



## EMBRACING THE DIGITAL FRONTIER: AI'S REDEFINITION OF TRAVEL AND HOSPITALITY

## An industry at an inflection point

The travel and hospitality (T&H) industry is vast, complex and caters to a diverse range of travelers and their needs. The industry has been experiencing significant growth in recent years due to the increasing demand for travel and tourism. With this surge comes a greater need for innovation and efficiency in the T&H industry, which has led to the adoption of artificial intelligence (AI) technology.

## AI is Reshaping T&H

AI, which simulates human intelligence in machines programmed to think and act like humans, has been transforming this industry by providing innovative solutions that enhance the customer experience and streamline operations. In today's world of uncertainties, AI promises to play a valuable role in helping businesses do better.

The impact of AI in the T&H industry is groundbreaking with its slew of innovative solutions that enhance customer experience, streamline operations, and improve decision-making. With AI, T&H companies can gain much needed insights into their customers' preferences, behaviors, and needs, enabling them to provide personalized and targeted services. Additionally, AI can help companies optimize their operations, reduce costs, and increase efficiency, like Swiss Air which saved 5 million Swiss francs in 2022.

## Unveiling the Impact: AI's Role in Shaping the T&H Sector

There are a ready set of use cases where T&H companies can rely on AI to uplift their business performance. Some of these include -

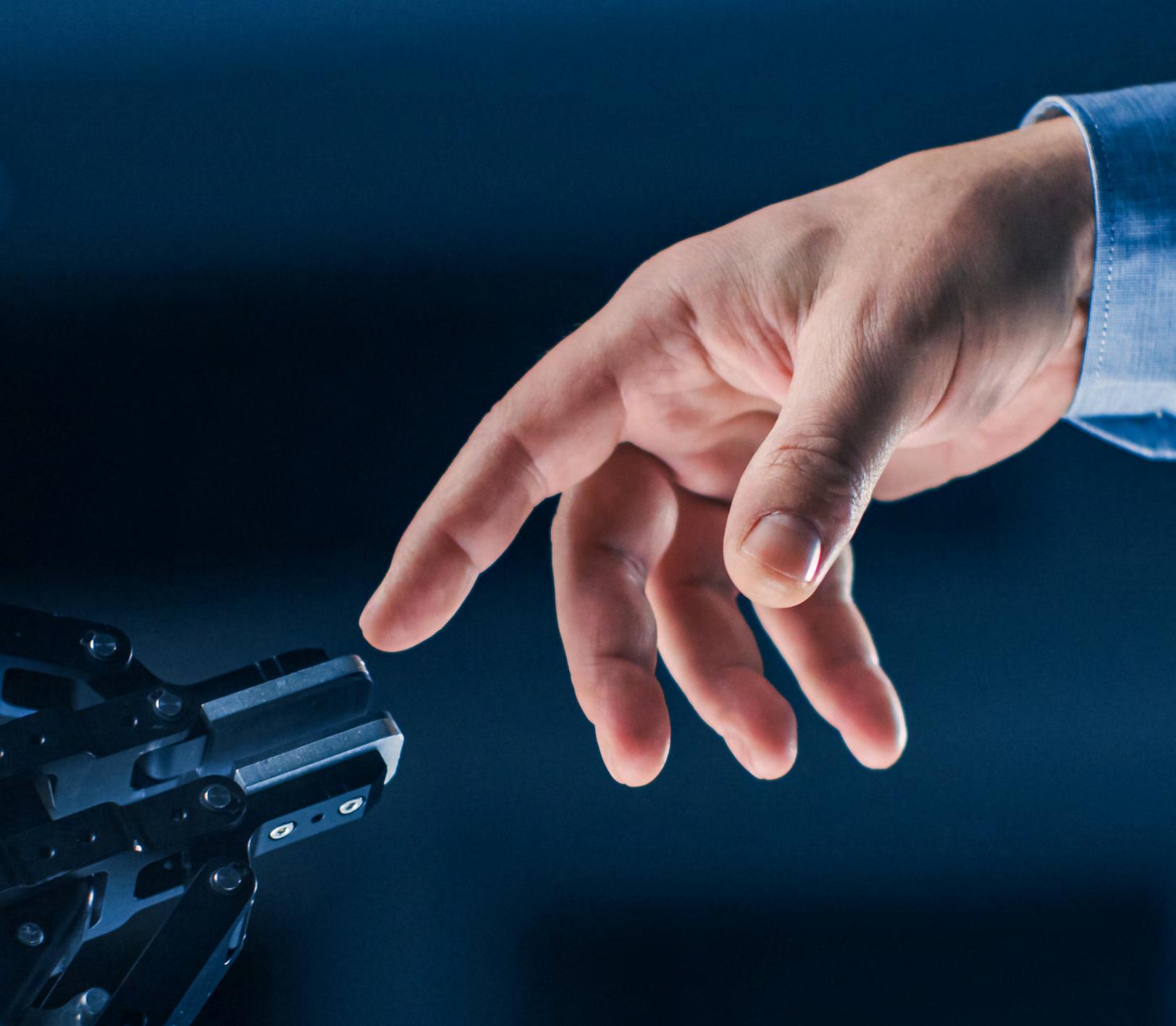
- **Revenue management:** AI can help optimize pricing strategies based on demand and supply, ensuring that hotels and airlines maximize revenue without pricing themselves out of the market. It can help with room rate optimization, dynamic room pricing based on occupancy, updating rates across multiple channels and OTAs in real-time, and comparing performance and ratings to other hotels in the surrounding area.

Novum Hospitality, a European hotel group, sought to enhance profitability with the help of digitalization and automation solutions. They implemented cloud-based revenue management solutions that helped the revenue team make informed pricing, forecasting, and distribution decisions.

FD 356

18.38

5



- **AI-based chatbots for customer service:** With AI-powered chatbots, travelers can get their queries answered and receive assistance with booking and itinerary planning 24/7. According to a recent survey, almost 60% of travelers believe that chatbots and messaging services will be the go-to mode of communication with travel brands in the future. In fact, 55% would be comfortable with chatbots handling their travel booking.

Already Booking.com's service and support chatbot, "the Booking Assistant," takes 30% of the customer questions automatically and in under five minutes. Meanwhile, hotel giants like Hilton Hotels & Resorts and Marriott International use chatbots to automate customer support.

- **Personalized recommendations and itinerary planning:** AI algorithms can analyze customer data to provide personalized recommendations for accommodations, restaurants, and activities based on their preferences and past behavior. Experts expect hotels to harness CRM and online behavior data to personalize offers and communication based on travelers' preferences.

For example, the Dorchester Collection hotel has personalized guest experiences with the power of its AI/ML platform by analyzing customer feedback surveys, customer reviews, and online polls. Likewise, the Hopper app, which has sold over \$600 million in flight tickets, is based on ML algorithms to predict optimal hotel prices and flights. At the same time, it suggests the best time to book a flight for the user.

- **Loyalty and sentiment analysis:** AI's ability to analyze customer data to identify individual preferences and behaviors can be used to create personalized loyalty programs. Or it can be used to gauge the user sentiments towards a brand like Airbnb did. It analyzed its Twitter mentions for keywords that connoted a negative experience and compared it with mentions that described positive experiences . Similarly, Hotels.com relies on emotion analytics to make its marketing campaigns effective.
- **Predictive maintenance for hotels and airlines:** AI can analyze data from sensors to predict maintenance needs for hotels and airlines, minimizing downtime and ensuring a smooth travel

experience for customers. Predictive maintenance can stretch an equipment's life by up to 50%, states a study by the National Center for Manufacturing Sciences . By identifying potential problems early, hotels can address them before they lead to equipment failure, saving money on replacements.

US based Southwest Airlines used an AI-based predictive maintenance system to reduce maintenance costs of its fleet of over 700 planes by 20% and helped avoid flight cancellations or delays . In another example of the productive use of AI, the Hilton group has saved over \$1 billion in utility costs by implementing an ESG management platform.



- **Facial recognition technology for faster check-ins:** AI can speed up the check-in process by verifying a traveler's identity and reducing wait times. Experience shows that 400 passengers can be boarded in 20 minutes, which is half the usual time.

Delta Air Lines has implemented similar technology for scanning bags, security checks, and boarding in the Atlanta and Detroit airports. In addition, in response to an increased demand for safety, the Marriott Rand Tower Hotel in Minneapolis installed kiosks equipped with facial recognition technology to check the temperature, detect masks, and dispense hand sanitizer.

- **Voice-enabled technology for room service and amenities:** AI-powered voice assistants can provide guests personalized services such as room service, housekeeping, and concierge services. Almost 80% of hospitality companies expect voice-activated devices to become mainstream for room lights and temperature controls.

The Charlotte Marriott City Centre in North Carolina is a trendsetter in using Amazon's Alexa to communicate with guests by installing Amazon Echo devices across the property.

In these ways, AI is revolutionizing the T&H industry with its multifaceted applications.



## The Shape of Things to Come: Navigating the Future Landscape

The good news is that AI continues to deliver value. Here's a glimpse of the future -

- Integration with virtual and augmented reality to provide immersive and personalized travel experiences.
- AI algorithms can analyze demand and supply data to provide dynamic pricing for travel services.
- Recommendations for sustainable tourism, promoting environmentally responsible travel practices.
- Enhance security and safety by detecting potential risks and providing real-time alerts to prevent accidents and incidents.

### Spotlight on Generative AI

Generative AI has been in the news for all the right reasons. Its natural language understanding and generation, as well as its human-like proficiency, has thrown open an array of possibilities for businesses. It's no different for the T&H industry, and here's how it can add value -

- Personalize content creation by analyzing a customer's travel history and preferences to create customized itineraries, hotel and restaurant recommendations.
- Dynamic and engaging virtual tours of hotels and destinations allow customers to experience a location before they book.
- Translate customer queries and respond in their native language, thus allowing travel brands to communicate with customers worldwide.
- Enhance the visual appeal of a travel brand's marketing materials with stunning travel photography or illustrations.

### Infosys Topaz

Infosys Cobalt cloud and data analytics and extensively uses generative AI to help T&H businesses accelerate growth, enhance efficiencies at scale and establish connected ecosystems. It presents 12,000+ AI use cases, 150+ pre-trained AI models and 10+ AI platforms managed by AI-first specialists and data strategists to deliver cognitive solutions.

### The future looks bright

The impact of AI in this sector is nothing short of revolutionary, bringing about a host of innovative solutions that enhance the customer experience, improve operations, enable informed decision making and drive business growth. The several important applications discussed in the earlier section testify to AI's power. As we navigate the future landscape of the T&H industry, it is clear that AI will play a defining role in shaping its trajectory.

At the same time, however, it is vital to acknowledge the



challenges of implementing AI solutions. For example, the cost implications and integration complexities must be addressed, and ongoing discussions surrounding privacy, data security, and ethical considerations must be closely monitored. By recognizing these challenges and proactively working towards solutions, the T&H industry can fully harness the potential of AI.

The future of the T&H industry is undoubtedly intertwined with the power of AI, and the possibilities for innovation and growth are boundless. So, get set to embrace the transformative potential of AI and unleash its full force in the travel and hospitality sector.



## About the Authors

### Mitrankur Majumdar

SVP and Global Head, Services, Infosys

### Kumar Paramasivam

VP and Global Head for Travel and Hospitality, Infosys

## References

- Everyday A.I.: How the airline industry is using artificial intelligence to reduce fuel consumption, keep flights on time | Fortune
- Booking.com Reveals 8 Travel Predictions for 2019
- Booking.com Expands Global Access to the Booking Assistant
- What's the Impact of Artificial Intelligence in the Hotel Industry (hospitalitynet.org)
- 10 Hotel Trends to Watch in 2023 | By Pedro Colaco (hospitalitynet.org)
- AI Case Study | Dorchester Collections personalises guest experience with machine learning analytics (bestpractice.ai)
- 6 Examples of How AI is Used in the Travel Industry - Mize (hotelmize.com)
- AI in Travel and Tourism: How Artificial Intelligence Solutions Impact the Industry Revival | EPAM Anywhere Business
- Emotions analytics helps Hotels.com connect with customers | TechTarget
- AI-Powered Predictive Maintenance in Hotels: Reducing Costs and Improving Efficiency - (datategy.net)

For more information, contact [askus@infosys.com](mailto:askus@infosys.com)



© 2023 Infosys Limited, Bengaluru, India. All Rights Reserved. Infosys believes the information in this document is accurate as of its publication date; such information is subject to change without notice. Infosys acknowledges the proprietary rights of other companies to the trademarks, product names and such other intellectual property rights mentioned in this document. Except as expressly permitted, neither this documentation nor any part of it may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, printing, photocopying, recording or otherwise, without the prior permission of Infosys Limited and/ or any named intellectual property rights holders under this document.