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AI Agents in Hospitality: Driving Innovation, Well- Being, and Personalization

AI in hospitality

EHL Research
EHL Research Team



The EHL Research Team outlines how AI is shifting from hype to practical tool in hospitality, with most professionals expecting a major impact on guest communications, personalization, and operations by 2026. Current adoption is still limited and focused on easier, guest-facing use cases, but early results show clear gains in time savings, efficiency, decision speed, and revenue – provided AI is integrated into a broader digital strategy and used to empower, not replace, staff.

Artificial intelligence (AI) is everywhere nowadays. There is no conference or expert talk where AI does not take center stage. In the hospitality industry, the use of AI tools is gaining importance and gradually becoming a practical resource that, if used correctly, can support staff, improve operations, and enhance the well-being of both employees and guests.

The success of these tools depends not only on thorough staff training and integration into operational ecosystems but also on a clear intention: to use AI to empower employees rather than replace them.

By taking this approach, the hospitality industry can harness AI-driven systems to reduce operational strain, free up staff for meaningful guest interactions, and create more resilient workplaces where people thrive – ultimately improving the guest experience.

The impact of AI on hospitality is already evident, even if widespread implementation is still developing. A survey of 327 hospitality professionals worldwide by [Canary Technologies on AI in Hospitality](#) found that 73% think AI will have a big impact on the industry. Some 61% of hoteliers said that AI is impacting the industry now or will within the next year, while 39% think it will impact hospitality in two or more years. Over 80% believe AI will significantly reshape pre-booking interactions and guest communications, enabling more personalized, seamless connections with customers.

Guests are also growing increasingly familiar with AI and are encountering more tools designed to enhance their travel experiences. According to the June 2025 [Skift US Travel Tracker Survey](#), which gathered responses from over 1,000 US travelers, more than half are using AI-based tools for travel planning.

In a survey of 86 primarily US-based travel executives, cited in the 2025 report [Remapping Travel with Agentic AI](#) from McKinsey & Company and Skift Research, 26% of respondents indicated that implementing AI reduced their operational costs, 30% said it sped up decision-making, and 33% reported improved customer personalization. In addition, 36% observed higher-quality outputs and 59% noted increased employee productivity. Overall, a majority of participants stated that AI adoption over the past three years had contributed to more than 6% annual revenue growth and the same percentage in annual cost savings.

AI IMPLEMENTATION IN HOSPITALITY STILL LIMITED

While the potential of AI in hospitality is significant, adoption remains relatively limited.

A 2025 survey of 170 European hospitality businesses conducted by [HES-SO Valais](#) found that most AI applications in use today focus on real-time revenue management (42%), guest personalization (38%), and predictive analytics (37%). The analysis shows that most hotels currently focus on guest-facing tools that are easy to implement.

Among hotels already using AI, perceptions are notably positive. On a 1-10 scale, the average rating of AI's benefits by survey respondents was 6.6, with a median of 7. Nearly one in four hotels (23%) rated the benefits as 8 out of 10, and 14% gave the highest score. Only 5% reported seeing no benefit at all. Time savings (76%), improved communication (54%), and enhanced operational efficiency (51%) were most frequently mentioned as advantages.

On the other hand, challenges include high implementation costs, technical complexity, and lack of technical skills. Data privacy issues and integration challenges are also significant, particularly for larger hotels with complex legacy systems. Research shows that AI is most effective when integrated into a broader digital strategy aligned with business goals, guest experience, and operational needs, which leads to enhanced efficiency without replacing the human touch that defines hospitality.

“In practice, this can look like using AI to optimize processes such as dynamic pricing or demand forecasting, but not to eliminate staff roles,” says EHL Professor and tech expert **Ian Millar**. Instead, it should be used to complement human skills, providing staff with better tools, information, and support. *“The lesson so far: AI can increase efficiency – but without reliable integration, careful training, and a focus on the needs of people, its impact and purpose remain limited,”* Millar adds.

HOW AI CAN ENHANCE EMPLOYEE WELL-BEING

Beyond efficiency, AI can improve staff well-being – a growing priority in an industry associated with long hours, high turnover, and stress. EHL Professor **Dr. Reza Etemad-Sajadi**, an expert on human-machine interaction, explains that AI can function as a “buffer” against burnout and workload imbalance. Predictive scheduling can anticipate peak stress periods and allocate staff effectively, while AI analytics can identify patterns of overworking or absenteeism, enabling proactive management.

AI can also support mental health by reducing repetitive tasks and enabling more balanced workloads. *“When employees feel less overwhelmed by administrative burdens, they are better able to focus on the creative, social, and service-oriented aspects of their roles. These are factors strongly linked to job satisfaction,”* says Dr. Etemad-Sajadi.

Importantly, he emphasizes that AI must be implemented responsibly, with safeguards for privacy, data security and ethical considerations. *“Used well, AI doesn’t just boost productivity, but can actively contribute to healthier, more sustainable workplaces.”*

This dimension is particularly important as younger generations of workers increasingly look for employers who care about well-being and purpose. *“In a competitive labor market, companies that use AI to create less stressful, more supportive environments may find themselves better positioned to attract and retain talent,”* says Dr. Etemad-Sajadi.

AI TOOLS SHOULD EMPOWER EMPLOYEES, NOT REPLACE THEM

Another advantage of AI tools is their ability to help staff manage problems that arise from increasing digitalization. A recent research project led by **Dr. Jie Yu Kerguignas** at EHL and funded by HES-SO explores how the digitalization of services affects frontline employees' productivity. Drawing on a panel of 262 hospitality professionals and interviews with 10 hotel experts, the study found that system failures, complexity, and insufficient training undermine productivity and service quality.

Connectivity breakdowns, outdated software, and high training costs increase employee stress and can lead to guest dissatisfaction. *“Hotel managers agree that technology is essential to modern operations, yet its shortcomings can quickly paralyze service delivery,”* says Dr. Yu Kerguignas.

Hotel managers consistently emphasize that technology is essential but must be reliable and aligned with operational needs. *“Software that appears intuitive to IT experts can feel confusing and illogical for hospitality staff,”* says **Denis Wang**, Administrator of Hôtel Beau Rivage Neuchâtel.

High investment in technology without guaranteed reliability can backfire, increasing stress rather than alleviating it. *“This reflects a growing managerial concern: technology is indispensable, but only when it is both reliable and aligned with operational needs,”* emphasizes Dr. Yu Kerguignas.

AI AS A STRATEGIC ALLY

Against this backdrop, subsequent research by **Dr. Jie Yu Kerguignas** reveals that most managers regard AI as a strategic ally, helping staff to manage technology and overcome problems associated with it. *“Today, AI enables greater personalization while also supporting staff – not to replace them, but to enhance their performance,”* says General Manager of the Chalet RoyAlp Hôtel & Spa **Egbert Buursink**. Instead of removing jobs, AI can be used to predict system failures, reduce repetitive tasks, and serve as a digital assistant.

According to this study, the consensus among managers is that AI should operate quietly in the background, strengthening operations and boosting staff confidence while preserving the essential human element of hospitality. *“The human being is at the heart of the matter. We must think about the benefit for the person,”* says **Nicolas Messian**, Vice-President of Operations at Corner Collection.

To conclude, Dr. Jie Yu Kerguignas notes: *“The study clearly shows that hotel leaders are not afraid of AI. On the contrary, they are eager to experiment with tools that empower employees. The greatest demand is for AI solutions that increase productivity by predicting failures, simplifying workflows, and analyzing repetitive errors. And secondly, tools that support training and confidence through AI coaches, chatbots, and on-demand guidance.”*

It is also important to consider security, data protection, and cross-jurisdiction regulatory requirements, which remain major concerns for hotel groups and make AI adoption dependent on strong safeguards and increased compliance costs.

THE RISE OF AI AGENTS

Looking ahead, one of the most transformative innovations is the development of AI agents, whether in hospitality, healthcare, finance, or many other industries. In an [interview](#) in February 2025, Microsoft CEO Satya Nadella said that AI agents will reshape the landscape of Software as a Service (SaaS) businesses. These agents act as the primary interface between people and technology, responding to questions, executing tasks, retaining memory across interactions, and reshaping both enterprise and consumer computing.

In hospitality, AI agents are particularly relevant, representing the next step beyond traditional AI and Generative AI (GenAI). AI agents can enhance guest experiences, streamline operations, and support data-driven decision-making. For example, by analyzing competitor pricing and market demand, AI agents can dynamically adjust room rates to optimize revenue and occupancy.

In a recent [interview](#), **Jeanelle Johnson**, PwC's travel, transportation and hospitality expert, said: *“These are autonomous tools that make decisions in real time, whether that's curating a personalized guest offer or resolving an operational issue.”*

AGENTIC AI IN PRACTICE

The report [Remapping Travel with Agentic AI](#) from McKinsey & Company and Skift Research identified several ways in which agentic AI can significantly enhance hotel operations and property management by autonomously handling complex, real-time decisions:

- **Guest room allocation:** Automatic assignment based on guest preferences, loyalty, and past feedback, saving 30 minutes to 2 hours per day for front-office staff.
- **Predictive maintenance:** Anticipates issues, manages repairs, and orders parts autonomously, reducing rooms' out-of-service time by 20-30%.
- **Housekeeping management:** Dynamically assigns tasks using real-time data, reducing hours by 10-30% and optimizing workflow.
- **Menu engineering:** Analyzes offerings, pricing, and inventory, increasing net profit by 5-15%.

Unlike traditional chatbots, AI agents are proactive and capable of natural language interaction, system integration, and complex task execution. **Florian Montag**, EHL alumnus and VP at Apaleo, explains: *“They anticipate needs, offer solutions, and adapt to context, reducing interruptions and letting staff focus on high-value interactions that define hospitality.”*

For hotels facing labor shortages, AI agents help maintain service quality, reduce staff pressure, and preserve organizational knowledge, which is increasingly valuable in a sector with high turnover. Hospitality tech expert Montag says that this is not about “robots replacing people” but about creating a collaborative dynamic where digital assistants handle routine complexity autonomously, freeing human employees to do what they do best: provide genuine hospitality.

EHL IAB-Member, investor and former CEO of Booking.com **Gillian Tans** sees AI agents as a game changer for the travel industry. *“Generative AI will reshape travel by creating seamless, personalized journeys that anticipate traveler needs and remove friction. For hotels, it means transforming operations – from smarter demand forecasting to hyper-personalized guest experiences – unlocking new levels of efficiency and loyalty.”*



Already today, agents make exploring destinations and planning activities simple and inspiring; the next leap is AI agents seamlessly moving from inspiration to action – such as booking your entire trip for you.

◆ **Gillian Tans**, EHL IAB-Member, investor and former CEO of Booking.com

The rise of AI in hospitality demonstrates that technology can empower rather than replace human staff. AI agents can handle repetitive, data-driven, and complex tasks, allowing employees to focus on human-centricity and meaningful interactions. When implemented with careful training, integration, and ethical safeguards, AI becomes a tool to enhance workplace well-being, increase efficiency, and improve guest satisfaction, showing that a people-first approach and technological innovation can coexist, paving the way for a brighter future for our industry.

