

ARTIFICIAL INTELLIGENCE IN THE HOTEL INDUSTRY. CASE STUDY IN CHINA, JAPAN, USA AND SOUTH KOREA

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Abstract

Artificial intelligence (A.I.) is transforming the hospitality industry, optimizing operational processes, improving customer experience, and creating new opportunities for personalization. A.I.-based technologies such as chatbots, recommendation systems, predictive analytics, and service automation enable hotels to provide more efficient and personalized services. The implementation of A.I. contributes to increasing customer satisfaction, reducing costs and improving managerial decisions. In countries such as China, the U.S., South Korea, and Japan, the adoption of A.I.-based technologies is increasingly prevalent, due to the growing demand for fast and personalized services.

Keywords : innovation, automation, hotel industry, tourism.

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INTRODUCTION

The rapid development of artificial intelligence is transforming the hotel industry, providing innovative solutions to improve customer service and experience. The adoption of artificial intelligence varies by region, being influenced by cultural, economic, and technological factors. China, the U.S., Japan, and South Korea are leaders in the use of A.I., deploying receiving robots, chat bots, and intelligent management systems. This paper analyzes how A.I. is applied in the hotel industry of these four countries, identifying the benefits and challenges of implementation. In the U.S., A.I. is mainly used for service personalization and predictive analytics, while in China, facial recognition technologies and automation are widely integrated. South Korea focuses on the use of robots and virtual assistants, and Japan is known for fully automated, robot-based hotels. This diversity reflects how A.I. can be adapted to local needs and preferences.

This paper aims to analyze the application of artificial intelligence in the hotel industry in China, the U.S., South Korea, and Japan, highlighting the benefits, challenges, and impact on customers and operational processes.

MATERIALS AND METHODS

The materials used to carry out this work consist of scientific articles, specialized studies and current web pages that address the application of artificial intelligence in the hotel industry at an international level, with a focus on China, the USA, South Korea and Japan.

RESULTS AND DISCUSSIONS

Artificial intelligence (A.I.) has begun to play a critical role in transforming the hospitality industry globally, including in countries such as the U.S., China, Japan, and South Korea. The implementation of A.I.-based technologies has led to improved operational efficiency, the creation of personalized guest experiences, and the

optimization of internal processes, as in the following examples in Table 1.

industry. South Korea: The government has launched a funding program to support the

Applications of artificial intelligence in the hotel industry				Table 1
Country	A.I. technologies used	Purposes and Applications	Results and Impact	
U.S..	Virtual assistants, chatbots, personalized recommendations	Improving customer service, personalization, booking automation	Increasing customer satisfaction, reducing operational costs, improving the efficiency of internal processes. Examples: Marriott uses chatbots for instant interactions.	
China	Reception robots, reservation management systems	Reception automation, efficient management of customer flow, time savings	Increasing the speed of services, improving customer experience, reducing human error. For example, reception robots improve efficiency in luxury hotels.	
Japan	Concierge robots, facial recognition technology	Automation of customer interactions, improved security, personalization	High customer satisfaction, especially in urban areas, increasing efficiency in hotels by integrating service robots. Examples: Henn at Hotel Tokyo (100% automatized).	
South Korea	Chatbots, recommendation algorithms, AI for price management	Customization, price optimization, service automation	Increase hotel revenue by setting dynamic pricing and personalizing offers. Also, improving the management of reservations and services.	

China: The city of Wuzhen in China, has integrated smart technologies into the hospitality sector, allowing access to tourist attractions and check-in in hotels through facial recognition according to Table 2, the use of smart mattresses and advanced parking systems, thus improving the visitor experience. Japan: In 2015, the Henn na Hotel was inaugurated, where humanoid robots and robotic dinosaurs welcome guests at the reception as in Table 2. Although initially these robots could not interact directly with humans and acted based on requests entered through an electronic interface, the initiative demonstrated the potential of the technology in the hotel

integration of A.I. in various sectors, including the hotel industry presented in Table 2. With a budget of 11 billion won, the initiative aims to help organizations harness A.I. technology, which could lead to the development of innovative and efficient hotel services. United States: While there is no specific information on the implementation of A.I. in the U.S. hotel industry, it is known that many U.S. hotel chains are adopting advanced technologies to improve guest service. These include the use of virtual assistants for concierge services – providing guest support, A.I.-powered energy management systems, and data analytics platforms for personalizing the customer experience as in Table 2.

A.I. applications in hotels and relevant examples			Table 2
A.I. Application	Description	Relevant Example	
Virtual Assistants and Chatbots	Chat bots and virtual assistants are used to answer customer questions, make reservations, and provide personalized information.	Marriott (U.S.) uses the chat bot "ChatBotlr" to help customers with reservations and FAQs.	

Reception Robots	Robots that take over tasks at the front desk, such as check-in, check-out, and providing information.	Henn na Hotel in Japan uses reception and assistance robots to improve efficiency and customer experience.
Personalized recommendations	Algorithms that analyze the customer's history to provide personalized recommendations of services, offers, and activities.	Hilton (U.S.) uses A.I. to recommend personalized activities based on customer preferences.
Facial recognition	Technology that uses AI to identify customers and improve the security and efficiency of services.	In China, hotels use facial recognition for quick check-in and room access.
Serving and Receiving Robots	In South Korea, hotels use robots for automated check-in and to provide customer information about services.	The "Aloft Seoul" hotel (South Korea) uses robots for customer check-in and delivery of information through interactive interfaces.

CONCLUSIONS

The implementation of artificial intelligence in the hospitality industry varies by region, being influenced by cultural, economic, and technological factors. China and Japan are focusing on automation, while the U.S. is emphasizing personalization, and South Korea is combining the efficiency of robots with smart cameras. While A.I. offers many advantages, adopting this technology comes with challenges, such as data protection, integration of traditional systems, and high implementation costs. In the future, A.I. technologies are expected to become increasingly accessible, helping to improve customer experience and optimize operations.

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