CỤC DU LỊCH QUỐC GIA VIỆT NAM

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Travel+

Số 06/2025

ĐẶC SẢN CỦA TRUNG TÂM THÔNG TIN DU LỊCH

ISSN: 2815-4962

Lan tỏa làn sóng
kích cầu du lịch
"VIỆT NAM
Đi để yêu"

APPLYING AI TECHNOLOGY IN HOSPITALITY OPERATIONS

• MR. RENO MUELLER*

For service industries like hospitality, artificial intelligence (AI) cannot simply be regarded as another tool but must be seen as an "enabler" that transforms existing technology, integrates with robotics and automation, and drives the creation of new solution-specific technologies. However, AI application will vary significantly across different hotel segments.

GUEST SERVICE-RELATED APPLICATIONS

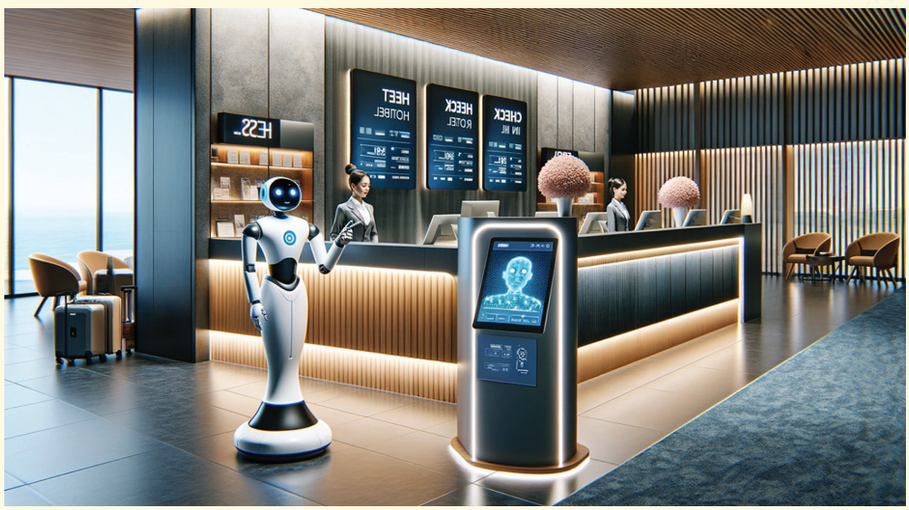
Personalization Through Machine Learning

Today's travellers demand personalized experiences, and AI tools with machine learning algorithms analyzing mega data are ideal for meeting these needs. By studying past booking patterns, preferences, and demographic data, hoteliers can tailor marketing campaigns offering customized amenities, room upgrades, or personalized activity suggestions. For example, if a returning guest frequently books spa services or enjoys fine dining, the AI system can incorporate a spa package and dinner reservations in their hotel booking at favourable rates, enhancing guest satisfaction and driving ancillary revenue through targeted upselling and cross-selling.

AI Customer Service Assistant

AI-powered chatbots serve as 24/7 multilingual personal assistants, handling routine interactions such as booking inquiries, service recommendations, and room service requests. Examples include "Edward" at the Radisson Blu Edwardian in London and Marriott's "ChatBotlr".

Hyatt offers digital room keys on phones and smart watches. Source: Internet



Contactless Check-In

Facial recognition technologies, integrated with AI, enable seamless, contactless check-ins through mobile apps, kiosks, or facial scanners. These systems automatically verify identity and reservation details, issuing digital room keys via smartphones to reduce wait times and physical contact. Hotels in China and Japan have been early adopters, improving operational efficiency and enhancing guest privacy and security.

Smart Rooms

AI is driving the evolution of smart hotel rooms, capable of adjusting lighting, temperature, and entertainment based on guest preferences. Voice-controlled assistants such as Amazon Alexa for Hospitality or Google Assistant allow guests to manage room features, request services, and access entertainment. Over time, AI systems may learn guest preferences across stays and properties, delivering consistently personalized experiences.

Robots in Guest Interaction

Forward-thinking hotels are trialling AI-equipped robots for guest-facing services, such as guiding guests to their rooms, delivering amenities, or providing information about local attractions. Examples include YOTEL's luggage robot "Yobot," Savioke's "Relay" for room deliveries, and Japan's Henn na Hotel partially staffed by robots. While luxury hotels retain human interaction as a differentiator, mid-tier hotels are embracing robots to enhance efficiency and add a novelty factor to the guest experience.

* A specialist in the International Hospitality Industry

BUSINESS AND OPERATION APPLICATIONS

Revenue Management and Dynamic Pricing

AI is transforming revenue management by replacing traditional seasonal pricing with dynamic models. By analyzing real-time market data, competitor rates, weather forecasts, and local events, AI systems such as Duetto and IDeaS Revenue Solutions dynamically adjust room rates to optimize occupancy and profitability, reducing manual errors and enhancing revenue potential.

Predictive Analytics for Demand Forecasting

AI-enabled predictive analytics allow hotels to forecast demand by analyzing historical booking data, economic trends, and social media sentiment. More accurate forecasting enables hotels to optimize marketing strategies, staffing allocation, and maintenance scheduling, resulting in higher operational efficiency and better financial outcomes.

Sentiment Analysis and Guest Feedback

Through natural language processing, AI systems analyze guest feedback and social media posts in real time, helping hotels detect patterns in complaints or praise. Immediate insights allow hotels to proactively address concerns, reward high-performing staff, and continuously refine service standards to maintain strong brand reputations.

AI-Powered Marketing Campaigns

AI applications in marketing allow for more precise audience segmentation and behaviour prediction. By analyzing web behaviour, booking history, and engagement metrics, AI-driven marketing campaigns can be hyper-personalized, increasing conversion rates and maximizing return on ad spend.

> **Budget hotels are incentivized to adopt AI-driven technologies that lower operating costs, whereas luxury operations selectively implement AI where it enhances guest experience or reduces repetitive operational processes without diminishing personal interaction - their key competitive advantage. Similarly, city center hotels may prioritize automated arrival process for speed and efficiency, while beach resorts and retreats maintain a focus on personalized experiences, selectively integrating AI.**

AI in Housekeeping and Operations

AI systems are increasingly streamlining housekeeping and maintenance functions. They can track room status and guest checkouts to optimize cleaning schedules and foresee equipment failures, prompting preventative maintenance. In larger hotels, robotic technologies such as vacuum robots and linen delivery bots are improving service delivery speed, consistency, and reducing physical workloads.

AI represents not just a passing trend but the beginning of a fundamental shift in hospitality operations. AI systems have the potential to enhance operational efficiency, improve financial performance, and elevate guest experiences through greater convenience and personalization.

On the contrary, AI integration presents several challenges. High upfront investment costs, staff training complexities, data privacy concerns, and fears of job displacement must be carefully managed. Successful hospitality operators will need to balance AI efficiencies with preserving the human touch that defines quality guest service.

In the long term, as AI becomes more context-aware and fully integrated and being embraced thoughtfully, it can help hoteliers to drive growth, differentiation, and deliver exceptional service in a rapidly evolving marketplace.