

# Technology as a Catalyst for Tourism Entrepreneurship: A Critical Insight

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## Abstract

The purpose of the present article is to highlight the importance of technological advancement and the role of travel technology providers in the tourism industry. The present study also highlighted the current technological changes and trends in the tourism and hospitality industry. A systematic study of the existing and emerging technologies in the tourism sector and how travel technology providers help entrepreneurs to organize and automate the travel business is presented in the form of a viewpoint. Travel technology providers help tourism enterprises by providing services like API integration, customer relationship management (CRM), portal and website designing, and more. Covid-19 has scaled up the technological changes and boosted digital entrepreneurship worldwide, bringing various technological trends to the tourism and hospitality industry. To meet the needs of modern-day travelers, travel agents and tour operators are considering taking their travel business online and opting for innovative travel technologies. The present study contributes to the existing literature and helps tourism practitioners to remain competitive and cater to the ever-changing demands of today's travelers.

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**Keywords:** Entrepreneurship, Technological advancement, Tourism, Technology providers, Covid-19.

## 1. Introduction

Every industry has been affected by changes in technology and consumer behavior. Augmented reality, virtual reality, Robots, and cashless payments, are just a few of the technologies already in use in many industries and areas around the world (Buhalis, 2020). These innovative technologies have transformed the entire production and management system of the industries. In today's global competition, business survival is highly dependent on digital competencies (Datta and Nwankpa, 2021). Digital advancement and the use of novel technologies among enterprises are also being promoted and encouraged by governments (Bai, Quayson and Sarkis, 2021; Chen *et al.*, 2021).

Technological advancement and tourism have been going together for many years. With the advent of information and communication technologies (ICTs) in the 1980s, the tourism and hospitality industry underwent a dramatic transformation, mainly when the Internet was introduced in the late 1990s (Buhalis and Law, 2008; Law, Qi and Buhalis, 2010; Aldebert, Dang and Longhi, 2011). ICTs play an indispensable role in increasing the effectiveness of tourism enterprises. Innovative technologies like robots, chatbots, virtual reality, and the Internet of things, are transforming the tourism sector (Buhalis *et al.*, 2019). In fact, the tourism business has grown to be one of the largest categories for selling products and services on the Internet (Navío-Marco, Ruiz-Gómez and Sevilla-Sevilla, 2018).

Technological advancements have transformed the tourism sector entirely in recent decades (Buhalis, 2020), but due to Covid-19, digital entrepreneurship has increased significantly (Modgil *et al.*, 2022). The tourism sector has been compelled to change the functioning and strategies of organizations due to technological development (Buhalis and Law, 2008). However, many tourism companies may not have much access to and knowledge of how to implement and monitor digital technology, allowing travel technology providers to manage digital operations on their behalf (Szalavetz, 2020). Travel technology providers can help tourism enterprises in customer relationship management (CRM), API integration, portal and website designing, and

more. With the correct travel technology, tourism enterprises would be able to focus more on market research and develop more inventive sales procedures and, as a result, would be better able to meet the customers' expectations.

This paper offers a critical review of the existing and emerging technologies in the tourism and hospitality industry. The objectives of this viewpoint are 1) to provide comprehensive knowledge about the impact of technological advancement on tourism entrepreneurship, 2) to highlight the importance of travel technology providers for travel companies, and 3) to study the current technological trends in the tourism and hospitality industry.

## **2. Technological Advancement and Tourism Entrepreneurship**

Technology has revolutionized the tourism and hospitality industry. Several new technologies have evolved in the past two decades, including chatbots, virtual reality, facial recognition, cashless payments, contactless services, robots, etc. These innovative technologies have changed the way tourism enterprises used to operate.

### ***Virtual Reality***

Virtual Reality (VR) is a computer technology in which sights and objects seem real, which gives viewers the sense of being wholly immersed in their environments. Technologies like virtual reality have changed the way tourists experience tourism and hospitality-related products and services. Tourists are more interested than ever before in using virtual reality technology to experience various tourist places, hotels, and museums before making a trip decision (Loureiro, Guerreiro and Ali, 2020).

Many tourism enterprises have started using virtual reality technology for the promotion of destinations and hotels. Customers can enjoy the beauty of nature, such as deserts, seas, peaks, a diversity of flora and fauna, climate, and more, with the help of virtual reality technology. Customers can also experience the destination infrastructure, like hotels, restaurants, clubs, parks, shopping malls, etc. With the help of virtual reality, customers not only get information about these tourism products and services but also get first-hand experience (Van Kerrebroeck, Brengman and Willems, 2017), which further influences their decision-making and purchase behavior.

### ***Facial Recognition***

Facial recognition is a biometric technology that identifies someone based on their face topography (Unar, Seng and Abbasi, 2014). Facial recognition technology has gained greater importance across various industries in recent years. Facial recognition systems are used for security purposes and to provide a personalized experience to customers. It is also being used widely in the tourism sector. In two of the Marriott hotels of China, guests can arrive, go to a kiosk, and check in using face recognition technology without queuing or waiting for a staff person (Revfine, no date). Various quick-service restaurants have also adopted facial recognition systems, such as KPro by KFC in China (Hawkins, 2017), BurgerFi (Hamstra, 2018), and Malibu Poke in Dallas, Texas (Rankin, 2017), etc. Several airports have also started using facial recognition technology, which allows travelers to verify their identification and board planes by facing toward the camera for a few seconds, eliminating the requirement for a boarding pass.

### ***Chatbots***

Chatbots are pre-programmed computer software units designed to respond to client inquiries (Robinson *et al.*, 2020). Chatbots can provide novel experiences to customers and help them swiftly find the services they require. They are commonly used to provide immediate customer support by answering routine questions in any language and assisting enterprises cut staff expenditures. Chatbots are available around the clock, 365 days a year (Robinson *et al.*, 2020), and can even save guest data to make recommendations based on previous purchases and behaviors (Ukpabi, Aslam and Karjaluo, 2019). Chatbots can provide information about tourist infrastructures like neighboring hotels, restaurants, clubs, parks, shopping malls, entertainment, adventure, and other tourist information.

Chatbots are extensively used by tourism enterprises such as travel agencies, hotel booking sites, and airlines to provide information and recommendations to the customers (Hosseini, 2020) and provide basic customer-care support with chatbots/AI-based systems handling 85 percent of customer service in the tourism industry (Ukpabi, Aslam and Karjaluo, 2019). Chatbots can provide support to multiple languages. As a result, users

can instantly get answers to their questions, irrespective of their language. For example, Booking.com's chatbot service and support are available to English-language users and automatically answer 30% of client questions in under five minutes (Calvaresi *et al.*, 2021).

### ***Robots***

Robots are machines that can automatically perform complex tasks, either through programming or artificial intelligence. Advances in artificial intelligence have facilitated the evolution of robotics. As a result, the number of functions that robots can perform has also expanded. Robot receptionists have become a popular trend in the tourism and hospitality industry, directly impacting customer and guest engagement and experience (Samala *et al.*, 2022). The Henn-na hotel in Japan is the world's first robot hotel (Wu, no date), totally automated with no employee presence. In the hotel, robots provide assistance to the clients by leading them to rooms, transporting the baggage, providing housekeeping services, and offering food (Reis *et al.*, 2020).

Similarly, robots have begun to appear in airports also. Robots at the airport can be found to be performing cleaning tasks, making announcements, and guiding and entertaining passengers (Ivanov, Webster and Berezina, 2017). According to a report by Air Transport IT Insights, almost 32% of airports and half of the global airlines are looking for partners who can assist them in expanding their robotic engagement over the following three years (Youd, no date). Hence, robots constantly improve customer commitment and practice by offering unique facilities and support in the tourism and hospitality industry.

### **3. How Do Travel Technology Providers Help Tourism Enterprises Automate the Travel Business?**

To automate the handling of leads and travel business operations is just as crucial as manually managing them. Tourism businesses would be able to focus more on sales techniques and market research and design if they had access to the right travel technology. Consequently, they would be better able to match client expectations with the correct digital solutions. Travel technology providers help tourism enterprises by providing various services like API integration, customer relationship management (CRM), portal and website designing, and more.

#### ***Travel CRM (Client Relationship Management)***

A Travel CRM is software that allows travel and tourism enterprises to manage all of their customer relations from a single cloud platform. Travel agents must strengthen customer relationships to develop an emotional and loyal connection with their clients. Strong customer relationships can help travel enterprises build prolonged connections, ultimately leading to long-term revenues and thriving travel business. Travel technology providers help travel organizations by providing travel CRM software to deal with itineraries, payment schedules, queries, and lead management issues. Travel agents may track team activities and build a trustworthy travel brand for tourists and travelers with the help of CRM. Some of the features of CRM that travel technology providers offer to travel agents include simplified lead management, automated lead follow-up, AI-based itinerary builder, instant quotation booking, complete invoice solution, supplier payment management, lead performance report, sales report, profit & loss accounting, etc. The travel CRM enables travel agents to properly utilize their resources and increase the profitability and reliability of their travel business.

#### ***Website Development***

When a customer plans a vacation with a travel agency, the first thing they look at is the website. It serves as the company's face and creates an indelible imprint on the viewer's mind. So in order to improve ranking and generate organic leads, it is essential to have a well-maintained and updated website. Travel agents must choose the best website-building platform for their business to generate actual traffic and earnings. Travel agencies need a website or software to manage user data, customer information, and quick quotations and itinerary sharing. Online travel agencies require a system that can assist them in updating their websites and creating SEO content. Travel technology providers make the travel and tourism website design interactive or visually pleasing and integrate the latest technology features such as a quick search filter, secure payment gateway integration, blog site and unlimited packages, hotels and activities etc.

#### ***Travel Portal Development***

Travel portal development aids travel enterprises in configuring hotels, flight tickets, transfers, car rentals, and tour packages to improve the customer experience. Travel technology providers through travel portal solutions may help travel agencies improve online engagement while increasing their business growth and earnings. Travel portal development includes travel API integration, hotel booking API integration, flight API integration, package booking system, activity booking system, B2C travel portal development, and much more, which will help travel agencies grow their businesses and increase revenue. The travel portal incorporates all flight and hotel APIs, ensuring that the travel industry has access to the most up-to-date travel technologies.

#### **4. Current Technological Trends in the Tourism and Hospitality Industry**

Covid-19 has scaled up the technological changes and boosted digital entrepreneurship worldwide to meet various concerns in the past two years (Iivari et al., 2020; SECUNDO et al., 2021), bringing various technological trends to the tourism and hospitality industry. As customers can easily access anything in the digital era, tourism businesses must remain updated about the current technological trends of the market and should provide genuine content on the website to keep the business's current clientele and draw in new ones (Ali et al., 2022).

##### ***Virtual Travel***

Virtual travel gives everyone, especially those with limited mobility or those from poor backgrounds, the chance to explore any destination whenever they want. During Covid-19, tourism destinations were forced to be closed to stop the spread of the virus. On the other hand, virtual travel initiatives met the unfulfilled demand for tourism during that period with a new kind of experience and earned outstanding reviews from travelers. The "Traveling in the Palace Museum" series was introduced by the Palace Museum in China, which remained closed for almost 70 days and received over 100 million internet visitors (Zhang et al., 2022).

##### ***Cashless Payment***

Cashless payment has become more popular due to the Covid-19 epidemic. The prevalence of cashless transactions is increasing as a result of online wallets like Paytm and Google pay. Cashless transactions are more convenient because users do not need to carry their debit or credit cards with them and may use these applications to pay for goods and services at restaurants, hotels, and other establishments. Moreover, tourists have also started using mobile phones to make online payments (García-Milon, Olarte-Pascual and Juaneda-Ayensa, 2021). Therefore, in order to progress in the direction of a further digitalized economy, the tourism sector must offer technological means for customers to pay with their smartphones.

##### ***Voice Search***

Voice search makes use of voice recognition technology to make searches on the internet. One can use this technology to swiftly and effortlessly search for items rather than typing. Nowadays, Google, YouTube, Yahoo, and Wikipedia provide their clients with voice search technology. According to the Google report, out of the total online global population, 27% is using voice search on mobile phones (*Voice search mobile use statistics - Think with Google*, no date).

Voice search is one of the growing technological trends in the tourism and hospitality industry. Travelers have started using voice search more frequently than before to find tourist attractions, hotels, restaurants, road maps, etc. People nowadays are also using voice search while scrolling websites and for bookings. So it is crucial for travel businesses to make their website in such a way that would allow their clients to use voice search properly.

##### ***Robots***

The pandemic has sped up the use of AI and service robots by enabling contactless facilities that are beneficial for maintaining social distance and reducing the risk of spreading the virus (Khan, Khan and Khan, 2022). According to a study by Kim et al. (2021), when the pandemic was at its peak, clients exhibited a more favorable attitude to robot-staffed hotels than to human-staffed hotels.

Making sure that both consumers and employees are safe in the post-pandemic period is crucial; therefore, intelligent services like robot cleaners and voice- and face-recognition systems might be widely deployed in the travel and tourism industry to improve the performance of the tourism business (Shin & Kang, 2020).

## 5. Conclusion

The tourism industry is predicted to reach inconceivable heights in the future due to the increasing use of innovative technologies. The strong performance of the tourism sector is one of the primary drivers of predicted growth. However, due to innovative technological development such as chatbots, virtual reality, facial recognition, and robots, there will be substantial changes in the tourism sector. The rise in the adoption of the latest technology in the tourism sector is a good sign as it indicates the optimum utilization of these technologies to improve productivity and efficiency. Not only will tourism enterprises have more control over the business, but at the same time, tourists would also be able to get an advantage because of the increase in contentment. With the help of travel technology providers, travel enterprises can focus more on market research and develop more inventive sales procedures without worrying about anything else. Travel agencies will be better able to meet and exceed consumer expectations with the correct digital solutions.

Although the use of the latest technology will bring many benefits to the industry, organizations, and customers, it will also bring many problems and complications. Businesses would be in need of sufficient monetary capital to establish a safe and resilient technological infrastructure. The increased usage of robots, chatbots, and other technological advancements in the tourism and hospitality industry would result in less human engagement, negatively affecting the client's travel experiences. The use of various technologies may result in new and challenging technical issues. Therefore it is essential to do comprehensive research on technological advancement in the tourism and hospitality industry to find out its positive and negative impact on all stakeholders of the industry. Also, marketers in the tourism sector would have to incorporate technology efficiently such that it could be used effectively and beneficial to all stakeholders.

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