, hospitality and catering industries" (Buhalis, 2003, p. 76). The author suggests two distinct aspects while defining e-tourism: operational (tactical) and strategic. The operational plan proclaims that e-tourism comprises e-commerce ICTs in order to maximize its internal efficiency and the effectiveness of the travel and tourism companies. The main idea plots the suggestion that the use of technology is about to increase the effectiveness of the entire tourism system and to make the transition to the overall automation and digitalization of the process. The strategic aspect of the heading plots e-tourism as a thorough change, revolutionizing all business processes, the entire value chain, as well as the long-term interaction of the tourism organizations and the stakeholders concerned.

According to Șoavă and Bădică (2008) e-tourism is a phenomenon, incorporating both consumer and supplier of a certain tourist service. It can be identified as a service to the tourists, providing specialized websites and software which in turn: lessen the time in making a decision of travel; provides the exact choice of a destination and planning the journey itself; facilitates the process of reservation and additional services purchasing. The authors identify e-tourism as a part of e-commerce, comprising fast-developing technologies (communication and information ones), hospitality and management\marketing of strategic planning industry. The statement has been proclaimed by Andreea, Donici and Teofil (2012). The specific activities in e-tourism depend on traditional subjects of the tourism system that are greatly adhered to its development on e-platforms.

Băbăiță, Ispas, Ghenescu and Hălălău, (2010) define e-tourism as a phenomenon and an alternative form of business. The researchers mainly include in its content the stages of informing, reservation and payment, electronically done tourist services, due to the initiative and active participation by the customer. They add other stages as well (e-management, e-planning, etc.), that depend on the supplier of the tourist service. Jonathan and Tarigan (2016) consider e-tourism as an opportunity of economic stimulation to the travel and tourism industry at different levels. The authors define the concepts of "internet marketing" (e-marketing), "internet tourism" and "e-tourism" as equivalent ones.

Some of the important findings done by the definitions of e-tourism proposed are: a lack of common definition, recognized by the scholars; focus on certain aspects and headings of the phenomenon, but not on its integrality; designating the means (ICTs) and environment (Internet) for development, apart from its complexity and integral nature; immixturing with definitions such as Internet/e-commerce and restricting its range and content.

For the purpose of the current article and aiming to follow the preliminary assigned tasks, we *define e-tourism as a process of digitalization of all managerial and business functions, services and stages of the value chain of the tourism system in order to increase effectiveness in the interactions between tourism companies, consumers and public sector thus achieving competitive sustainability*. The process is being conveyed in all sectors of the travel and tourism industry, as well as in particular travel activities by the use of ICTs and Internet before, during and after consumption of travel and tourism products and services.

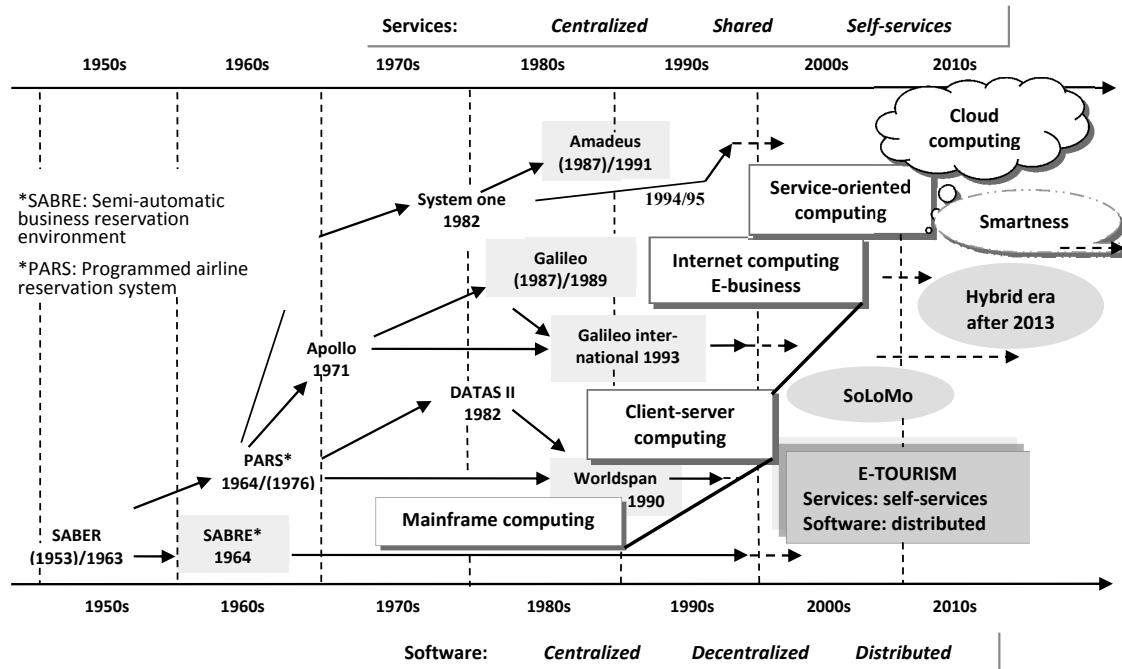
Evolution of the system of e-tourism

Both genesis and development of e-tourism are being indistinguishably interconnected with the first Computer Reservation Systems in travel and tourism industry; their transformation into Global Distribution Systems; popularity of travel intermediaries' websites; establishing of electronic systems for destination management; the advent of SoLoMo and Hybrid era at the beginning of 21st century. In order to comprehend the conditions and prerequisites, which brought e-tourism to life, a review of the evolution processes has been displayed. The changes have been examined and summarized for the period of last seven decades.

Computer reservation system or Central reservation system (CRSs) were developed by the airlines because of a critical need to find a solution to the problem of manual reservations. These early airline reservation systems later formed the backbone of the Global Distribution Systems (GDSs). The three main stages in the development of CRSs are: from manual to computerized reservations (1950 – 1974); automation of distribution and the true CRSs (1974 – 1984); the move from CRSs to GDSs (1984 – 1995). Figure 1 shows the start-ups and mergers within the GDS/CRS group, with four main systems in the last stage. Leading characteristics of the system software and services supplied have been displayed. CRS/GDS represent one of the major players in the e-tourism value chain, since they

provide the main – electronic link between huge supplier groups and the community of travel agents (Buhalis & Licata, 2002). Competitiveness between the mentioned above and the hotel companies increases, which inevitably leads to travel agencies' growth and strong *intermediation* in that period.

Figure 1
History of CRS/GDS and the advent of e-tourism



Source: Adapted from Werthner & Klein (1999); Njeguš (2016).

After 1995 the e-tourism landscape changed considerably, because of the growth of the Internet. Distribution started to move away from intermediation (GDSs) toward *disintermediation* through brand websites and booking engines (Sotiriadis & Fotiadis, 2017, p. 659). *Travel intermediaries' websites* convert into distribution channels for end consumers. They are online suppliers of products and services, profiting by the easy access to the GDSs database, position themselves as wide-ranged intermediaries on the e-tourism market. The industry starts recognizing them as Online Travel Agencies (OTAs), Internet Distribution Systems (IDSs) or Tourism e-Mediaries (TEMs).

In the beginning of the 21st century many websites offering variety of tourism services and information have been launched. The distribution process in e-tourism system is opened, highly competitive and complex. The launch of search engines (Google), brought about a new form of intermediation and many TEMs entered the e-tourism distribution. As a result, consumers are increasingly turning to a range of TEMs (mega-agencies) whose key selling point is choice in terms of offering multiple brands and also having an extensive product range at lowest rate, coupled with the price transparency on the Internet (O'Connor, 2003). Thus, offering a one-stop-travel-shop in today's dynamic e-tourism – a key opportunity for online travellers. New TEMs eliminate classical tourism intermediaries. There is a transition undertaken to a multichannel e-service platform for travel and tourism. The role and significance of the TEMs in e-tourism keep increasing due to the increase of travel information available and the trend of lessening the period of booking of travel services. Hotel operators started experiencing

a loss of control over the pricing of rooms to TEMs (Sotiriadis & Fotiadis, 2017). New intermediaries provide what is known as the information overload reduction function (Christodoulidou, Connolly & Brewer, 2010).

Destination Management Organizations (DMOs) form a hierarchical network with local tourist boards and close relationships to the local suppliers, with regional and national tourist boards. Normally, DMOs have to act on the behalf of all suppliers within a destination and are not engaged in the booking process but are being transformed into strategic leaders for destination development (Aleksandrov, 2014; Karadjova, 2014). Although ICTs and Internet offers a wide range of facilities, DMOs were rather slow to implement e-networks, due to their lack of financial resource, know-how, and heterogeneous ownership structure. In particular, e-business destination model is being launched by DMSs (Destination Management Systems). E-marketing offers DMOs a realistic potential to reach a far wider audience than ever before and to do that at a substantially lower cost (Estêvão, Carneiro & Teixeira, 2014, p. 66). The challenge for DMOs is to develop the infrastructure, the skill sets and the content to exploit the new opportunities through multiple channels. The best examples, which follow the visitor journey, starting with vacation ideas and planning through to promoting repeat visits, are: TISCover, Australia.com, VisitSingapore, MySwitzerland, VisitScotland, VisitFinland (WTO, 2007; Buhalis, 2003).

During the first decade of the XXI c. *disintermediation* in the e-tourism system enters a period of maturity due to the occurrence of digital advancements. Changes continue deepening, caused by the lack of monolith objectiveness in the travel and tourism system and the strong fragmented character intrinsic to it. The traditionally sophisticated distribution in tourism leads to greater intricacy of the e-tourism system (Kracht & Wang, 2009). The structure of the distribution channels gets more and more elaborate, and their number, in this contemporary digital era, mark significant increase. In the 2000 and on, due to the emergence and development, greater integration and implementation of technology, substantial transformations start to step in. Following the thread of thoughts, special attention is paid to the SoLoMo and Hybrid periods.

The SoLoMo era (Social-Local-Mobile, 2000 – 2012). The acronym has been initially used by John Doerr, a partner at the VC firm Kleiner Perkins and affirms its position to the mid of the marked period. The term indicates a contemporary marketing approach, able to integrate new trends in technological implementation. Doerr defines it as the "third wave" (after PC and Internet), combining the opportunities of the mobile platforms, social media and local commerce, the latest being symbolized by the significant growth of the Groupon model (online platform which connects customers to local businesses by offering them deals at low prices). The marketing approach, known as the customer engagement technology (CET), uses a combination of versatile SoLoMo applications (Apps), in order to simplify, accelerate and facilitate customer's reservation system (Kim & Connolly, 2012). After the 2011 the three platforms reach their maturity stage and start to complement each other's development, considering the e-tourism field development as well. The popularity of the social and travel community websites (TripAdvisor, Facebook) and the extensive use of smartphones disrupt the e-tourism system from the end of the 20th century.

In the current Hybrid era (after 2013), customers demonstrate strong affiliation to the online search. They use *multiple screens* (computers, tablets, smartphones) in all parts of the daytime, seeking for any kind of information on products and service of multiple providers. Before making final purchase decision, they visit more than 20 websites, which stimulates the providers of travel and tourism services to make investments on direct distribution channels and to offer customized and high-quality experience to the customer (Thakran & Verma, 2013). In general, in the hybrid era, the distribution process in

the e-tourism system is in the form of a multichannel mode (back to the disintermediation stage), but at the same time a process of *reintermediation* occurs. Online distribution channels are hybrid in nature, but the intermediaries, GDS-supported travel agents, TEMs, and search engines, included, still keep on possessing important share. The roles of the different intermediaries are unclear and not quite distinct, because they start a competition in regard to customer relationship initiatives. Online search keeps a major position and investments in search engine marketing reveals to be the best way for direct customer access. Customers are in a multiple use of search devices, which makes/stimulates providers to focus on a compatible supply of brand experience across various devices. The latest requires easy accessibility and liquid designed websites that provide the same look view across different devices (Ip, Law & Lee, 2011). New platforms mark their launch, which in turn facilitates multifaceted collaborations in the e-tourism system. Information sharing becomes more and more determinant in the relations with the business partners and customers. The role of the social media becomes more significant in the process of the best appropriate customers' results display (Google Reviews for hotels, Facebook nearby). Social media and peer-to-peer platforms transform tourists into travel information and content creators, peculiar type of tour guides.

The historical review of the evolution in the e-tourism systems reveals, its genesis and further development are a logical sequence to the technological innovation and upgrade in all systems: CRSs/GDSs, TEMs and DMOs. SoLoMo and hybrid periods, following digitalization, deepen and elaborate significantly the transformation of the e-tourism, especially in the way distribution of travel products and services is being processed. All preconditions causing positive influence to the e-tourism rise and growth have been formulated during a period of several decades: the second half of the 20th century and the first two decades of the 21st. Significant role in the matter plays the progress in the ICTs, their interaction and successful combination with the traditional tourism system components and the digitalization of tourism distribution channels. They will continue their evolution in response to outer influencing factors and this will cause more changes to the already sophisticated structure of the travel and tourism industry. Merging and integration amongst digital technologies leads to revolutionizing of the e-tourism; optimization in travel companies' assets use in real time; appropriate customer information disposal at a go. The tourism utility values increase, but e-tourism system operations transform significantly. In addition, innovations developed from start-ups like Airbnb and Uber, lead to new competitors' appearance and obliterate the boundaries between e-commerce and social networks (Solnet & Golubovskaya, 2018). Hybrid digital platforms and technological innovations (chatbots, AI, IoT, VR/AR, robotics, etc.) increase the flexibility of e-tourism system but cause considerable change and complication to basic operational processes of the travel companies.

Factors for the development of e-tourism

Contemporary tourism business has been developing influenced by variety of factors. Their impact has been assessed while exploring the potential and opportunities in e-tourism growth. Due to their variety and following the purpose of the current publication, the current paragraph displays systemized two influential group of factors. The first group comprises factors related to *technological advancements* and in specific the influence of the artificial intelligence (AI), virtual/augmented reality (VR/AR) and blockchain to improve e-tourism. In the long-term aspect, forecasts suggest that future significant transformations in the e-tourism system will be the result of these tech-related innovations application (Zsarnoczky, 2018; Gartner, 2017; Ali, 2017; Gale, 2017; Carter, 2017; Gelter, 2017). The second group comprises *digital consumer behaviour transformations*, challenging all providers of travel and tourism services.

Technologies based on *artificial intelligence (AI)*, continue to emerge the e-tourism at a fast pace. Successful implementation of the mentioned above register companies as: Booking.com; United Airlines; Hopper; IBM and Travelport; HRS Innovation Hub; JetBlue; TUI Group; Google Flights (White, 2019). Travelport suggests that in the coming years around 70% of the travel and tourism companies' transactions will be launched through mobile devices. And 70% of the transactions processed will be done by AI, capable to deal with specific kinds of tasks, which are routine in nature and do not require special form of creativity and emotional recognition skills. In brief, AI as any program with the capacity to learn new information and data and apply them to solve problems and tasks.

The uniform offers of the supply side of the e-tourism market will be undertaken by personalised services, provided with the help of AI (Zsarnoczky, 2017, p. 88). Technology facilitates optimization and fast decision making in order to create exceptional customer experience by recognizing customers better, their attitudes, expectations and behaviour. AI algorithms are especially useful when proposing and providing tailor-made solutions for personalised offers to travellers (Russel & Norvig, 2010); demand forecast models (Peng, Song & Crouch 2014); recommender systems for more cost-effective travels (Borràs, Moreno & Valls, 2014); chatbots as recommendation interfaces for travel information (Atzori, Boratto & Spano, 2017). AI facilitates customer service, saves company resources, human resources included, which in turn makes it exceptionally suitable for implementing in the e-tourism system. Significant progress is evident in the process of AI solutions implementation in the travel and tourism industry and the trend is about to flourish in the near future. The key challenges related to AI are: safe robust data handling, personalized differentiation, personalization and sufficient decision making (Zsarnoczky, 2017). No drastic changes are expected to be caused by the AI e-tourism system. However, the positive effects, a natural sequel of the implemented technology, are firm and clear. AI solutions will be applied more often, especially by small and medium companies, in order to improve the tourist product and personalize the travel service as well.

The technical achievements are leading to new types of *virtual reality (VR)*, *augmented reality (AR)* and *mixed reality (MR)* development. There are various different configurations or hybrid systems, that is why the terms are often used interchangeably – VR/AR/MR (LaValle, 2019). In their essence, there are 3D computer digital models (3D sound included), displayed in a variety of forms in front of the audience, the latest in turn navigate through them within space. In general, VR/AR/MR is an interactive area accommodating elements of the real world consequently combining with VR. The impact and importance of AR/VR for e-tourism can be summarized as: effective planning and suitable management; entertainment and education tool; virtual attractions at effective cost; convenient translation capabilities; real time and reliable navigation; booking rooms and exploring the property; the experience of rich luxurious destinations and interactive dining experience (with no actual/living experience); local attractions; marketing and hotel management (Nayyar, Mahapatra, Le & Suseendran, 2018). VR/AR/MR is an innovative marketing tool for personalized use, having continuously increasing impact on the travel companies, which in turn apply it in order to satisfy their customers' needs and to gain competitive advantage. Thanks to the VR glasses (or VR/AR apps), the technological innovation provides off-beat (funny) ways in attractive offer supply, stimulating commercial messages of tourism products and services that can be of use to any subjects of the e-tourism system.

The advent of *blockchain* attracted to great extent the attention of the tourism stakeholders. The technology is not administered by a central server but constitutes a peer-to-peer (P2P) network in which decentralized nodes keep copies of the whole blockchain. The TUI Group already apprehended the technology and implemented it in its booking, reservation and payment systems (Sixtin, 2017). The German tour operator is the first large travel group to use blockchain to let tour operators directly

access data on hotel capacity, cutting out middlemen such as Expedia and Booking. Being a modern technological innovation, blockchain is less known and studied by the scholars in tourism (Önder & Treiblmaier, 2018; Treiblmaier & Önder, 2019). In the Gartner Hype Cycle (a methodology that provides graphic representation of the maturity and adoption of technologies) it is positioned close to "peak of inflated expectations" (Sabre Labs', 2017, p. 17). That means, that it is probable for the technology to mis-perform expectations and mis-execute its full potential, which will prevent from sustainable development and transformation the technology is about to launch. Gelter (2017) defines blockchain as a revolutionist approach and forecasts that it "will transform financial transactions, and strongly influence the tourism industry" (p. 74). Thanks to it, travel companies will have the exceptional opportunities to: arrange follow up of customers' preferences; to establish strong and personalized, meaningful interactions; to gain better value from loyalty programs. However, the sophisticated nature of the blockchain technology and the difficulties in understanding its amenities may cause problems in its implementation while trying to improve the e-tourism system.

Scholars foresee that blockchain technology will generate trust in the future and will lead to better deal transparency, will accelerate the reservation process and communication between business partners especially in the area of appliance. Of course, there is the possibility to cause a second wave of disintermediation. Intermediaries such as OTAs and GDSs will probably be removed from e-tourism supply chain. Platforms such as Winding tree and HotelP2P bear the potential to eliminate such intermediaries and their market power (Önder & Treiblmaier, 2018). Another solution regarding the hotel industry, cutting the middleman, is named LockChain. An alpha version of the marketplace allows customers to book rooms directly with hotels for a small fee or without, if paying with LOC-tokens (Chakhova & Kosheleva, 2018). The business model has been supported by hotel payments in order to be promoted to higher positions in the LockChain mobile app.

Unlike the AI and VR/AR, which seem to be clearer enough and easier to deal with and apply, blockchain is a very sophisticated and perplexing tech-advancement, which will change by all means the structure of the e-tourism and the virtual travel and tourism market. However, the change direction is still not quite firm and clear. Researchers commonly state that on one hand, the technology allows establishment of direct connection with end users, but on the other hand it may cause centralization of the information systems. This will lead to competitive advantages to companies that have already dominant position on the market. Communication structures are also not clear enough and changeable, which in turn requires deeper and thorough research on the matter, in order to estimate and foresee the effects of the blockchain to the e-tourism system. It is hard to assess the influence caused on the stakeholders in the system. Significant questions to seek answer to are (Önder & Treiblmaier, 2018):

- Will market leaders keep their positions and will this lead to business increase and company growth?
- Will there be new intermediaries (start-ups), which have better apprehension of the technology and develop successful business models?
- Who is going to monitor the blockchain network, considering its P2P nature?

Expectations incline to the idea that the entire e-tourism system may significantly be transformed, which in turn will influence the underlying social and business interests. With better transparency levels in transactions blockchain technology has the potential to cause considerable change to established business models. The level of trust in building up business relations may witness some decrease, and this will lead to new structural changes (disintermediation). Transaction costs of certain e-tourism organization structures are probably to get reduced but increase in others is probably to occur. An adaptation period and adjusting to the organization and market structures of all levels is necessary to

undertake. Blockchain will influence internal managerial and organization processes, which in turn will transform the competitive advantages of the travel companies. Despite the fragment character of the travel and tourism industry, e-tourism system is irrevocably interconnected with the effects caused by blockchain application, which requires further scientific analysis from various points of view. DMOs are by principle responsible for the geographic areas promotion in which they are being established. On that base, they also need to be acquainted to the potential system influence and effects caused by the technology, not only amongst the travel companies concerned, but considering the entire sophisticated network of participants, interacting in different styles and transformation roles.

In close parallel with the evolution of the e-tourism system and technology, when choosing travel journeys and services, *the tourist demand and their behaviour starts to transform into e-travellers* type. Contemporary consumers of the travel and tourism industry have at their disposal a variety of reliable and effective e-tools: Meta search sites (Kayak, Skyscanner, Google), apps of TEMs (Expedia, Priceline, Orbitz) or supplier websites. However, the process of planning a journey and the purchase approach depends not only on their individual preferences, but on the specific choices available in their region and the market maturity (Gasdia & Juman, 2016, p. 13). The difference between the developing online markets and those reached maturity level is considerable, but the tendency of switching from offline distribution to online distribution channels is clear and noticeable on both markets (Solnet & Golubovskya, 2018, p. 276).

A market research of Phocuswright, sponsored by Expedia, in eight key markets (Australia, Brazil, China, France, Germany, Russia, the U.K. and the U.S.) in 2016 reveals significant market difference as related to travel services customers purchase online. The share of online purchase of airline tickets and accommodation is particularly high in Australia, Brazil, China and relatively weaker in Germany and France (Gasdia & Juman, 2016). There are considerable differences in regard to specific online channels use. Experienced travellers prefer to book the service directly through the supplier's websites. A significant contrast in online distribution channels use for searching and selecting a destination, shopping and actually making a purchase is witnessed. The consumer's preferences for TEMs over supplier websites cannot be generalized, because there are major differences across travel segments and between markets. These differences involve varying consumer perceptions around prices and content, which websites are easier to use, and which brands they trust (in particular). TEMs are well-positioned to attract online travel consumers in the future, especially as more shopping and booking moves to mobile devices (Solnet & Golubovskya, 2018). Travellers who are loyal to a particular brand and have already defined their trip elements around a certain supplier's products and services, may find it easiest to shop and book directly with those suppliers, leveraging dedicated websites and mobile apps (Sezin, 2016).

Potential and real buyers of travel and tourism services are some of the most active users of Internet information. No doubt they are "online tourists", characterized as: impatient, inquisitive, communicative, individualists etc. (Marinov, 2004, p. 116). The online customers are "communicative consumers" and tend to participate in the e-tourism system, only if the following requirements have been accomplished: efficient access to data information; self-service opportunities; full control on the sale-purchasing process; real-time service and deal history review; use of secure and universal payment tools etc. The travel decision taken by the contemporary user is highly dependent on social media (SM) platforms. Leading motives for the change are the easy accessing information, versatile interactive content and higher level of trust in the shared SM information (McGrath, 2008). The reactions and comments to the tourist products and services considerably influence the journey decision making process as they provide immediate information by tourists who have already experienced certain travel services. The influence caused by the e-word of mouth is especially strong in the travel and tourism industry and it

will continue to strengthen, because online reviews have a dual role: they provide information about products and services and at the same time work as proposals and useful suggestions (Park, Lee & Han, 2007). In the digital era visitors of the destinations have become prosumers actively producing and consuming their own experiences. They take on different roles, including booking, (self)guiding, reviewing, sharing and marketing the destination (Dredge, Phi, Mahadevan, Meehan & Popescu, 2018, p. 10).

Multi-screen consumer behaviour goes mainstream (Read & Rossini, 2014). According to Google, consumers' use of multiple screens is sequential or simultaneous. Smartphones are usually the place to begin to, then move to computer, tablet or TV. Companies need to build flexible e-tourism system to reach traveller on all screens. Tourists expect additional, distinctive and tailored shopper experience. Big data helps travel and tourism companies to gift customers with targeted choices. Kayak makes use of huge knowledge (Big data) to create search results and to predict future flight costs. Among the important determinants which impact customer's behaviour in e-tourism are: generation of stimulus (desire, influences, interest); information search (awareness, personal experience, e-worth of mouth) and service quality evaluation (Bajpai & Lee, 2015).

In the future, consumers will be stimulated and motivated to seek the services and to communicate more often with virtual travel agents and chatbots (Deloitte, 2017). Their intelligence will be increased, and they will make more reservations at hotels and restaurants, organize and plan travels, communicate more with customers. The future envisages a significant change that will go beyond the traditional understanding of online travel planning. While making a risk assessment strategy in e-tourism the following factors need to be taken into consideration: reliability, range, productivity, security in e-business in general (Azer, 2012). Envisaging potential threats by the mentioned above risk factors requires active participation from e-tourism system stakeholders in order to establish trust, confidence and security in the customer, while carrying out online travel and tourism deals.

Conceptual framework of e-tourism system

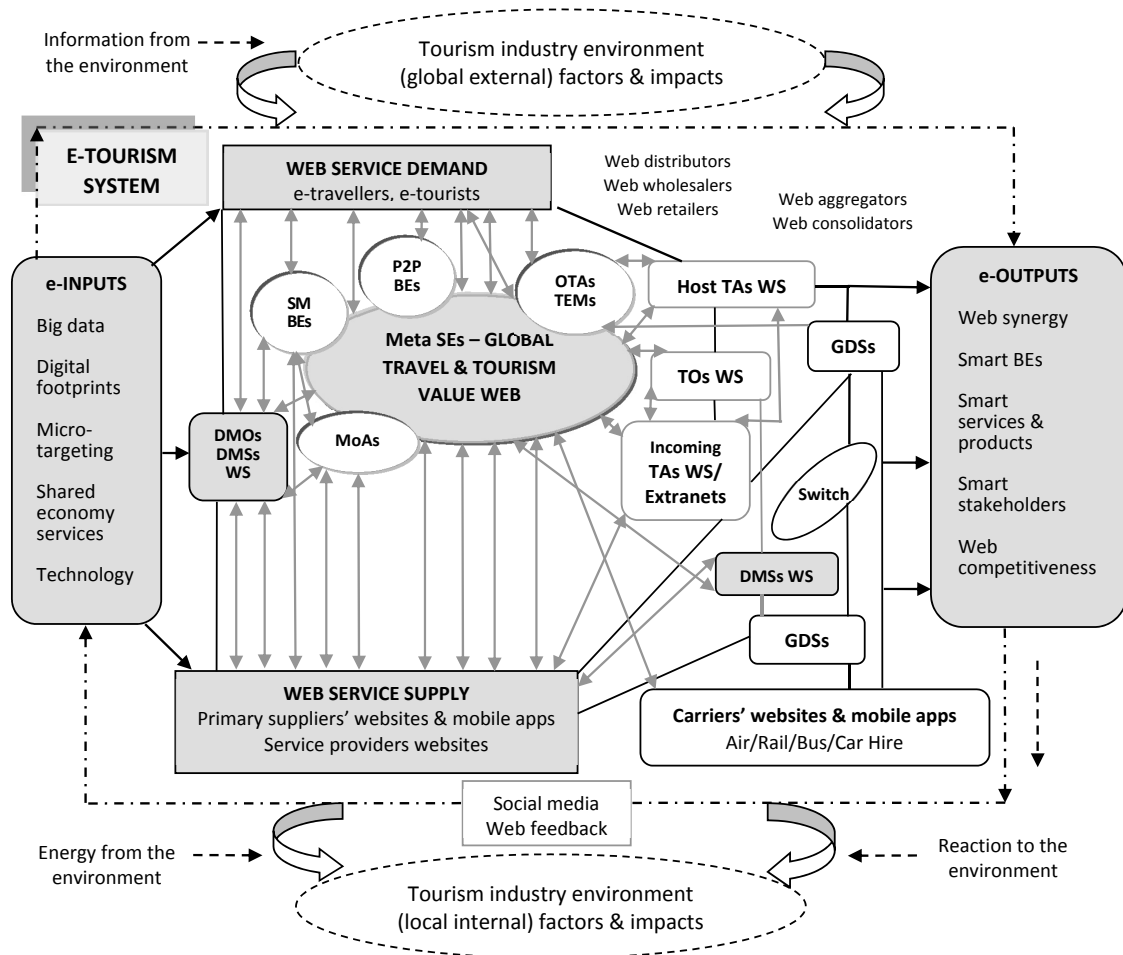
According to Buhalis (2003), e-tourism concept comprises all business functions (e-commerce and e-marketing, e-finance and e-accounting, e-HRM and e-procurement, e-Research & Development and e-production) and processes of e-strategy, e-planning and e-management in all sectors of the travel and tourism industry: transport, leisure, tour operators and travel agencies, public sector. The conceptual vision of the author represents e-tourism as a bundle, comprising three distinctive areas: business management, information systems and tourism. The integration of the latter into the concept of e-tourism determines travel companies' competitiveness, which in turn take advantage of the following: intranets to reorganize intra-agency processes; extranets for transaction development with devoted partners; Internet - to communicate with stakeholders.

In the attempt of studying e-tourism in the current publications, the authors aim to use conceptual (theoretical) framework in two main directions. Firstly, in order to emphasize its development heading as a complex, well-balanced and effective system and secondly, to identify the exact growth approach, widen its range and establish competitive sustainability. The conceptual framework is an appropriate and useful tool for studying events and processes in their primary stage of development (Pearce, 2012), as is the case with e-tourism. Academic research, exploring its nature and characteristics are rare and in a primal stage of survey as well.

In order to perform a conceptual framework several basic concepts are necessary to indicate. They lead in turn to the forming up and evolving of the e-tourism system, determining the groups of elements

(subsystems), and balancing the interactions in-between. Key concepts as identified on the base of systematic review of secondary data are: evolution of CRSS/GDSs; their upgrade into OTAs or TEMs and systems of DMOs; changes and effects in SoLoMo and Hybrid era; the impacts of the application of some key technological advancements (AI, VR/AR, blockchain) in travel and tourism industry; online travellers' behaviour patterns and transformations. The suggested *theoretical framework* combines leading concepts into a complex and dynamic e-tourism system, based on four significant groups of elements – subsystems (Figure 2):

Figure 2
E-tourism system conceptual framework



Legend: DMOs - Destination management organizations; DMSs - Destination management systems (TISCover, VisitSingapore, VisitFinland, MySwitzerland, VisitBritain); WS - Web service; SM BEs - Social media booking engines (TripAdvisor, HolidayCheck, Facebook, Twitter); MoAs - Mobile applications; P2P BEs - Per to per booking engines (Airbnb, Uber); Meta SEs - Meta search engines (Google, Kayak, Skyscanner); OTAs/TEMs - Online travel agencies/Tourism e-mediaries (Expedia, Orbitz, Travelocity); TAs WS - Travel agents web service; TOs WS - Tour operators web service; GDSs - Global distribution systems (Amadeus, Galileo).
Source: Created by the authors.

- *e-Inputs - Incoming means and resources.* During the last decades, due to the enormous information exchange flow, in the e-tourism system as well, Big Data is a synonymous to large-scale surveys and researches in order to define business trends and models mostly interconnected with consumer

behaviour. For tourism management, during the digital era, Big Data represents efficient real-time analysis for optimal use of unparalleled information quantity in order to improve e-tourism and supply intelligent travel experience to the customers. All e-travellers leave digital footprints (active or passive) on the web. Analysing uploaded photos, online reviews or links clicked, entirely new and effective tool is available in order to collect actual data, explore e-demand and visitor flow management (Olmedo, Gomez, Palomares & Gutierrez, 2018). The results of the digital footprints follow up are useful to all subjects of the e-tourism system, because they provide information about e-travellers' preferences, certain desires and requirements. The results can be added by psychographics market segmentation (attitudes and lifestyles, activities and interests, personality and values) which is a megatrend in today's digital tourism (Gelter, 2017). Important input resource in the system is the service resource coming from the shared economy area. Adapting to it results into new market opportunities, but in turn may threaten the intermediaries' positions (OTAs/TEMs, TAs, TOs) in e-tourism system.

- *Web-marketing subsystem* comprised of two parts of the digital tourism market – web service supply and demand. The system is being characterized by: significant transformations in the online distribution channels and their diversification; emergence of new players and traditional travel intermediaries' dropping off; direct and bidirectional, accelerated and facilitated communication with end consumers and primary suppliers thanks to the peer-to-peer booking platforms (Airbnb, Uber). Significantly important transformation in the online distribution system in travel and tourism is the process of interconnecting social media with OTAs/TEMs and the primary suppliers' websites (Lee, Guillet & Law, 2013). Many consumers are in use of mobile apps to access tour operators' and air carriers' services. Through the Extranet (or tour operators Extra) the hotel companies connect directly with tour organizers, bypassing traditional intermediaries (Fountoulaki, Leue & Jung, 2015). Incoming travel agent web service can be easily replaced by Extranet, which may result into the greatest transformation of the future tourism distribution system (Caber, Albayrak & Loiacono, 2013). Tourism Extranet uses web technology to interconnect all business deals with outer for the system partners, contracts management between tour operators and hoteliers included. Considerable changes in the distribution channels of the web marketing subsystem elaborate to great extent the tourism value chain, transform and blend traditional roles of the stakeholders in e-tourism.
- *Destination subsystem web service* based on DMOs and their networks of interaction with tourism boards, governmental and non-governmental bodies, professional organizations, primary suppliers and service providers at different level (local, regional, national). The subsystem has major impact on SMEs active participation in e-tourism business. Connecting DMSs web service with mobile apps of Meta SEs and SM booking platforms personalize travel and tourism and improve experience by offering individual local services and products. With better integration of the technological structure of the DMOs in the e-tourism system many favourable facilities to utilize the potential of the multiple online channels are being created.
- *e-Outputs - Outgoing resources*, cumulative results and effects, obtained through combination of the subsystems and various trends and influences in e-tourism development. These results come into the form of synergy effects, basically in relation with: expansion in range of the e-tourism system; balanced and coordinated development with added value and benefits, digital innovation to all stakeholders; strategic effectiveness and profitability; sustainable competition stimulation. Smart services and products supplied with suitable intelligent booking engines increase e-tourism system's effectiveness of both - the destinations and the local tourism business market. Implementing modern technology allows transformation of substantial data quantity into web value for the travellers and tourists. New communication methods and information exchange, synchronizing and common use of

different technological advancements increase the smartness of stakeholders in the travel and tourism industry. The contemporary forms of collaboration value creation lead to increase in innovation, entrepreneurship and competitiveness of the e-tourism system. The level of integrity and intelligent use is driving it into a more resistant and adaptive tool to the continuous changes and transformations in the travel and tourism industry.

The structure above reveals e-tourism system as a non-isolated, non-static or closed system. Its genesis and development have been influenced by various global and local factors and conditions: political, economic, social and cultural, juridical ones. They affect all web subsystems and structural components, being dynamic, open, related and volatile. The strength, direction of impact and fluctuation probability determine to great extent stakeholders' level of appreciation and loyalty towards the complex results of the e-tourism system functioning. General evaluations, opinions and suggestions regarding the elements of the stated system have been carried out through web feedback, expressed and conveyed through a network of systems, subsystems and social media.

Major trends and forecasts for e-tourism development are inevitably related to seamless travel and personalization of the travel experience in certain destinations. This requires intergovernmental collaboration and data exchange between the versatile business organizations - from primary suppliers to other service providers at a destination. The personalization depends on the technology comprising customer data and AI, in order to satisfy certain needs, desires and interests of the travellers. A survey held by the A. T. Kearney consulting, initiated by the Amadeus, systemizes positive and negative opportunities for the future travel and tourism industry in four major case scenarios (Aranzabal, Furman, Luzarraga & Hernandez, 2017):

- Immersion in fragmentation and local character for industry development. Personalized travel offering increase alongside acceleration in nationalism and safety and security apprehension.
- Significantly innovative, futuristic even surrealist industry, due to the IoT and AI presence. The result is a more integrant industry and use of Big Data, in order to improve travel and tourism service supply. The efficiency of the e-tourism system has been multiplied on a collaborative basis, optimizing price and occupancy rates. The travel journey gets cheaper and more secured, less safety monitoring and restrictions registered. Destination and travel products and services selection is related to individual tastes, preferences and desires.
- A limited and standardized industry based on mass tourism supply. Consumers are price sensitive, innovations are being developed locally due to strict data protection laws and limited appliance of new technologies.
- Highly standardized industry. This is the worst-case scenario for e-tourism, where innovation is stagnant, tourism is highly fragmented, and AI usage too limited. The tech giants in the e-tourism system keep their positions and the status quo does not change.

Conclusion

Digitalization of the traditional travel and tourism system and its transformation into e-tourism system is not just a virtual future, but actual reality. Many more destinations and researchers focus and head to e-tourism. The proposed model of e-tourism system is a paradigm-shift that brings thorough change to the structure and way the contemporary travel and tourism industry functions and keeps providing both new utilities and opportunity, new threats and challenges at the same time. E-tourism growth

has key effect on the competitive abilities of the travel organizations and destinations. The successful functioning of the e-tourism system requires proactive, innovative management approach leading to constant organizational and technological integration and development. E-tourism approach is an opportunity to fully exploit its potential and scope, a strategic purpose to maintain companies' and destinations' positions in a digital economy. Otherwise, they will suffer from adaptation difficulties and restrictions in order to keep their positions in the e-tourism system and a liability of dropping off. The dynamics in its development requires quick and smart arrangements of all stakeholders. In the uncertain future of the e-tourism system environment, companies have to clearly define their (market) niche or tourism specialization, to know very well their needs and desires (personalisation), to highlight the exact competitive advantages and to use them effectively (differentiation). At the same time, service providers need to be flexible and adaptable to the changes the environment is able to provoke.

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Received: 04/02/2019

Accepted: 15/10/2019