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DIGITAL ECONOMY AND (NON) INCREMENTAL CHANGES IN TOURISM AND RETAIL BUSINESS MODEL

Digitalna ekonomija i (ne)inkrementalne promene poslovnog modela u turizmu i maloprodaji

Abstract

Digitalization of business changes producers, intermediaries, service providers and consumers. There is a vast quantity of data available. Furthermore, new algorithms providing answers from these data are also more and more available. Finally, devices possessed by an average citizen enable choice and pattern of shopping to be shaped by these answers. So, the question is whether the businesses are facing the evolution or revolution of the existing business model? Tourism industry and retail industry are analyzed in this paper in order to search for an answer to this research question.

Keywords: *digitalization, retail, tourism, industrial revolution, artificial intelligence*

Sažetak

Digitalizacija poslovanja menja proizvođače, posrednike, uslužne organizacije i potrošače. Ogromna količina podataka je na raspolaganju. Štaviše, i novi algoritmi koji obezbeđuju odgovore na osnovu ovih podataka su na raspolaganju. Konačno, uređaji koje poseduje prosečan građanin omogućavaju izbor i način kupovine koji je oblikovan upravo ovim odgovorima. Dakle, pitanje je da li se privrednici suočavaju sa evolutivnim ili revolucionarnim promenama modela poslovanja? U ovom tekstu, analizirani su turizam i maloprodaja u traženju odgovora na ovo istraživačko pitanje.

Ključne reči: *digitalizacija, maloprodaja, turizam, industrijska revolucija, veštačka inteligencija*

Introduction

Industrial revolution, being precisely understood “as concept of development that fundamentally changed our society and economy” [3, p. 11] radically turns standard business models into new areas for building competitive advantages. The fourth industrial revolution’s main tools (or consequences) are new IoT devices, cloud computing, artificial intelligence, automation. Main fuel (or the main cause of the new industrial revolution) are data. According to Max Wessel, Vice President of Sapphire Ventures [29], the biggest beneficiaries in the fourth industrial revolution would be companies “with data that have access to consumers’ underlying desire or sentiment about any particular subject, and build intelligent applications on top of that”. There is a radical change in marketing approach.

While budget for traditional marketing media decreased on average by -1.3% in the period of 2012-2017, digital marketing budgets increased on average by 12.4% in the same period [35]. According to Gartner research [28, p. 4], digital marketing budgets have broken the three-percent ceiling and in 2014 reached 3.1% of the total revenue of surveyed companies in the US. Digital marketing has different components and all of them show strong development trends, changing the way of

value adding. Digital environment can be considered as an enabler, but also the cause of changes in many areas of marketing and marketing channels.

One of the most influenced areas is supply chain management. Efficient customer response is strongly improved with new approach to the inventory, enabling strategic categorization on promotional, capacity-driven, demand-driven, regular items and phase in/phase out items. For each of these categories different method of inventory re-ordering should be installed, stressing, for example, price elasticity and agreements with suppliers when promotional products are in question, and extrapolation and optimization when regular items are re-ordered [43]. Process of optimization, with access to precise POS information, enables change even in the size of transportation box for a particular store in a particular shipment. Moreover, development of Vehicle Routing Systems (VRS) plugged in ERP platform, enabled connection of front-end interface in the vehicle and back-end system integrating wireless connection sub-system and robust back-end data base containing static data (customers, geographical information, road network) and dynamic data (orders, prices, quantities, etc.). These developments support fleet management in real time, decreasing cost and increasing at the same time level of service [50].

Mobile marketing, as the star digital marketing activity of the second decade of XXI century is, by far, the strongest contributor to the media advertising spending worldwide [8]. Shankar [34] emphasizes four dimensions of mobile promotion: a) social effects (shares, clicks, purchase) depend heavily on interconnection of many elements like marketing strategy, firm, consumer and context factors; b) gamification elements (story, esthetics, mechanics) support strongly social effects; c) effectiveness of mobile promotion depends on good insight in consumers' tradeoff between privacy and value, reaction when proximity of buying emerges, spatial and temporal targeting and multichannel behavior; d) mobile marketing may influence customers during all stages of "path-to-purchase" and after that. Research results show that behavior of mobile users is different and more pro-active (up-loading and particularly during travel down-

loading). Knowing also that males and youth are more frequently mobile, the content and triggers may and need to be differently developed [14].

Digitalization of the economy caused complex changes in marketing. Analysis of five leading scientific marketing journals for the period 2000-2015 revealed that in 160 analyzed articles actually three areas were most frequently covered: digital, social media and mobile marketing (DSMM). In these articles, three directions of DSMM technology influence were most frequently analyzed: a) on consumer self-expression and communication; b) on decision-making process as a powerful tool; c) on market intelligence as an increasing source of confident data [24].

Customer conversion and customer development (loyalty building) are marketing areas strongly enhanced by digital marketing [26, p. 7]. Tools for customer attraction and conversion like content co-creation, website design and comfort in searching, comparing and filtering vast number of offerings, make shopping easier and smarter. On the other side, emailing (newsletter, special offers, reminders) and involvement in social media make it easier and less expensive (three to five times comparing with traditional retailing) to make e-customers loyal. Development of e-CRM gave impetus to the development of CRM in total.

Market research could be significantly enhanced in the world of digital marketing: all transactional data are tracked in digital form, whether a web search is in question, or just comparison of products and terms of sale, real purchase or reclamation of a purchased product. Experts say that web analytics (WA) of browsing history is more confident than public opinion research, since nobody shows the socially desirable reactions during Internet searches, as it may happen when responding to a survey. However, some researches warn that the use of WA in measuring digital marketing performance is limited by the content, processes and context in different companies [21]. Only in the companies that clearly define digital marketing goals connected with the web activities, and after that install clear indicators that are automatically recorded and presented to the persons in charge, performance measurement can show correlation between digital marketing budgets and marketing performances. As expected, there is also

correlation between measurement of the digital marketing performances and employees' qualifications.

Digital environment

Today there are around 7 billion people living on Earth, and in every single moment there are over 12.5 billion devices connected to the Internet. The estimates are saying that until 2020, this number will be increased to 50 billion devices or 6.58 devices per person, on average [10, p. 3]. Everything that surrounds us slowly, but surely, becomes "smart". Telephones, automobiles, TV sets, books, watches, roads, houses and all other appliances. The world learns how to communicate in a completely new language, and if somebody won't be able to understand it, they will be outcast. Digital evolution, as all the other evolutions, is "rewarding" the ones that have managed to adjust but not the ones that didn't do so – they won't stand a chance to "survive". The occupations that are in high demand now were almost non-existent 10 years ago, while we cannot fully comprehend what would be the most sought occupations in 10 years. Technology is not the occupation. Technology is a tool, way, or means to realize a goal. The role of digitalization has been changing over years: from the point that it was a drive to achieve marginal efficiency to the point of becoming the main input and basis for application of innovative solutions and changes in the ways how companies are operating.

Digitalization is the cause of large-scale and sweeping transformations across multiple aspects of business, providing unparalleled opportunities for value creation, while also representing a major source of risk [46, p. 10]. Overall online sales in the UK, US, Germany and China are forecast to grow by £320 billion by 2018, expanding the size of the online market to £645 billion, according to the latest research by OC&C Strategy Consultants [30, p. 6]. The increasing power of mobile shopping via smartphone is driving much of the growth – with the UK in the forefront with 59 % of online sales made through smartphones or tablet devices, ahead of the 45 % in the US and 24 % in Germany [27, p. 3]. Between 2013 and 2017, mobile phone penetration has risen from 61.1% to 72% of the global population [49].

Contemporary digital environment is characterized by strong flow of digital data, coming from everyday activities which are now digitized. As the consequence, each activity leaves a digital track behind, causing phenomenon called "big data" denoting massive data growth [47, pp. 36-37]. Analysts recognized opportunity in this wealth of data, with simple intention to transform this data to information, then knowledge and deep insights in observed phenomena at the end. This intention is, however, heavily burdened with three V characteristics of big data stream [5]. Volume of data is increasing thanks to the fact that digital technologies quickly replace analogue technologies in each segment of human activity, generating more and more data. Variety of data also increase, containing not only numerical data, but also the so-called unstructured data, like text (social networks), images, audio and video digital records and streams. Velocity denotes a move from static to dynamic data and intention to analyze streams of incoming data in real time. These three Vs request investments in technology resources (memory, processing), but also in knowledge and new approach to the use of available data.

Digital environment relies on three infrastructures enabling modern interconnected world: technological infrastructure, service infrastructure and policies infrastructure [11]. Technology is typical enabler, making possible that different things and processes interact, enabling different services, which in turn requests rules and processes so that service users feel comfortable while using the service:

- Technology infrastructure is characterized by many new different concepts, like cloud / grid computing, with many computers networked, or pervasive / ubiquitous computing meaning that computers are everywhere and all the time. Calm technology [45] is IT present everywhere around us, in the periphery of our sight, liberating our attention to be focused on some other important things, but always present if necessary to warn and transfer information.
- Service infrastructure is represented by numerous digital agents (software) performing different services, creating number of small markets offering and using services, evaluating services, choosing the

best offer (price, quality standard, etc.). As foreseen a decade ago, it is already possible to have multiple agents (multi-agent) working on one task, and even evolutionary agents that adapt using evolutionary algorithm according to the changing environment [13, p. 6].

- Policies infrastructure is necessary to secure “trust” in digital world where it is obvious that asymmetry of information exists. Majority of our activities are digitally recorded, and access to these data provides superior advantage to the digital supplier. If users do not have a “trust” that this advantage will not be misused, they will not be willing to accept services offered. Legislators (like EU with its Regulation EU 910/2014) are aware and strive to meet this rising need of digital service consumers for safe and secure use of digital products [2].

Digital economy, particularly social networks, websites and emailing might have been seen as suitable for the SME sector, being perceived as low-budget channels of communication with target public. Yet, it is noticed that the SME sector uses digital marketing tools rather poorly [36]. Key barrier for digital marketing implementation in the SME sector is a lack of (human) resources, particularly lack of skills and knowledge to deal with this component of marketing. The second important barrier is resistance of the business owner / manager. With the growth of business, the implementation of digital marketing becomes more successful too, denying the expected assumption that digital marketing is suitable for micro companies and start-ups.

Further development of digital services depends on security and safety. This caused strong and coordinated legal activity in the EU, striving to support further development of electronic identification and trust services [2]. Electronic identification (eID) already exists in several countries and private networks, but with no mutual recognition and joined standard. The idea is to impose a standard eID procedure so that public services can be offered to EU citizens in all countries, across Europe. Depending on the type of service, there are three levels of assurance - low, substantial and high - requiring different procedures and elements involved. Availability of the services will

require further trust instruments, besides electronic signature, that showed not to be reliable, since each EU country transposed differently the Directive 1999/93/EC in its legislation system. New trust instruments to be introduced are: electronic seal (to ensure origin of the document for legal persons); electronic time stamps (to ensure time linked with document); electronic delivery registers service (to ensure data on document transmission); website authentication (to ensure recognition of website owner); validation service (to provide confidence during the use of previous instruments); and preservation service (to secure the use of previous instruments).

Understanding that digitalization of the economy and total social environment is a necessary ingredient in further development, EU Commission installed a useful instrument, dashboard with key indicators showing level of digitalization in member countries, decomposed in major components [7]. This decomposition shows that countries have almost equal level of connectivity. Differences, however, came from different level of other components: human capital, integration of digital technologies and, particularly, availability of digital public services. Differences can also be tracked in the evolution of different digital services. Looking in sub-component of business digitalization, for instance, the development of social media is strong and permanent and development of electronic information sharing, achieved very high level. However, the development of RFID technology was very eruptive during 2015 to later stagnate, being at the bottom of the change during 2017. These indicators are useful for business community as well as for the public policy decision makers. Very illustrative is the comparison of countries by two dimensions: level of connectivity and digital public services. Comparing observed countries, it is obvious that some very developed countries (the Netherlands, Denmark and Sweden) have been developing both dimensions strongly. However, some countries, like Estonia, achieved high level of digital public services with rather low level of connectivity. Unequal development of different pillars of digitalization is important warning and/or chance, for both business and public sector. Moreover, differences in industrial sectors, like tourism and retail, and evolution in customer and consumer behavior, suggest that some of the

known jobs will disappear, the demand for critical skills and knowledge will transform and also that the structure of supply and demand may significantly evolve. All above listed arguments make it reasonable to analyze important research question – Q1: *Does digitalization cause evolution in business?* Alternative is that digitalization actually causes strategic, non-incremental changes and discontinuity of known business patterns. Arguments in favor of both options will be considered in the rest of the paper.

Digital economy in tourism

Digital traveler

Unlike other industries, tourism, or, to be more precise, hospitality industry, or more specifically, accommodation services cannot be replaced with some virtual reality. However, it was the use of digital technology that changed the habits of modern consumers and their interest in tourism and hotel industry. Almost 50% of all global tour-activities bookings are being made online [1]; 59% of Asian leisure travelers want to book travel products “whenever they can” and “wherever they can” [38]; Internet travel booking revenue has grown by more than 73% over the past 5 years [1]; 20% of Google searches being for local destination information [37]; over 50% of today’s travelers prefer PC rather than the smartphone to make their travel bookings [40], but, 30% of all direct online bookings worldwide are made on mobile devices (tablets and smartphones) at increasing rate of 1% per quarter [1]; 38% of leisure travelers and 57% of business travelers use mobiles for travel information [1]; 31% of smartphone users claim they research travel on their mobile devices [37]; 87% of global and 85% of US travelers use mobile devices while traveling [40].

On the other hand, 51% out of the reservations are executed online, out of which 22.5% via online tourist agencies – OTA [20]. Furthermore, 18% of reservations are done in “motion” (usually via mobile phones or tablets). Around 2/3 hoteliers are systematically gathering data on guests’ preferences, but still less than 50% of them are using these data for creating individual offers [33]. It is expected that the millennials and generations Y and

Z that are born and raised with the digitalization would comprise 44% of the world’s population by 2020 and 2/3 of world’s working force by 2025. It is estimated that the future changes in the tourism market will be under strong influence of new technologies, regardless of the types of products or services that are offered to the guests.

Internet has to a great extent influenced changes in the ways of searching for new destinations, booking accommodation as well as in experience of the journey itself. Online booking platforms have taken over very important part of the marketing efforts. Applying new technologies has influenced creation of the so-called sharing economy that has, after accommodation services, found its practical use in the domain of transport, catering, etc. We can undoubtedly discuss about digital transformation of how business is done in tourism. Airbnb has transformed accommodation services while Uber has entirely innovated transportation and taxi services.

Table 1: The influence of the sharing economy to the travel experiences

Share rides	Stay overnight in someone’s home	Share a meal with someone	Meet someone
<ul style="list-style-type: none"> • BlaBlaCar • Uber • Sidecar • Getaround 	<ul style="list-style-type: none"> • Airbnb • 9flats.com • Wimdu 	<ul style="list-style-type: none"> • OpenTable • EatWith 	<ul style="list-style-type: none"> • Womago • Withlocals • Advlo • Vayable • Tinder

Source: Roland Berger, adapted by the authors [32]

Application of new technologies influenced development of a new culture of media: Information available in real-time are facilitating comparison of offers for leisure and accommodation. Current market condition in tourism industry and air transport is that since the mid 80s until today, the volume of the air transport has been doubled every 15 years, with the expectation of the continuation of this trend. According to the UNWTO data [42, p. 5], it is estimated that until 2030 there will be more than 1.8 billion of international tourists. Besides, trips have become less costly: the prices of the airplane carriers were in 2016 on average lower by 4% in comparison to 2015 [9, p. 1]. Additionally, changes, when it comes to security issues (geo-political tensions and terrorism), have and will continue to have influence on realization of trips in some parts of the world, as well as in modern conditions. Security issues are not only relevant for the

physical surrounding (e.g. border crossings and tourism destination centers), but also in digital world (e.g. data privacy). Security breaches (in physical and digital world) and accidents can create serious financial and reputation damages to the companies operating in tourism industry.

Economy of experience and personalized consumers' approach

According to the study performed by Fundación Orange [12] on digital transformation in tourism, there is an extensive use of information and transaction data in every phase of the value chain in tourism and travel sector. Consumers look for information before the trip, compare and check the opinion of other tourists, and then book tickets for the transportation, hotels and even tickets for sport and cultural events. While travelling, consumers have numerous questions regarding restaurants, events and other activities on the destination while, after travelling, they provide to online users insight and grading of their experience. Leisure travelers spend on average 30 minutes reading reviews before booking, while 10% of travelers spend more than one hour for it [38]; 88% of consumers trust online reviews as much as personal recommendations [38]; 81% of all reviews are positive [1]; 85% of consumers trust online reviews as much as personal recommendations – this is an increase of 12% compared to 2012; 32% of consumers read reviews on mobile apps in 2017 (a growth of 14% from 2016) [25], etc.

Having all this in mind, many tourist and hotel companies are not only changing their web and offline functions with new mobile formats, but are also creating new experiences and new business models specially designed for mobile chains of communications. Numerous facts are indicating the potential of the digitalization in the tourism sector:

- Search for information before the trip: it is the most widespread use of the Internet, because today more than 90% of users check information before booking the trip or hotel; 95% of respondents read reviews before booking [38]; leisure travelers read an average of 6-7 reviews before booking; business travelers read an average of 5 [38]. As a result, there is a creation of

the interactive web places that can be accessed via mobile devices (e.g. blog NH hotel group).

- Crosscheck on references: although it is a part of searching for the information before the journey process, in many cases, the search is done via other channels and not on the company's website. Consequently, hotel company needs to provide answers, especially to negative comments and critics and to manage this process.
- Online booking and cancelling of the guests in the accommodation facilities: amongst the most pragmatic functions, especially for the hotel and airplane ticket reservations; possibility of online checking saves time for the future guests and enhances internal managing of the company. Lately, certain companies insist on free check-in online except for the Loyalty Card holders.
- Safe process of the reservation and purchasing: increase in the number of the online reservations and purchasing has resulted in the increased level of concern by the users for the security of their personal and financial data. One of the main challenges for every company is the implementation of the solutions that provide high level of security in the data management process.
- Developing of the applications: users, modern tourists, are seeking information before and during the trip, initiating development of the general and specialized applications and platforms. There are different applications that can be used for providing information about places and activities in and outside the hotel, with mobile services adjusted to the customers' preferences.
- Smart cities: some cities have made a step forward in development of applications, starting implementation of the geo-location smart systems with signals that provide useful information for tourists: weather forecast, accommodation facilities, cultural and natural heritage, possibility of transport, and even additional services like systems for children monitoring.
- Connection possibilities: free mobile connection is of the essence for most of the users. Although Wi-Fi

and 4G Internet connection sometimes are not offered in the hotels, restaurants or airports, there are open spaces with free Wi-Fi in some destinations.

- Access to mobile devices: some hotel chains are offering to their clients devices like tablets or smartphones during their stay at the hotel as a courtesy sign for free or for a very small remuneration and thereby facilitate easy access to tourist information and amusement activities.
- Development of new business models: high availability for the users and possibilities offered for their geo-location are facilitating more adjusted tailor-made services, even new services such as reservation at destination. This trend is more present in young generation (especially millennial generation) assuming travelling without predetermined itinerary and booking hotels once at destination. The trend is also present in the business trips that are subject to last minute changes.
- Applications that are created for certain industries give fantastic results in entertainment and tourism industry, because they are fulfilling very specific needs of particular market segments, like families with children, seniors, single people, even some special interests such as ornithology, mountain hiking, scuba diving, literature tours, gastronomy and wine tours, etc.
- Improved virtual reality: in addition to mobile devices, nowadays are offered additional experiences and virtual reality, like the digital observatory Barcelona Skyline in the 83.3 Terrace that offers information on monuments thanks to the technology of the augmented virtual reality enabling “site seeing” of the cultural heritage with the virtual reality tools.

Beside the sharing economy, new technologies have also affected the development of the experience that stimulates and appraises the experience beyond material values. Economy of the experience is based on the exchange rather than owning, gives advantage to the meaning rather than brands, to community over borders [31]. The exchange of the experience is done in real time and on a very high technological level. Sharing of tourism experiences online and offline with family,

friends and publicly, with other users, has become integral part of every journey and is a very important segment of the development and business policy of the companies that are doing business in tourist sector. Feedback from tourist is the essential, because over 95% of those that are travelling for the vacation read at least 7 comments (reviews) before making reservations, while business travelers read 5 comments on average [38]. Consequently, providers of tourism services have the possibility to use the authentic experiences of their clients for marketing purposes and to perform necessary amendments of their services if the need is recognized.

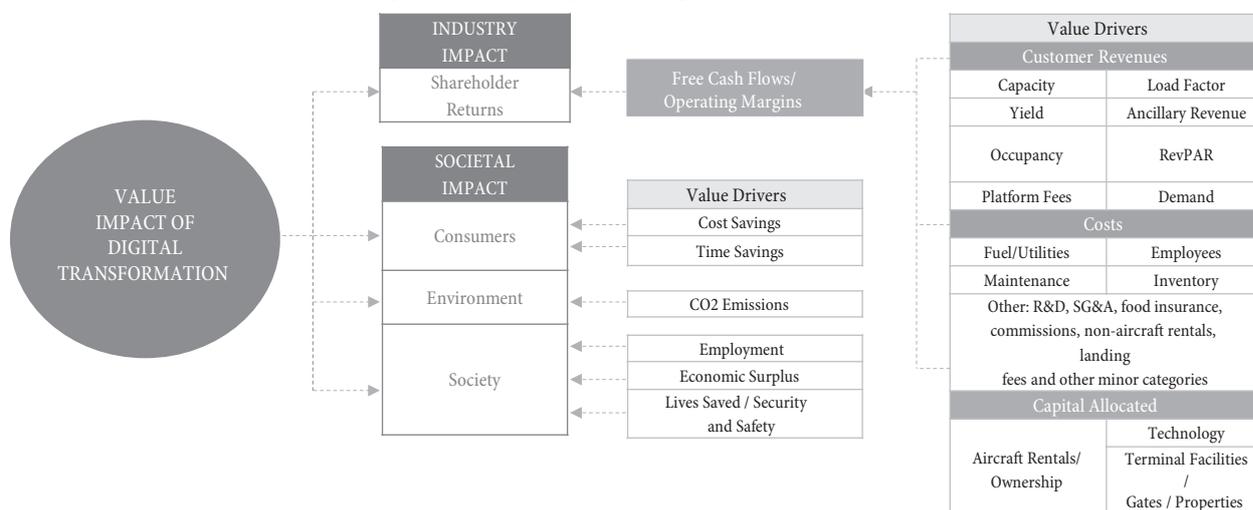
Consequently, digitalization has changed the business policy in tourism: the user is expecting more and more personalized experiences and customer-centered offer, which improves comfort of the modern user. Implementation of new technologies supports transition from organized to individual tourism. ICT allowed creation of two different sub-networks: one is created by individual tourism and is increasing in importance, and the second one by the organized tourism [17]. This especially affects hoteliers. In spite of systematic gathering of data, less than 50% of hoteliers use these data in personalizing their services, while rarely cooperating with start-ups in the tourist and leisure industry. Nonetheless, some of the big players have realized advantages of the new technological solutions. Accor Hotels Group has presented revolutionary concept, by far better than any other concept in this segment, named Jo & Joe. It entirely redefines the approach to the members of generation X and Z (millennials) in accommodation segment. During development of the concept, in parallel with Accor team, there has been organized a team of future guests and experts in order to define the concept together. Aforementioned concept redefines the role of management. The hotel manager is now being followed by community manager and event manager that are responsible for successful operating of the business. The second successful example is Marriot company that has started with its own high-tech accelerating program for the start-ups in the catering industry. The program is called Marriot Test Bed and it will secure strategic advantage in comparison to competitors. TestBED is a unique 10-week accelerator program that gives start-ups an invaluable

opportunity to test their products within an operating Marriott Hotel in major European cities.

Digitalization has affected the millennial generation born in the period from 1980 to 2000. This generation is characterized with its presence in the social media, loans taking, lack of cash, different priorities, postponing the marriage and purchase of household, postponing of parenting, longer duration of stay in parents' home, etc. They are dedicated to wellness and spend time and money to exercise and consume healthy nutrition. Their active way of living is affecting the trends in every industry, from food and beverage to fashion. Millennial generation does not prefer to purchase cars, musical devices and luxurious items. Instead, they turn to a new set of services that offer access to the products that are not necessarily owned, introducing the sharing economy. With the information on products, read reviews and price comparison, millennial generation is giving advantage to the brands that can offer maximum of comfort and the lowest price. Majority (57%) of them compare prices at the store [15]. A well-known brand is not sufficient for the millennials to purchase certain product. On the contrary, there is an increased importance of social media. Millennial generation emerged in the period of great technological changes, globalization, but also frequent economic turmoil. They are more likely to choose a destination based on recommendations and value, whilst older generations are more habitual. Millennials have reshaped the economy: their unique experiences have changed the way of purchase and sale.

Digitalization brings advantages to the tourism industry. Tour operators, hoteliers and service providers (air-carriers, travel agents and other participants) can achieve lower marketing expenses as well as increase of turnover. Regardless of who the future infrastructure providers are, the cost of distributing travel services will continue to fall with the constant emergence of new solutions [49]. Customers are benefiting strongly from personalized, tailor-made services. The extent to which consumers will benefit from digitalization depends on their willingness to share their data and experiences with unknown users and service providers. As long as it concerns social influences and environmental protection, digitalization is characterized by low pollution level, creating therefore positive effect to the society. The sharing economy has led to creation of new sources of revenues and new business opportunities, although some jobs and business models will become obsolete. However, the huge potential of digital economy is still underexploited. That has been confirmed in Europe by the report of the Strategic Policy Forum on Digital Entrepreneurship. The report reveals that 41% of EU companies still have not adopted any of four advanced technologies (mobile, social media, cloud computing and big data). Moreover, less than 2% take full advantage of these digital opportunities [33]. Businesses that fail to get digitally connected will become excluded from the global market. Progress is uneven across sectors and company size: the smaller the company, the lower the use of the latest digital technologies [33].

Figure 1: Value impact of digital transformation



Source: [46].

Digitalization of Serbian tourism

Serbia seeks to streamline and modernize the country through digitalization and improvement of the IT sector, and create a more competitive business environment introducing the latest information technologies. A framework for the improvement of electronic business and electronic communications in the tourism sector is being created by adopting regulations related to electronic commerce, electronic communications, electronic documents, electronic identification, as well as the information security. According to the research carried out by the Tourist Organization of Serbia, entitled *Attitudes and Behavior of Foreign Tourists in Serbia 2016* [40, pp. 19-25], the following data were obtained:

- a) The way foreign tourists heard about Serbia as a tourism destination: 63.9 % by the Internet, 10% from newspapers, magazines, travel guides and other printed materials, 4.1% on TV, 4.3% through a travel agency, etc.
- b) The most frequently used websites (multiple answers were possible): 42.8% of catering sites and other accommodation facilities, 37.1% of sites that are not specialized in tourism, 34.2% of tourism-related sites, 20.4% social networks, 17% websites of TOS and LTOs, 5.9% Internet tourism blogs, 4.2% Travel agencies websites, 2.5% Internet tourism forums.
- c) The most frequently used websites in the category of hospitality and other accommodation facilities: 73% booking.com, 16.3% airbnb.com, 3.2% hostelworld.com, 0.9% trivago.com.

Research of domestic tourists carried out by the Tourist Organization of Serbia in 2015 [39, pp. 19-20] shows that they prefer personal experience (40%) and recommendations from friends and relatives (38%), while only 18% of them are informed via Internet and 2% of them contact travel organizers. Online information came most frequently from websites of local tourist organizations (40%), catering and hospitality facilities websites (20%), social networks (19%) and travel organizer sites (12%).

The most frequently used tourism-related sites are: tripadvisor.com (66.7%), lonelyplanet.com (7.4%) and

wikitravel.org (2.5%), while the most commonly used social networks are: Facebook (45.3%), Instagram (12.7%) and Google (4.1%). According to a survey carried out by HORES in 2017 [19], only 12.03% of all accommodation reservations in Belgrade were made through travel agencies. On the opposite, 41.09% were made through different booking systems (websites), while 46.96% were made online directly on the hotel's (accommodation) websites. When it comes to hotel accommodation in Belgrade, 15.45% of reservations were made through travel agencies, 34.03% directly via hotels websites, and 50.52% through search engines, specialized booking websites.

Although some tourists prefer to consult a travel agent directly, the fact is that the majority of domestic travel organizers do not offer the possibility of online bookings on their websites. According to the survey, most websites offer only possibility to send a query for individual arrangements. As a reason as to why it is not possible to make a direct booking or purchase of a hotel arrangement, frequent response was that travel organizers do not have sufficient IT support to provide information on occupancy, sales track through an intermediary, current information on their website and inability to implement online billing.

Presented facts indicate that all players in Serbian tourism need to invest more time and resources (especially financial) in online sales channels and promotions. This is something that foreign tourists, as well as technologically more vigorous domestic tourists, definitely expect. While domestic customers may be accustomed to place their booking through travel organizers, the rise of foreign guests seeking additional web content should encourage local travel agencies and tour operators to invest heavily in online sales and sales support platforms such as Viator, TripAdvisor, GetYourGuide or TourRadar, etc.

Digital economy in retail and customer behavior

Retailers, consumers and shoppers: the fourth industrial revolution

What is the place of retail in new industrial revolution? Retailers, in last several decades, have been taking over

the power from producers. Their favorable position was primarily based on concentration of power. Throughout the years, retailers extended their roles in cooperation with producers: from classical “Customers” (classical buyers) retailers extended to “Competitors” with their private label offers, and “Suppliers” that are selling shelf space and promo activation [6]. Unfortunately for producers, the new industrial revolution will just strengthen retailers’ power, primarily as “suppliers”.

Retailers own “the fuel” of new industrial revolution: direct access and ownership over data about “consumers’ underlying desire or sentiment”, expressed in behavioral data collected through primarily transactions and loyalty cards personal purchase history. Industry will just witness changes in this area: retailers are gradually transforming into data & technology businesses. New revolution and specific position of retail as owner of powerful data pushed PWC experts to propose new definition of the retail, instead of traditional Oxford English Dictionary definition that “Retail is the sale of goods to the public in relatively small quantities for use or consumption rather than for resale”. PWC experts say that “Retail is the temporary or permanent transfer of the possession of goods, and/or access to services, to the public in quantities targeted at the individual, for use or consumption” [23, p. 7].

As long as there are humans, there are also their needs. As long as they keep fulfilling consumption and/or shopping needs, companies will keep being successful. Conflicts between mass market offers and needs fulfillment appear in the area of customization: what is good for everybody cannot be fully relevant for the individual.

Fourth industrial revolution’s data driven solutions allow to serve individual customers according to their individual preferences and, at the same time, to build direct relationships without intermediaries: significant personalization of the offer is made possible.

Personalization and customization are not added value any longer. Customers and shoppers easily embrace all solutions that offer better value to them personally. Serbia is not different to the world in that sense. Although development is lagging behind most developed economies, Serbian shoppers also embrace solutions which simplify their purchase process. Massive usage of mobile devices while shopping and significant changes just in 2 years are reported in GfK Consumer Life for 2015 and 2017.

Customers and shoppers easily embrace new smart (connected) gadgets. No doubt, they want and reward lean, consistent experience and delivery over all touchpoints. However, they pay the experience and value they get by loss of privacy. They are tracked and monitored, they leave traces (data) about their behavior and preferences whatever they do. Those who collect and properly analyze these traces can adjust to individual needs even before they appear. Retailers are just at the right place at the right moment.

How to fulfill shopper needs: Examples of new opportunities opened by new industrial revolution

Retailers are in a privileged position, being the owners of customer’s digital traces (data about individual preferences and choices). They have longitudinal data of individual

Figure 2: Usage of mobile phone while shopping



purchases collected primarily through loyalty cards and transactional data. By knowing these, companies can adjust to individual needs and preferences and be much more relevant to shoppers than in the past. There are many examples of business improvements based on usage of big data as a fuel of growth. Two of them will be described in details.

SO1, Germany

Company was founded in Berlin few years ago with the main task to solve the problem of unselective, and thus, less efficient large investments into promo offers and discounts by using most advanced artificial intelligence approach. Companies (both producers and retailers) were investing millions without fully being aware what was working and what was not working with their promo offer and industry-standard price actions: products are pushed into the market with assigned discounts without taking into account individual buyer preferences [22]. Such promo activities were unselective, sometimes given in situations when large number of shoppers would anyway pay the full price.

Just using data that retailers collect, combined with state-of-the-art algorithms, SO1 (Segment of 1) revolutionized the system of promo and discount offers in the food retail sector. The efficiency of the approach is based on individually tailored offers: Artificial Intelligence first analyzes shopping carts and identifies types of connections between different products, then preferences of an individual customer (from loyalty cards data base), in particular his individual willingness to pay for a particular product and calculated purchase probability. Artificial Intelligence formula, then, determines which combination of products, at what time, should be offered on discount to each individual customer. When the purchase is made, model is self-correcting, improving accuracy of prediction taking in consideration current customer's reaction. All offers are completely individualized in order to increase basket size, so that the products that are offered on promo are relevant to consumer, but at the same time complementing, not substituting products that would be anyway bought. As a result, a retailer can not only increase their revenues and earnings, but also strengthen

long-term, emotional customer loyalty [22]. According to SO1, their algorithms save 50% of the promo budgets to brand managers and increase overall retailers' turnover by minimum 10%. German retailers, like Edeka and Budni, already use SO1's solution.

Delhaize Serbia

Through the years, Delhaize Serbia was organizing extensive NPS studies (Net Promoter Score: type of customer satisfaction studies) interested to measure if their overall service and offer was up to customer's expectations and if it outperformed competitors. During managerial meetings, there was always a question if and how NPS (customers' satisfaction) was connected with basket content. This question initiated series of basket analysis, conducted by GfK, first only on customers covered by NPS studies. By mere understanding of what people usually combine together when they go shopping, Delhaize understood, for the first time with such details, why people were coming to their stores. For example, it was very evident that there was a certain percentage of Maxi baskets with similar content: fresh products needed to prepare next meal (lunch). By looking into basket content and understanding shopping missions from one side and connecting it with customer satisfaction (NPS study) from the other, Delhaize was able to discover in which shopping missions it underperformed and made their customers less happy.

After the initial phase, Delhaize clearly understood that data were a valuable asset for optimization of many processes, not only from their side, but for their suppliers, too. Thus, Delhaize decided to open and sell detailed data to its suppliers in the same manner as it sells shelf and communication space. Now, producers (Delhaize's suppliers) can learn who their customer that comes to Delhaize stores is (customer profile), to track success of their innovation benchmarked with other innovations (new product tracker), to understand category scorecard (growth, decline, place in baskets...), brand scorecard, or to analyze which promo activities worked or not. Above all, they can learn about market basket content and shopping missions, similar to Amazon's success driver: to understand probabilities in details and form the offer on acknowledging which products drive

sales of other products and which are the substitutes. Furthermore, probabilities of purchase are connected to shopper needs (missions). This means that shopper may have different priorities in different shopping trips. For instance, a shopper that buys for regular purchase has different priorities than a shopper that buys for special occasions, like birthdays. Future steps of analyses go into predictive analytics: for example, to predict success of certain in-store efforts and suggest improvements of the offer to achieve targeted sales.

Future expectations are towards improvements in decision automation which would allow to tailor activities to render them more precise in fulfilling needs of their customers. Integration of Internet of Things, more advanced usage of predictive analytics and deep learning is what Delhaize needs to embrace in days to come to stay ahead of competitors.

2017 and beyond: Is there market existence without data utilization?

The truth is: “no one actually wants data, what people want are answers which may be extracted from data, so data are only half the answer. The other half is statistics, data mining, machine learning, and other data analytic disciplines” [48]. Without any doubt, retail development will go into direction of better and more precise adaptation of their offer to a single customer (1 on 1 marketing) based on big data usage. However, this is reality for just a few retailers in the world. For majority, their performance in customer journey is suboptimal and they struggle to connect the dots. It can be expected that retailers massively invest into the area of better utilization of owned data. Visarius [44] from SO1 clearly emphasizes what would shape the future of retail:

1. Further enhanced customer recognition and adjustment to it: not only through loyalty cards and shopping apps but also through facial recognition.
2. Personal product recommendation: not only suggestion what individual likes, but also into direction of suggesting completely new products.
3. Personalized offers: exactly what SO1 created, promotion tailored to individual specifics.

4. Seamless checkout, as in Amazon Go: removing the pain of checkout bottle neck in retail.
5. Voice based shopping: intensive development of voice recognition and communication with machine like Siri or Alexa.
6. Smart products: Internet of Things – products communicating among each other and with individual customer.
7. Automated shopping lists: there are already plenty solutions, however there is significant space for further adjustments.

Case studies and facts presented in this paper indicate that the answer to our research question is closer to the digital revolution than digital evolution of business model in tourism and retail industries. Unforeseen changes in consumer attitudes towards ownership (no possession), comfort (now and everywhere) and many other aspects of shopping indicate discontinuity rather than evolution. Further research of the business executives' attitudes in this respect would be useful to understand perceived intensity of changes.

Conclusion

Further technology development and digitalization will continue to bring many new challenges, as well as the opportunities in the coming period. Future usage and development of cognitive technologies will simplify and automatize purchasing process further. Tourism is awaiting major changes, not only in the process of making consumer decisions, their research and interaction with well-known hotel brands and attractions, but also on further developing patterns of purchase behavior. Managers responsible for revenue in hotels must review existing business models in order to maintain and improve it. Generations of tourists who will grow in the next ten years will have radically different expectations and demands comparing with today's generations.

The same conclusion relates to retail. It can be expected that retail will soon be faced with a situation to have devices as customers, replacing real end-customers to the same extent [23]. It can be expected that devices will have some power (for example through applications

which manage household expenditures) to recommend certain solutions, pre-select and even buy FMCG products without direct involvement of customer on behalf of them. Furthermore, it can be expected that supply chains between retailer and producer be, due to higher productivity, connected into one system: automatized and optimized by cognitive technologies. It would be valuable to investigate further how the overall retailers' value chain flow should be organized when there is a need to organize two business flows: one with humans and other, separate, with different logic, with machines (devices).

Business model in both sectors faces evident discontinuity. It is justifiable nowadays to talk about a revolution rather than the evolution of business model in these two sectors. Examples from both sectors indicate even a more general hypothesis that there is a revolution in the overall service industry.

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