

# Entrepreneurship in the age of digital tourism: The future prospects from the use of robots

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**Abstract:** Tourism is an industry that is mostly based on the information that can be made possible through the assessment of the tourist product and the tourist service. During the past years we have seen important changes in the industry from the rapid growth of the use of new technologies on tourism, such as the Internet and social media, which have changed the way that the industry operates today. However, it is important to see into the future and identify what can be the next change in the tourist industry. By having examined the current literature, this paper had identified a future opportunity for the entrepreneurs in the tourist industry and this is from the use of robots for improving the service quality on tourism. The paper concludes that there is a need for future research on this field which can create new opportunities for entrepreneurs.

**Key words:** entrepreneurship, innovation, new technologies, robots, Internet, tourism

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## 1. Introduction

Today the consumer lives and moves into a digitized world where the Internet and its applications play a predominant role in everyday life. The Internet is an important part of our lives and has changed our everyday activities as well as interactions with other people. The Internet has enabled its users to communicate directly with each other and share their interests. This link changes the way people communicate, since communication with other people from around the world is done with just one click. Social media (SM), such as Facebook, which has almost twice as many active users as the number of people living in Europe, have a special role to play.

SMS do not have a common definition that has been adopted by those working in this field and therefore there is confusion among researchers. For example, Kaplan and Haenlein (2010) refer to the fact that there is a group of WEB 2.0-based applications that allow content creation in collaboration with the consumer, as well as direct communication between the developer of the website and its visitors. In another case,

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Chan and Guillet (2011) report that SMs are platforms that allow people to communicate with each other and exchange views and ideas.

In another approach, social networking is a behaviour in which people develop relationships to survive (Coyle and Vaughn, 2008). Today, due to the rapid growth of the Internet, social networking has expanded to a direct link between people through the Internet. People can interact with each other to exchange ideas and opinions, which ultimately shapes their views on a range of critical issues such as their consumer habits. Now consumers are often affected and also influence other consumers with their comments and valuation on products and goods, thus also affecting the relation of consumers to products and markets (Cheung and Lee, 2012).

It should be noted that the Internet is an important tool for all sectors. However, the presence of tourist businesses on the Internet is also important because it allows almost all businesses to have direct access to the public through pure travel websites and social media and to influence the public and its behaviour. Middleton et al. (2009) refers to the fact that in today's economy based on Internet-based information, the greatest benefit is for small and medium-sized destinations. For many years, especially in the 1990s, tourist industry depended on a few intermediaries, mainly tour operators, on whom thousands of businesses depended. Small businesses did not have the resources to access the consumer directly, since traditional media advertising required considerable financial resources but also human resources.

The shift from the traditional tourist paradigm into the digital tourist paradigm means that there are many opportunities and new niches for those who want to take the risk and invest into digital tourism (Belias et al., 2018). Hence, it is important to make a literature review over what can be the key challenges for an entrepreneur in today's digital tourism. For this reason this paper will examine the current issues and challenges on digital tourism, such as the Internet and social media, while it will go much further by investigating what can be the future role of robotics on tourism from the entrepreneur's perspective. Hence, this paper is going to fill in a gap in the existing literature since it will move on beyond the existing research by emphasizing the need to make a research on robotics and what can be the opportunities for an entrepreneur. The paper will rely upon the existing literature. This means that it will use both the latest papers, as found on online databases such as EBSCO and Science Direct.

## **2. Literature review**

### **2.1. Entrepreneurship**

Entrepreneurship is a complex concept and cannot be defined with precision. Many definitions have been attributed to the term. The term 'entrepreneurship' has often been used to describe concepts such as creating, establishing, managing a business or organization. Entrepreneurship is a way of thinking that guides the activities of one or more people and encourages them to recognize opportunities, take initiatives that lead to economic gains and gains (Kizner, 2005).

Marshall in the *Principles of Economics* (1890) spoke of four factors—factors of production: land, labour, capital and organization. Entrepreneurship is the organization that is needed to coordinate and operate the other three factors. More generally in economic theory, entrepreneurship is considered to be the fourth factor of production. The combination of inputs for wealth creation, leadership, competitiveness, corporate responsibility and innovation are key components of entrepreneurship. According to Pizam and Milman (1993), it is a way of thinking and the act that is directly related to the opportunity requires a holistic approach and balanced management. It also requires continuous thinking and activation in a way designed to discover new profit opportunities (Marques, 2006). It involves the realization of opportunities that may not provide the necessary resources (Stevenson and Jarillo, 1990).

It became particularly known as a term after 2000, although in many European countries its widespread use began in the mid-1990s. The main reasons for the strong entrepreneurial commitment were: (a) that in the 1980s and 1990s many new businesses started to operate and experienced rapid growth; and (b) that the issue of employment started to be of interest to society and by extension to the politicians (Drucker, 2015).

## 2.2. Digital tourism

In recent years there has been a rise in living standards and demographic changes as well as changes in preferences for travel destinations and modes of transport, which creates new conditions in the tourism market. The main features of tourism today are the fact that it offers more flexibility, more quality and less mass products as well as competitive prices and a variety of services. Today tourists show a dynamic behaviour and demand more and more detailed information. Although tourist travel packages still characterize the market, tourism, according to which the tourist is looking for information on his own, is growing more and more. The customer's ability to locate information and buy specific services is being developed over the last few decades. In order for a sector to respond to the new challenges of the market, it is necessary to develop telecommunication and technical infrastructure (Baird and Parasnis, 2011).

### 2.2.1. The evolution of the Internet: Reasons for its fast deployment from entrepreneurs

The Internet, as it is today, has begun in the 1960s in America where the cold war prevailed. It was created by the need to create a safer telecommunications system, a need that led to the idea of interconnecting computers across the globe, with the development of communication applications. The Internet today is a global network connecting computer systems and interconnecting local and broadband networks (Baird and Parasnis, 2011).

With the help of a set of appropriate software applications, Internet users can communicate with each other, access information provided by specific nodes on the network, and transfer files between computers that are interconnected. All the different uses of the Internet and implemented by a series of executable applications are described as Internet services. The main purpose of the Internet is the easy way to exchange information and access it quickly and without geographical limitations (Binkhorst and Den Dekker, 2009).

On a computer that is an Internet hub and accessible to the user, the service must be organized with the help of the appropriate software. Each service manager should be allowed to use it by the individual user. The user should have the appropriate software to use the services. The Internet is an ideal environment for tourist and business activities and it is of particular interest to the tourist sector. Today with the Internet, the spectrum of the tourism industry has direct access to a variety of sources of information at a global level, while agents can exchange messages quickly and economically. At the same time, there can be direct and effective support for the clientele of tourist destinations. In this way, products and services can be promoted as well as information to be promoted around the world. All together, products and services can be sold through websites, and business strategy processes and ways to assess them globally can be improved. An important element of this activity is that the cost of communication between the customer and the intermediary body of tourism is reduced. Finally, communication between collaborating companies is supported (Balfanz et al., 2002).

### **2.2.2. Benefits for tourists from using the Internet**

The aforementioned activities operate in a way that benefits the final tourist—consumer who has all the information he/ she needs in order to arrive at the best possible solution. The Internet influences and changes in depth the value chain in the tourism sector as it is today the new medium through which transactions are made and which until recently has been conducted differently between tourism businesses and their clientele. At the same time, it has allowed direct contact between the customer and the supplier, while it has a significant impact on the role traditionally played by the market players so far and has strengthened the role of intermediaries currently active through the Internet. In recent years there has been a very large expansion of Internet use at international level, while cost savings and rapid development of its infrastructure have been achieved. Information and communication technologies can make a significant contribution to improving performance, productivity and competitiveness during the organization of tourist events. Developments in Information and Communication Technologies have a tremendous impact on how the business strategy of businesses in the tourism sector functions as they can make a significant contribution to increasing business productivity (Borràs et al., 2014).

These systems are already used in tourism and can support every operational function. They can provide all the tools that are needed to find important and profitable details in the tourism market that can promote products with a range of specialized tools in specific market segments. Information and communication technologies significantly reduce costs and increase efficiency. With the use of ICT, tourism businesses can have the ability to differentiate the product they offer, and ultimately enjoyed by the final consumer with the added value the latter has (Chen et al., 2011).

### **2.2.3. Benefits for the entrepreneur from using the Internet**

With the use of ICT in the tourism sector, all operational functions can be supported. ICT provides all the tools that are needed to search for significant profitable sectors in the marketplace to promote products by specialized means. Through ICT, spending can be reduced and

the information, communication and the way the tourism sector works can be significantly increased. ICTs enable the consumer through the tools they offer to buy the right product while providing suppliers with the tools they need to develop, manage and distribute their products globally. Through ICT, the tourism industry can develop and market the products it desires (Dirks and Keeling, 2009).

In order to make effective use of ICT, specific conditions such as the management of the tourism organization, which should assess the capacity of ICTs and the future of tourism organizations, must be taken into account. At the same time, industry needs to address product demand and marketing mix in order to create added value in money and in the time it invests. ICT must be managed carefully, because it is crucial for the organization of tourism in order to protect the interests of the tourist. Finally, tourism intermediaries need to realize that the evolution of ICT represents a revolution in the tourism industry. The Internet is a new economic environment in which business processes are conducted. E-commerce is a sector that is constantly evolving and more and more tourist organizations can develop Internet services using ICT (Hartley, 2005).

This mode of entrepreneurship is now known as e-tourism and is not just a process of using a computer or a network as the business uses an entire system that can be applied by the tourism industry. All these factors become indispensable in ICT in order to ensure the survival and competitiveness of tourism. The use of electronic ICT methods and applications can provide the tourism industry with a significant competitive advantage. E-tourism is essentially the use of ICT in the tourism industry. It is the purchase and sale of tourist products and services through electronic channels such as the Internet. E-tourism includes all those applications as well as strategic and management issues related to the use of new technologies. ICT includes a comprehensive range of electronic tools that facilitate the strategic management of organizations and businesses while allowing the user to manage the information, the operation and the process, as well as to communicate with the tour operator in order to achieve the best possible outcome for the organization (Nam and Pardo, 2011).

The Internet today leads to a new way of responding and to a consumer behaviour that is changing as the revolution of a whole chain of tourist values has come. Using ICT in tourism can increase efficiency and at the same time reduce costs through the automation of specific processes such as automatic customer check-in to hotels or passengers on an airplane. In addition, customer and sales data can be used to support marketing such as forecasting production management. As a result, not only the processes change, but new services can also be designed to expand the range of choice of tourism services in order to shape a product and adapt to the customer's specific needs and preferences (Rainisto, 2003).

The introduction of ICT in tourism has been created by the need for large units such as hotels and travel agencies as well as air services in order to make the production process faster and at a lower cost as well as to have a rapid development of ICTs that cannot leave unimpaired tourism industry. The new technological data as well as the prospects and capabilities they give to the industry have turned the interest of both large and small-sized enterprises into adopting new technologies in the framework of the computerization they carry. ICTs can work beneficial at every level in order for a modern tourism business to be efficient from production and management to marketing and strategic planning. The tourism industry is

always characterized by high utilization of ICT both internally and externally, to individual businesses in the sector as well as to the online distribution of tourist products. This is largely due to the complicated standard work and its processes and to the complex structure of the tourism industry, which includes a large number of enterprises belonging to different categories and sizes and being usually at a great distance from the final consumer (Mkono, 2018).

Through ICT, the process of issuing tickets and bookings to tourist services has become faster and more effective over time while ICT programmes have been extended to all sectors, such as coastal companies, car rental and travel agencies. In this way, once tourism has begun to develop, technology and information are used both for work done in hotels and for how businesses communicate with each other. The use of ICT in the tourism sector offers a number of advantages over traditional ways of approaching tourism, and from these advantages all factors in a tourism chain benefit as access to the tourist product and service is easy and fast, the customer can access a range of information on any product without cost within 24 hours and throughout the year (Chen et al., 2011). By using the Internet, the client does not have to contact specific travel agencies to ask for price and sightseeing information as he can collect the information he wants on his own (Navio-Marco et al., 2018).

Finally, with the ICT, the Internet is easy to use due to its wide spread and penetration. The Internet can be accessed by a large number of consumers who now know how to use it with ease. This allows customers to interact with other customers in a range of communities and forums to exchange ideas and compare their experiences. For the most part, modern tourists use blogs and forums in order to be the same producers of tourist information and provide travel advice to other stakeholders (Binkhorst and Den Dekker, 2009).

ICTs have many advantages for a tourism business as they can expand the position that this tourism company has in the local and international market with a minimal capital that the company itself can find faster to reach more customers and better suppliers. Suppliers can today sell products and services through the Internet directly to their customers, without using intermediaries. In addition to ICT, small and medium-sized enterprises can be strengthened and supported in order to reduce the gap with larger firms (Navio-Marco et al., 2018).

Small and medium-sized businesses can now advertise and promote the product they sell quickly and at a low cost worldwide without being dependent on travel agencies or agents. In addition to ICT there is a continuous improvement of the services provided and the continuous development of the technologies which has the effect of developing and improving the services provided by each tourist company. At the same time, there is a better understanding of the client's needs based on research and interaction, and information gathering. For the client, the time between the availability of the capital it offers to a tourist business and the reception of the services it will enjoy will be reduced. At the same time, business processes are simplified and automated, which results in lower costs and reduced bureaucracy, so ICT is based on an important relationship in customer communication with the business. Because of the global accessibility that exists in the information of each business, the customer can develop in this business, trust. Finally, the image of the company is improved. An enterprise that does not create a website is in danger of presenting a bad image to the outside and a non-modern business activity (Dwivedi et al., 2012).

Today, businesses involved and active in tourism indirectly or directly seek to offer the best possible quality to provide information to their customers. Today it is impossible for the tourism industry to operate without the necessary information support both internally and externally in order to interconnect electronically and distribute its tourist product. The twenty-first century has been marked by rapid developments in the area of ICT that have directly affected the wider field of tourism. The use of ICT is largely due to complex and standardized processes as well as to the complex structure of the industry, which includes businesses of various categories and sizes with significant features such as the geographical dispersion they have in space and the distance from consumers. Undoubtedly, the use of ICT has contributed significantly to improving performance and productivity. Today, ICTs create significant opportunities for tour operators to upgrade their services while also developing new business activities, a feature that can lead to a strategic advantage over their competitors. The emergence of ICT is determined in the early 1950s where there has been a large increase in international travel and exchange receipts, and new databases have emerged from information systems and provide a large amount of information to travellers while at the same time performing a technical and functional role as they allow employees to identify their clients' wishes and those that do not satisfy them (Dirks and Keeling, 2009).

### **2.3. The use of ICT in the Greek market—opportunities for an entrepreneur**

In the Greek market, online detention centres have not used all the opportunities offered by ICTs, although the development of ICTs since 1990 has been rapid and the spectacular development that has been observed in recent years in the use of ICT by its users shows that there is a tendency that reservation systems tend to be substituted. The Internet today is an ideal environment for professional and business activity especially in the field of tourism. The features of the Internet are that it offers online and large geographic coverage, while at the same time it has low costs, characteristics that have the effect of being directly applicable to booking systems. For this reason, hotels have the ability to promote their products easily and quickly through the Internet, making them known worldwide (SETE, 2015).

It can therefore be predicted that in the field of ICT there will be future developments in which tourists-consumers and intermediaries will be able to join a large information network where strong competition will exist and there will be many variables and factors that make up the landscape. Tour operators now pay special attention to their direct suppliers who are located in tourist destinations. Tourism demand often comes from different and distant geographical areas and must be transferred to the destination of travellers so that the latter can consume the products of the suppliers. From this, it is understood that there is a large amount of information to be transferred from the direct supplier and the development organization to international demand and vice versa. Information on tourism is a vital and key factor in the well-functioning of the tourism industry and in this way the use of communication and information technologies can contribute significantly to the efficient and efficient operation of the tourism industry, both economically and micro-economically. Due to the above, each tourist intermediary brings together and communicates the tourist demand with the direct supplier

by providing the latter with specific distribution channels for the promotion and sale of his products with specific economic rewards (Nam and Pardo, 2011).

## **2.4. Social media and the tourist product**

Information and communication over the Internet is nowadays a widespread tool for the choice of destination by everyday tourists. As Li et al. (2017) notes, potential online travellers are constantly growing and tourism products, including booking, take place through the web. In its report, the European Travel Commission (2015: 13) points out that recreational and business trips are designed by majority (64–65%) over the Internet, including booking airline tickets and hotel rooms.

Until recently, the Internet served to obtain information only through the official websites of travel agencies and measured tourism organizations that advertize specific countries and locations. Social media provide travellers with the opportunity to exchange information about their past vacations and business trips (Chan and Guillet, 2011), and this communication is both informative and advisory. In our time, the degree of information on tourism products through social media continues to grow, while information from conventional media such as television, radio and newspapers is declining. In a large survey that looked at results from 19 nations, 60% of Internet users used one or more social media once a day and these users, one in two, ‘uploaded’ to their page information related to one product or company (Insites Consulting, 2012).

The great impact of social media, according to several scholars, is that users can create content themselves, informative, entertaining and entertaining. On the other hand, older information media made the user passive since there was no interaction but one-way information. In the tourism sector, social media have been ‘embraced’ by Internet users in tourist destinations searches and holiday planning and business trips, while feedback with other, often unknown, travellers from around the world, allows interaction through messages and comments, images, video and audio, and through narrations of their travels. This type of open communication takes place through many Internet providers, such as social media (e.g. Facebook and Twitter), websites that are dedicated to travel and restaurants such as TripAdvisor and Yelp, as well as personal blogs (Berne-Manero et al., 2018).

Schegg and Stangl (2017) underline the importance of oral-to-mouth communication that, through the Internet, differentiates the relationship between consumers and service and service providers around the world. Internet users who want to buy a product or service can now, through social media, be informed by users who have made purchases in the past and have their own experience. At the same time, this communication takes place not only between family members, friends, or even known ones, but also among people who have never been close friends from every corner of the world.

## **3. Discussion. The future potentials of digital tourism and opportunities for entrepreneurs: The case of robots**

The case of digital tourism surely paves the way for new opportunities for entrepreneurs. For example Chestler (2016) has mentioned that robots have already managed to dominate



manufacturing. Most of the large assembly lines, such as on the car industry, have relied on the use of robots. However, there is a window of opportunity in the case of the service sector where robots have not been used in such a great extent but still they can become a future prospect. Ivanov and Webster (2017) have mentioned the increasing interest of the tourist industry on robots though they are still in a very early adaption stage. In this case it is important to mention that most of the successful startups are those who are getting involved on the very early stages or even those who are creating new technologies and innovations, such as Apple, Google and Facebook. In this case the adoption of robots is slow but steady, especially from high-end tourist companies.

Papers such as Ivanov et al. (2018) and Kaivo-Oja et al. (2017) have argued that there are already some companies, mostly startups, which have produced solutions for tourist companies which are using robotics such as automatic bars and robots which welcome the guests. Also there are startups which are creating robots that can do part of the housekeeping, such as cleaning the floor. Of course there are several reservations over the value of robots along with the impact on the labour markets (Thomas, 2017).

Nonetheless, if we look back into all of the latest innovations of the past 20 years, we will notice that innovations which created anxiety and fear over the consumers and the professionals, such as the introduction of low cost flights and the online booking, today are accepted as some of the most common practices and policies in the tourist industry, while the early innovators (such as EasyJet and Booking.com) today are dominating the market. Hence, an entrepreneur may have a lot to gain from investing into robots in the tourist industry.

#### 4. Conclusions and recommendations

The tourist sector relies on the use of new technologies. If we look back into the industry's development over the past years, we will notice that technologies play a key role into its growth and they have become a mean of development. Actually, tourism is an industry where innovation has become the 'game changer' of this industry. The paper has concluded that new technologies play a dominant role in the tourist industry. However, it is important to see what is next. The next big thing is the use of robots in the tourist industry. From the perspective of entrepreneurs this is a big opportunity since it can change the way that tourist services are offered. Hence, someone who is willing to invest now in this industry, he/ she can benefit from this. Nonetheless, the paper has also noticed the lack of such research on an empirical level. For this reason it would be wise to see more research in this field along with case studies over successful attempts to create start-ups by using robots in the tourist industry.

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## Przedsiębiorczość w dobie turystyki cyfrowej. Perspektywy związane z wykorzystaniem robotów

**Abstrakt:** Turystyka jest branżą, która opiera się głównie na informacjach uzyskiwanych dzięki ocenie zarówno produktu, jak i usługi turystycznej. W ciągu ostatnich lat zaobserwowano istotne zmiany w tej gałęzi gospodarki, polegające na szybkim wzroście wykorzystania nowych technologii, takich jak internet i media społecznościowe. Zmieniły one sposób funkcjonowania rynku usług turystycznych. Dlatego niezwykle istotne jest podjęcie próby prognozy dotyczące

zmian, które mogą pojawić się w branży turystycznej. Na podstawie literatury przedmiotu w artykule przedstawiono możliwości, jakie otwiera przed przedsiębiorstwami turystycznymi wykorzystanie robotów, które mogą się przyczynić do poprawy jakości usług świadczonych przez te przedsiębiorstwa. Stwierdzono, że istnieje potrzeba kontynuacji badań w tym zakresie, gdyż mogą one stworzyć nowe możliwości dla przedsiębiorców.

**Słowa kluczowe:** przedsiębiorczość, innowacje, nowe technologie, roboty, internet, turystyka