

# Chapter 17

## From Tradition to Innovation: The Role of Artificial Intelligence in Transforming the Hospitality Industry

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### **ABSTRACT**

*Artificial intelligence's ability to do traditionally human assignments at any time of day is driving its rising relevance in the hospitality sector. This implies that hotel owners may save a lot of money, eliminate human error, and offer the highest level of service. Its different perspectives on complicated issues have piqued academics' curiosity. AI-driven analytics and predictive modeling have optimized revenue management, enabling data-driven decisions and dynamic pricing strategies. Operational processes have been streamlined through AI, leading to improved efficiency and resource allocation. Furthermore, AI algorithms have leveraged guest data to deliver highly personalized experiences and customized offers, enhancing guest satisfaction and loyalty. In order to track the development of AI in the hotel industry, a bibliometric approach was used in this research. The study also seeks to pinpoint the crucial directions for further investigation. A systematic analysis of how artificial intelligence is changing the hotel business is offered as a perspective.*

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## **INTRODUCTION**

The integration of Artificial Intelligence (AI) in the hospitality industry has gained significant momentum in recent years, bringing about transformative changes in how businesses operate and cater to guest needs. AI refers to the simulation of human intelligence in machines that can analyze data, make informed decisions, and perform tasks traditionally requiring human intelligence.

The hospitality industry is renowned for its commitment to exceptional service and personalized experiences, relying on traditional practices to meet guest needs and desires. One of the biggest and fastest expanding industries in the world is international tourism and hospitality. The hospitality industry is set to witness significant expansion, with an expected rise in its overall value from \$3,952.87 billion in 2021 to \$4,548.42 billion in 2022, driven by a compound annual growth rate (CAGR) of 15.1%. By 2026, it is projected to reach \$6,715.27 billion, growing at a CAGR of 10.2%. Almost every facet of travel and tourism has adopted artificial intelligence (AI). Robots, conversational systems, intelligent travel agents, prediction and forecasting systems, language translation software, customization and recommendation systems, and speech recognition and AI technology systems are a few examples. Recent advancements in large data, algorithms, and computing power have significantly accelerated AI development.

However, with the rapid advancements in technology, particularly the integration of Artificial Intelligence (AI), the industry is undergoing a profound transformation. AI has emerged as a powerful force, revolutionizing the hospitality landscape and propelling it from tradition to innovation. This introduction aims to explore the role of AI in transforming the hospitality industry, highlighting its impact on various aspects of operations, guest experiences, and strategic decision-making (Bhatnagar et al., 2022a, 2022b, 2023a, 2023b; Dangwal et al., 2022a, 2022b; Kumar et al., 2023a, 2023b; Özen et al., 2022, Singh et al., 2021; Taneja et al., 2022a, 2022b; 2023a, 2023b, 2023c, 2023d, 2023e 2023f; Gupta et al. 2023; Dahiya 2023; Bansal 2023; Reepu 2023;).

Traditionally, the hospitality industry has thrived on human interactions, with hotel staff using their expertise and intuition to anticipate guest needs and provide personalized services. While the human touch remains invaluable, AI has introduced a new dimension of efficiency, personalization, and operational excellence to the industry. Through the integration of AI technologies, hospitality businesses are embracing innovative approaches to enhance guest satisfaction, optimize revenue, streamline operations, and deliver personalized experiences that surpass traditional expectations.

Artificial intelligence (AI) is essential to both the industrial and service sectors' digital transformation. (Mariani and Borghi, 2019) and has a significant impact on how businesses develop and extract value (Huang and Rust, 2020). More precisely, AI technologies are transforming the services industry (Huang and Rust, 2018; 2020), changing both service interactions and operations (Wirtz et al., 2018). Personal travel assistants, robotics, prediction and forecasting systems, language translation software, speech recognition and natural language processing systems, and robots are among the AI applications now being researched and tested in the travel and tourist sector.

As customers grow more aware of the danger of contracting an infectious illness via human contact as a result of the Covid-19 outbreak, the use of service robots in the hospitality sector has increased. The use of service robots may indicate a lack of human interactions and a reduction in perceived risk of virus transmission, which may boost visit intention (Wan, Chan, & Luo, 2020). Due to their worries about safety, customers choose hotels with robot employees over those with human staff (Kim et al., 2021; Shin & Kang, 2020). It is anticipated that between 2020 and 2024, the market for service robots in the healthcare and hospitality industries would increase by 942 million USD (Technavio, 2020). . Through nudging,

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