Chapter 10
Artificial Intelligence (AI) for Tourism Start-Ups

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ABSTRACT

This chapter explores the dynamic intersection of artificial intelligence (AI) and the startup landscape within the tourism industry. It investigates how AI has the potential to revolutionize operations, innovation, and services for emerging businesses in tourism. Demonstrating AI's critical role in enhancing the tourism experience—ranging from personalized recommendations and chatbot-driven customer service to pricing optimization and demand forecasting—it showcases innovative solutions from notable startups like DeepL, Fetch.ai, and Lilium. The chapter includes brief case studies illustrating AI applications in tourism and emphasizes the pivotal role of investors in supporting these startups. It concludes by outlining future research directions, addressing strategies for maximizing AI benefits in tourism, managing privacy and security concerns, and navigating the evolving landscape of AI integration in travel.

1. INTRODUCTION

Artificial intelligence (AI) has emerged as a central focus across various sectors, reshaping businesses and societal landscapes. Its evolution is deeply intertwined with significant advancements in computational capabilities and data accumulation (Lu et al., 2018). This synergy has propelled AI to the forefront of technological innovation, presenting both unprecedented opportunities and challenges. Notably, improvements in computational power, driven by technologies like graphics processing units (GPUs) and specialized hardware, have enabled the execution of complex algorithms at previously unattainable speeds (Lu, 2019; Zhu et al., 2023). This has empowered machine learning models, a subset of AI, to

analyze data, recognize patterns, and inform decisions, particularly impacting the business landscape (Kaplan and Haenlein, 2019).

In the tourism industry, AI is increasingly significant, revolutionizing various aspects of the travel experience for businesses and travelers (Grundner and Neuhofer, 2021). The integration of AI technologies enhances efficiency, personalization, and overall customer satisfaction. Tourism start-ups, a dynamic segment within the travel industry, are characterized by innovative approaches to providing travel-related services and experiences (Morrison, 2020). Encompassing a wide range of businesses, including accommodation booking platforms, travel planning apps, and tour operators, these start-ups disrupt traditional models, offering travelers personalized, convenient, and cost-effective options (Gössling et al., 2019). The tourism sector has witnessed rapid growth and innovation driven by technological advancements and changing consumer preferences (UNWTO, 2020). This chapter explores the pivotal role of AI in shaping the landscape of innovative tourism start-ups, enhancing customer experiences, streamlining operations, and driving future growth in this dynamic industry (Filieri et al., 2021).

The rise of digital entrepreneurship is notable in the travel, tourism, and hospitality industry, with prominent corporations like Airbnb, TripAdvisor, Booking.com, and Skyscanner leading transformation (Ivanov & Webster, 2019). Among various technological advancements, AI stands out as a potentially transformative innovation in tourism (Filieri et al., 2021). With AI technological domains attracting significant venture capital funding, exploring how AI shapes tourism start-ups is insightful (Filieri et al., 2021). Tourism AI start-ups exhibit geographic clustering, with a significant portion originating from major European capitals like London, Paris, and Barcelona (Filieri et al., 2021). This clustering underscores the concentrated innovation and potential impact of AI-driven initiatives in the tourism sector.

1.1 The Rise in Artificial Intelligence

The rise of Artificial Intelligence (AI) has revolutionized industries worldwide, simulating human intelligence in machines for tasks like problem-solving and decision-making (Davenport & Kalakota, 2019). In tourism, AI transforms travel planning, experiences, and reflections. AI analyses data for personalized recommendations, enhances service with chatbots, optimizes pricing, and predicts travel trends. Recent advancements in AI rely on improved algorithms, processing capacities, and big data management, marking the Fourth Industrial Revolution (Li et al., 2019). AI applications are evolving across tourism domains, including personalization, travel assistants, robots, predictions, language translation, voice recognition, and natural language processing.

The integration of AI promises to streamline tourism operations, enhance customer satisfaction, and sustain sector growth. Tourists engage in decision-making processes for future trips, including destination, transportation, accommodation, and activities, influencing overall satisfaction with their travel experiences.

1.2 Value Creation of Big Data and Artificial Intelligence (BDAI) in Tourism

The value creation of Big Data and Artificial Intelligence (BDAI), as categorized by McKinsey's global institute analysis and outlined by Talwar and Koury (2017), can be summarized into four key areas:

Project: This area focuses on leveraging BDAI to enable companies to better project and forecast to anticipate demand, optimize research and development (R&D) efforts, and improve sourcing strategies. By utilizing data-driven insights and predictive analytics, companies can make informed decisions regarding future demand trends and streamline their operational processes.

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