EVALUATION OF SHARED DIGITAL ECONOMY ADOPTION: CASE OF AIRBNB

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Abstract - Electronic market is a new economic space created by the development of the Internet and it has more than a billion of potential customers. In addition to all of the elements that define a classic market, e-market generates entirely new ways of doing business, such as the shared economy.

Shared economy is a sustainable economic system built around the sharing of private assets. This rather new system mostly relies on information technology (P2P) to empower individuals and other profit and non-profit organizations with ways of sharing excess capacity in goods, knowledge and services. Considering the fact that reliance and safety are crucial factors when it comes to sharing private assets, the value of those assets is increased just by sharing information about them. Airbnb.com, as an outstanding example of the new e-business model, enables individuals to rent their unoccupied living space and other short-term accommodation to guests. Besides being a rental mediator, Airbnb is also a social network used by its users to exchange experiences and interests related to traveling.

The research was conducted by an online survey that was posted on the Airbnb Facebook wall. The objective of this research is to determine the structure of Airbnb users and certain advantages and disadvantages of this type of e-business. The data acquired by this research was processed by the methods of descriptive statistics.

Keywords: digital economy, Internet, information technology, e-business, accommodation.

I. INTRODUCTION

Socio-economic phenomenon of tourism is based on the needs of people for a temporary change of residence. Today's modern concept of tourism causes significant changes in the tourism business and tourism development. Modern and sophisticated technology has resulted in improvement of communication, and the crucial role is played by the Internet. By abandoning the outdated forms of communication, the Internet has become an inevitable medium and communication channel and thus has brought distant places closer, facilitated travel organization, and improved the creation and marketing of tourist attractions. The development of the World Wide Web has affirmed the notion that the Internet can be used as a medium in performing various tasks and as an active and attractive business environment. Information and communication technology - ICT is developing rapidly and its change in use in everyday affairs, private, public and other market activities is expected. It eventually became the largest possible market of everything - goods, capital, labor and information content. More precisely, it is a new global economic space and virtual reflection of economic globalization. By the beginning of the 21st century the Internet was profiled as the segmented economic space within which four main economic sectors are now clearly distinguishable [1]:

• sector of producers of Internet infrastructure elements
• sector of providers of Internet services and applications
• sector of Internet entrepreneurs
• sector of intermediaries in the Internet business.

A plenty of people and organisations with innovative ideas of better or even completely new ways of doing business, offering services and sales of tangible and intangible assets find their place in the sector of Internet entrepreneurs. There are such businesses which are not feasible in a traditional tangible business premises, but in the virtual space of the Internet we can notice a trend of specialization to conduct them. In this sector the most visible and the most interesting are the business benefits of e-business. The youngest sector is the one of intermediaries in electronic business, which brings together companies that organize and implement the provision of new types of intermediary services aimed at the better linking of supply and demand in the Internet market. These companies add value to the basic offer and therefore are called value-added services. The users of such companies do not perceive them as a "necessary evil" but as an added value that facilitates the achievement of business goals.

A direct consequence of the development of modern technology and ICT is the emergence of entirely new products and services on the Internet. It really is a global computer and communication "network of networks", which with its capabilities, features and amenities have enabled truly great acceleration of
virtualizing the market of private, public and other business services and activities, both in the social domain and the domain of economic relations [2]. Nowadays, in order to respond to the movement of modern world trends many enterprises transfer their operations from the traditional to the virtual space. This undoubtedly requires a modernization of business processes, so business is becoming faster, more efficient and profitable. The modernization of business processes makes the company extremely competitive in the global market exchange and in everyday competition.

The rapid development of information technology over the past fifty years has determined the information revolution. Today it is at the stage of maturity and has become the focus of business activities. The focus is increasingly shifting from technology to information and to the contents created by information technology. The growth of content and services related to information technology is inevitable as it opens new opportunities and encourages the creation of entirely new contents and services.

Digital Economy - DE is the modern way of doing business with the help of ICT, especially the Internet. Digital networking and communications infrastructure provide a global platform where people and organizations can cooperate, communicate, search for and obtain information as much as exchange digital products and services. Digital economy has led to the transition from the industrial economy to the economy characterized by information, intangible assets and invisible values and a new form of organization. The digital economy is characterized by the globalization, networking, mobility, integration, digital products and services and e-business. Every company faces with three kinds of pressure: the pressure of the market, technology and the pressure of society. The pressure of the market includes intense competition, global economy, changing workforce and powerful clients. The pressure of technology is characterized by technological innovation, accumulation and obsolescence of information technology. The pressure of society includes legislation, i.e. regulations and laws. Application of ICT enables companies to cope with everyday pressures. However, implementation of ICT does not ensure success, but it is necessary for the application of ICT to pursue the objectives, strategy and business processes of the company.

Today tourism is largely reliant on technology. ICT has become the support to many functions of tourism and has opened the door to innovation. Many tasks in the tourism sector, such as direct contact with clients, entertaining and services for clients, communication with customers and partners is being done through ICT. Since the early sixties, information technology and tourism have significantly influenced the mutual development. The first significant application of information systems, databases and computer networks occurred by introducing tourism booking systems, today indispensable in the tourism business. Tourism represents a significant application in the field of electronic business based on the B2C relations (business-to-consumer).

In the process of creating tourist attractions and its adjusting to the demand, various tourism products and services have been developed for the purpose of segmented business and creating specific forms of tourism. Most of the products and services result from an act of free innovation, while others appear as a by-product or a surrogate of indirect intentions.

The impact of the Internet on the tourism sector is reflected in the following. Suppliers, intermediaries and consumers (tourists) are the participants in the domain of the tourism. Suppliers (hotels, airlines, cars and vessels rental companies) provide the tourism and travel products. Tour operators and travel agencies, as intermediaries, create travel packages, and provide services of administration and sales to customers. Tourists as customers are playing role of the end users. The emergence of the Internet has led to major changes in tourism:

• prompted disappearance of intermediaries
• emergence of new mediators on the Internet with changing roles of traditional ones
• enabling direct access to end-users or consumers
• providing currently transmitting reliable information
• enabling display of financial position in real time
• decrease in organizational and distribution costs
• increase in convenience and flexibility.

The Internet has increased the possibility of suppliers’ and customers’ influence on prices, as well as on increase of the rivalry among existing competitors. It has also offered new direct sales channels in the travel industry. In this environment, the new company must be innovative to survive. At the same time, the tourism sector is forced to adapt to new technology.

Tourism today is a global activity which encompasses many areas of human activity including information technology, in addition to economics, ecology, sports and culture. Unlike other areas, tourism has always been open to new technologies. It wanted to meet the demanding needs of individual end users who, with the help of information and communication technologies, are not looking for the raw information only. Individual users want to become travel agents of their own in order to plan and organize their trips independently by using various forms of travel services. At the same time, the Internet has become an important medium of communication with the growing number of users in the world, and certainly the means of achieving the goals of end users who use the Internet not only for booking or buying plane tickets, but also for collecting relevant information for their possible travel arrangements. With the exception of the tourism offer that attracts tourists with its information, there are other types of information which, besides informing, encourage and guide the thinking of tourists, thus directly influencing their decision on taking trips. Useful information is often found on various social portals, blogs and networks, where individuals share their experiences and interests. Such forms of communication and information are increasingly serving the tourist industry, which places them on their websites and uses them as an additional way of attracting tourists.

The Internet is rapidly taking the characteristics of social media, which are:

• openness of communication
• reliance on community
• ease of connectivity
• active participation
• development of the spirit and atmosphere of cooperation.

In the first decade of the 21st century the Internet was transformed into a first-class social media, which in no way diminishes its business value and role. From a business standpoint online virtual space becomes even more interesting with the growth of its variety and diversity, and the interest of its users in what is happening in this space is increasing.

II. AIRBNB ONLINE SERVICE

Going on a trip that does not involve costly agency arrangements and hotel accommodation has become a frequent mission of tourists. The number of online services that enables it is increasing. Through them, one can book a desired type of accommodation in the desired destination and with the price range that is most acceptable to the traveller, in either modest or luxurious accommodation.

For this reason over the last few years, a multitude of Internet services have emerged based on the principle of shared economy or collaborative consumption or peer-to-peer (P2P) marketplaces, which are engaged in renting and sharing accommodation and various facilities and activities. An excellent example of such a service is Airbnb.com, a website that offers exclusive accommodation in a house, apartment, boat, room or something less conventional like a tree house or an igloo. Through Airbnb, accommodation can be found in almost every part of the world, and its advantage is that it is fast, clear, simple and secure. It is this latter reason why it is used by more and more tourists, but also by the renters.

The biggest problem of all these services, including Airbnb, is to establish trust with owners who open the doors of their homes. Airbnb was established in 2007 by the designers Brian Chesky, Joe Gebbia and Nate Blecharczyk. At that time, roommates Chesky and Gebbia could not afford the rent for their apartment in San Francisco, so they made their living room into a bed and breakfast, accommodating three guests on air mattresses and providing homemade breakfast. After renting their living room they earned enough to pay their own rent. They soon realized the potential in growing this market and joined with the programmer Nathan Blecharczyk to start Airbnb and changed the way people think about travel [4]. When they found the site, their goal was to create a base of private accommodation where guests can feel at home, but also to allow them to discover the local aspect of the destination, to connect with those who have already been there and to know what is not mentioned in guidebooks. Airbnb functions as a service used to host people who choose to travel cheaper around the world in an informal and friendly way. Airbnb offers comments and advice of tourists who have already stayed in a particular town, city or village and the users can find out if the accommodation is really as presented. Given that it works as a kind of social network, in a short time and firsthand one can find out where the nearest café or a shop is, as well as all the other practical tips. In order to protect their customers from unpleasant situations while still being able to plan additional facilities and activities, the approximate location of accommodation is marked on the map and the system reveals the exact street and house number only after the reservation is confirmed.

To avoid manipulation in the accommodation rating system, the reviews on Airbnb are purely qualitative. The unwritten rule is that after every staying in accommodation, travellers leave a comment, good or bad, so that future users of accommodation have better insight into the accommodation. But the site does not only assess the hosts and their apartments. As all users must create their own profile, the hosts can also assess their guests, which provide security to future hosts.

The Airbnb guests pay the full price increased for 6-12% which is the Airbnb guest fee, and Airbnb holds the money on its account until the customer appears. In this way, the host is insured in a case of cancellation by the guest, and the guest is insured in a case the accommodation is not as described on the website. In a case the guest does not show up his account will be charged and he is entitled to a refund only if the cancellation is made on time, but with a fee. Hosts are additionally insured by the deposit that Airbnb retains 48 hours after the guest’s departure in a case something is broken. The day after the guest arrives and confirms that the accommodation is as described on the Airbnb site, the owner shall be paid the total amount reduced by 3% of the Airbnb charge. If guests are not satisfied with the accommodation and confirm it through the system, on the same day they must vacate the property and then they can get their money back or ask Airbnb to divert money into an alternative accommodation [6]. The advantage of Airbnb is extremely simple communication with the owners. Once the guest has selected some of the accommodation offered, via e-mail or social networks that are integrated into Airbnb, he contacts the host and sends him his request. Since it is not obligatory to accept every host, the guest must first accept the request, and only then follow the booking and payment. Thus, the system of Airbnb’s business is to a greater extent adjusted to hosts than to guests. Guests do not have much control in the process because the host can cancel their reservation at any time. On the other hand, Airbnb is investing a lot of effort in preventing the misuse of their services in terms of direct negotiation between guests and renters, because in that way the landlord could lower the price for the amount otherwise taken by Airbnb, and thus convince the customer to stay with him. Because of these actions, the system automatically disables the visibility of contact numbers or e-mail, until the booking has been confirmed.

In order to protect their users, Airbnb also started the offline verification during which the guest and host are identified by using identification documents such as passport, driver's license or ID card, and in addition to that a voice and video verification systems. Verification serves as a guarantee that their data on the profile are correct and accurate. Renting accommodation is possible only to those owners who have online verification of their profile. Airbnb also introduced a 50,000 dollars physical-
property guarantee for hosts to feel more secure about renting their accommodation [7].

In addition to online users, Airbnb pays a great deal of attention to the users of mobile phones. Over a quarter of its users visit Airbnb's site via their mobile apps. Today's 'mobile' generation of users finds the experience of knowing the environment more important compared to renting rooms. For example, instead of looking for a shop on the Internet, they will rather ask someone who lives there through the application and get an answer in a few seconds. Besides the world leading destinations, using Airbnb one can easily find accommodation in Croatia. By typing in Croatia in the desired destination, thousands of proposals are offered.

Until a few years ago this American startup was known only to the immediate community of Silicon Valley. After a year of business, its founders have almost given up on it. However, by 2014 Airbnb has reached a figure of over 11 million bookings. The site now offers over 600,000 units in 34,000 cities in 192 countries [3]. Besides being useful for tourists, Airbnb is one of the hottest technology startups in the U.S., and is valued at about 10 billion dollars [5]. Online site meant for finding accommodation around the world is employing over 600 people in 12 offices in the Americas, Europe, Asia and Australia. Expansion beyond the borders of the United States began in May 2011 when Airbnb bought German rival Aceceleo. This lead to the opening of the first international Airbnb's office in Hamburg, and later of another one in London. Given the increasing number of its service users, in 2012 Airbnb has opened six more offices including Paris, Milan, Barcelona and Moscow. At the end of the 2012 the company announced that it would focus on Australia, the second largest market after the U.S., as well as Thailand and Indonesia. Therefore, Airbnb opened an office in Sydney, and the Australians now constitute one tenth of the Airbnb base. A few weeks after the announcement of aggressive expansion in Australia, they also announced expansion into the Asian market, and their goal is to reach 2 million accommodation units.

III. THE QUESTIONING METHOD

The aim of the research is to show the possible criteria for evaluating the structure of the content, manner of presentation of information and communication, internal and external motivation, and the simplicity and accessibility of the Airbnb database.

Testing was conducted through an online questionnaire which was originally placed on the official Airbnb Facebook wall so that it could be accessible to the entire population of Airbnb users. Unfortunately, due to strict moderation policy the link was removed from their official Facebook wall very soon, which reflected negatively on the amount of collected data, i.e. on the number and structure of respondents who filled out the survey. The online survey was opened during February 2014, and during that period a random sample of 118 respondents filled it out (77 females, i.e. 65.25% of the sample and 41 male respondents, i.e. 34.75% of the sample with the average age of 25 years). The online questionnaire consisted of 13 questions and all the questions in the survey were closed type with multiple choice answers.

IV. RESULTS AND DISCUSSION

Analyzing the survey results, we conclude that most of the respondents were from Croatia (54.23%) and Italy (18.21%), followed by a less significant number of those from France, Germany, Great Britain and other countries. Most respondents (38.1%) have a monthly income of less than 1,000 Euros, which was expected considering the age structure of respondents and the standard of living in the countries where most respondents come from. The average monthly income of the respondents amounted to 1529.66 Euros (SD. 1284.34). With the further analysis of the results, we see that 41.53% of the respondents travel 2-3 times a year, 21.12% of the respondents once a year. Ultimately, the respondents travel on average 2-3 times a year.

In the questionnaire there was a set of questions from which the TRI-index (Technology Readiness Index) was calculated for every respondent. Technology Readiness Index (TRI) is used to calculate the willingness of respondents to adopt and use new technologies. This index is based on the examination of feelings that the respondent expresses for new technologies. Components, i.e. feelings covered by the TRI-index are: optimism, innovativeness, discomfort and insecurity. The above feelings are measured by Likert scale as a series of statements in which the respondents can assess how much they agree or disagree with a given statement on a scale from 1 to 5. The obtained result is the assessment of how much a particular individual or respondent is willing to accept new technologies. Readiness assessment includes the evaluation range of -20 to +20. If the above assessment scale is divided into five equal parts, it is possible to distinguish between the following categories of respondents:

1) people reluctant to use new technologies (from -20 to -13)
2) paranoids (from -12 to -5)
3) skeptics (from -4 to +4)
4) pioneers (from +5 to +12)
5) researchers (from +13 to +20).

Therefore, if the level of TRI-index is higher, the tendency of respondents to the acceptance and use of new technologies is greater.

Given the age of the respondents we get the expected structure of the respondents with respect to the TRI-index, i.e., we have 36.44% of sceptics, 61.86% pioneers, and 1.69% of researchers. 12.71% of the respondents have found out about the Airbnb service through newspapers and television, 36.44% via the Internet, 38.14% from friends or relatives, and 12.71% from other sources. 44% of respondents use this service to rent their own accommodation, 35.59% are planning to do so, while 20.33% of them are not attracted to the option of renting their own accommodation through the Airbnb service. Our respondents spend 3-5 days (51.7% of respondents) or one week (46.6%) on a trip in average.
Table 1. presents the average and the most common assessments of the Airbnb service elements arranged in groups according to the TRI-index of respondents.

<table>
<thead>
<tr>
<th>Advantages of Airbnb</th>
<th>All Average</th>
<th>Skeptics Average</th>
<th>Pioneers Average</th>
<th>Skeptics Mod</th>
<th>Pioneers Mod</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of use</td>
<td>4.364</td>
<td>4.139</td>
<td>4.493</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Graphical design</td>
<td>3.949</td>
<td>3.558</td>
<td>4.173</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Search options</td>
<td>4.322</td>
<td>4.162</td>
<td>4.413</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Payment methods</td>
<td>3.898</td>
<td>4.023</td>
<td>3.826</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Payment security</td>
<td>3.720</td>
<td>4.000</td>
<td>3.560</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Information about the host</td>
<td>4.296</td>
<td>3.883</td>
<td>4.533</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Guest and host service fee amounts</td>
<td>3.712</td>
<td>4.023</td>
<td>3.533</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Communication with the hosts</td>
<td>3.923</td>
<td>3.046</td>
<td>4.426</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Accommodation availability check</td>
<td>3.347</td>
<td>3.604</td>
<td>3.200</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Accommodation price transparency</td>
<td>3.992</td>
<td>4.441</td>
<td>3.733</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Table 2. presents the average and the most common assessment of the Airbnb service components by groups with respect to the TRI-index of respondents.

<table>
<thead>
<tr>
<th>Components of Airbnb</th>
<th>All Average</th>
<th>Skeptics Average</th>
<th>Pioneers Average</th>
<th>Skeptics Mod</th>
<th>Pioneers Mod</th>
</tr>
</thead>
<tbody>
<tr>
<td>The amount of attention that is paid to the needs of users</td>
<td>3.347</td>
<td>3.000</td>
<td>3.547</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>The amount of data on the host and accommodation</td>
<td>3.149</td>
<td>3.242</td>
<td>3.587</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>The possibility of changing the booked date</td>
<td>3.707</td>
<td>3.581</td>
<td>3.786</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>The functionality of the service (search speed)</td>
<td>3.881</td>
<td>4.140</td>
<td>3.733</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>The possibility of changing accommodation on arrival due to dissatisfaction with accommodation</td>
<td>3.338</td>
<td>4.116</td>
<td>2.893</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>The utilization of information and communication technologies for booking</td>
<td>4.067</td>
<td>3.605</td>
<td>4.333</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

From the data given in table 1, we can see significant differences in the average assessment of individual service elements between the respondents groups of sceptics and pioneers, in the elements: ease of use (F-test = 3.868, p = 0.05), search options (F-test = 2.443, p = 0.05), information about the host (F-test = 4.004, p = 0.05).

From the data given in table 2, we can see significant differences in the average scores of the individual components of the service between subject groups of sceptics and pioneers, and they include the components of the functionality of the service (search speed) (F-test = 1.978, p = 0.05), the possibility of changing accommodation on arrival due to dissatisfaction with accommodation (F-test = 2.255, p = 0.05), the Airbnb ways of doing business as a form of digital economy (F-test = 1.999, p = 0.05).

From the data given in table 3, we can see significant differences in the average assessments of particular shortcomings of service between the respondent groups of sceptics and pioneers, in various

1 The ANOVA F-test is designed to test if two population variances are equal.
components: the amount of commissions for the hosts and users (F-test = 1.912, p = 0.05), the possibility of hosts last minute cancellation (F-test = 1.696, p = 0.05).

V. CONCLUSION

Airbnb is a fast-growing online service, i.e. an online travel agency for a broad community of clients that offers a worldwide connection of hosts and customers seeking accommodation. The service itself is funded by the commission charged from hosts for the contracted accommodation which amounts to 3% of the amount defined by the host and which is significantly less than the classic tourist agency commission (20-30%), and by the commission of 6% up to 12% charged from guests. Given that today's younger people are good users of information technology, which is evident from the calculated TRI-indexes of respondents, the popularity of the Airbnb service is growing rapidly. This service is best characterized by its ease of use, search options and a lot of good information about the host, the method and the security of payment. Top rated components of this service are the ability to change the reservation date, the functionality of the service and the use of information and communication technologies used for booking.

From previous results we notice that there are no major discrepancies in the average assessments of particular shortcomings, and we see that there are also significant differences in the priority of the greatest shortcomings of the service. We conclude that the biggest drawback is the possibility of the host’s last-minute cancellation, followed by the necessity of checking the availability of accommodation with the host and cancellation policies and fees. The group of pioneers who are familiar with the new information technology is not highly dissatisfied with a lack of additional communication with the host and the host's possibility of cancellation at the last moment because they will, with the help of information technology, quickly and easily find alternative accommodation. Because of reduced commission this way of doing business where everything takes place in a virtual world is becoming increasingly common and popular among hosts and users looking for accommodation. This service is significantly growing from year to year and it is expected that more such services, i.e. online travel agencies or companies will become a good example of the digital economy and the companies that generate profits with minimal costs. This research can serve as guidelines about what future online travel agencies should improve or change to make themselves more acceptable to users.

LITERATURE