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CHECK-IN TO THE FUTURE: EXPLORING THE IMPACT OF CONTEMPORARY INFORMATION TECHNOLOGIES AND ARTIFICIAL INTELLIGENCE ON THE HOTEL INDUSTRY

U KORAK SA BUDUĆNOŠĆU: ISTRAŽIVANJE UPOTREBE SAVREMENIH INFORMACIONIH TEHNOLOGIJA I VEŠTAČKE INTELIGENCIJE U HOTELIJERSTVU

Abstract: *The hotel industry is undergoing significant change as a result of technological advancements and shifting guest preferences. Artificial intelligence (AI) is playing an increasingly important role in this transformation, allowing hotels to provide personalized, efficient, and sustainable experiences that meet the needs of modern travelers. This paper provides an overview of the role and application of AI in the hotel industry, highlighting its benefits and challenges as well as presenting case studies that show how hotels are currently utilizing AI technology. According to the review of literature, AI technology can be used to optimize hotel operations, improve the guest experience, and boost sustainability efforts. However, the use of AI technology in the hotel industry raises concerns about data privacy and security, job displacement, and the need for human supervision to ensure ethical and responsible deployment. Finally, the paper discusses the future directions of AI in the hotel industry, highlighting the emergence of voice technology and augmented reality as potential areas for future innovation. This paper adds to the growing body of literature on the use of*

Apstrakt: *Hotelska industrija prolazi kroz značajne promene kao posledica tehnološkog napretka i promenama u željama gostiju. Veštačka inteligencija (VI) igra sve važniju ulogu u ovom procesu transformacije, omogućavajući hotelima da pruže personalizovana, efikasna i održiva iskustva koja ispunjavaju potrebe modernih putnika. Kroz pregled upotrebe VI u hotelijerstvu, ovaj rad naglašava njen koristan uticaj i izazove i predstavlja studije slučaja koje pokazuju kako hoteli trenutno koriste tehnologiju VI. Prema pregledu literature, VI tehnologija može se koristiti za optimizaciju hotelskih operacija, poboljšanje iskustva gostiju i podršku održivosti. Međutim, upotreba VI tehnologije u hotelijerstvu izaziva i zabrinutost u pogledu zaštite podataka i bezbednosti, gubitka radnih mesta i potrebe za ljudskim nadzorom kako bi se osiguralo etičko i odgovorno korišćenje. Konačno, rad razmatra buduće pravce razvoja VI u hotelijerstvu, ističući pojavu tehnologija glasovne kontrole i proširene stvarnosti kao i potencijalna područja za buduću inovaciju. Ovaj rad doprinosi rastućoj literaturi o upotrebi VI u hotelijerstvu i pruža korisne uvide za*

AI in the hotel industry and provides useful insights for hotel managers, technology providers, and researchers.

Keywords: *Artificial Intelligence; AI, technology; hotel industry; Marriott; Hilton; InterContinental*

menadžere hotela, pružaocima tehnoloških rešenja, kao i istraživačima u polju.

Ključne reči: *Veštačka inteligencija; VI; tehnologija; hotelijerstvo; Marriott; Hilton; InterContinental*

Introduction

The hotel industry is facing increasing competition and demands from customers for personalized, seamless experiences. Hotels are turning to artificial intelligence (AI) to optimize operations (Lau, 2020), improve customer service (Hoyer et al., 2020), and enhance the guest experience (Ameen et al., 2021) in order to meet these challenges. AI has the potential to revolutionize the hospitality industry by providing hotels with the tools they need to deliver exceptional service (Štilić et al., 2022) while also reducing costs and increasing efficiency (Nam et al., 2021).

The main objective of this paper is to investigate the role and application of AI in the hotel industry. This paper will look specifically at how AI is used to improve various aspects of hotel operations, such as customer service, marketing, revenue management, and security. The paper will also analyze the benefits and challenges of AI implementation in the hotel industry, as well as the ethical considerations and potential future developments.

In recent years, the use of AI in the hotel industry has become increasingly prevalent. One of the most common applications of AI in hotels is the use of chatbots and virtual assistants to handle customer inquiries and requests (Buhalis & Cheng, 2020). These chatbots use natural language processing and machine learning algorithms to understand guest requests and provide relevant responses. By automating common customer service interactions, hotels can reduce costs and improve the efficiency of their operations. The use of machine learning algorithms to optimize room pricing and revenue management is another application of AI in the hotel industry (Shehhi & Karathanasopoulos, 2020). To determine the best price for each room, these algorithms analyze a variety of data sources, including historical booking data, competitor rates, and market trends. By optimizing room prices, hotels can increase revenue while also providing customers with competitive prices. AI is also being used to personalize guest experiences and improve marketing efforts (Kapoor & Kapoor, 2021). Hotel companies are developing mobile apps that use AI to suggest amenities and activities based on guest preferences and behaviors. Guests can also use these apps to communicate with hotel staff and make requests. By providing personalized recommendations and experiences, hotels can improve guest satisfaction and loyalty (Díaz & Duque, 2021).

However, the implementation of AI in the hotel industry is not without its challenges (Castillo et al., 2021). One major source of concern is the possibility of job loss due to automation. As hotels rely more on AI-powered chatbots and other technologies, the need for human customer service representatives may decrease. There are also ethical concerns about the use of AI in the hotel industry, such as data privacy and security concerns. Despite these challenges, the benefits of AI implementation in the hotel industry are significant (Li et al., 2019). By providing personalized experiences (Štilić et al., 2022) and improving operational efficiency, hotels can gain a competitive advantage and improve customer satisfaction. As the technology continues to evolve, the potential applications of AI in the hotel industry will only increase.

The aim of this paper is to present a thorough overview of the function and use of AI in the hotel industry. By examining the ben-

efits and challenges of AI implementation, as well as potential future developments, this paper will demonstrate the potential impact of AI on the hospitality industry. The following sections will provide a detailed analysis of AI applications in the hotel industry, including case studies and examples of successful AI implementation.

Literature Review

The use of AI in the hotel industry has become increasingly prevalent in recent years. As hotels face growing competition and customer expectations for personalized experiences, AI has emerged as a powerful tool for improving operations and enhancing the guest experience (Kliestik et al., 2022). This section will review the existing literature on the role and application of AI in the hotel industry, including the benefits and challenges of AI implementation.

One of the most common applications of AI in the hotel industry is the use of chatbots and virtual assistants to handle customer inquiries and requests (Rayan et al., 2023). Several studies have explored the impact of chatbots (Ukpabi et al., 2019, Pillai & Sivathanu, 2020) on customer satisfaction and loyalty. For example, in a study by Ruan and Mezei (2022) and a study by Lei et al. (2021), the authors were exploring if customers who interacted with a hotel chatbot had higher satisfaction ratings than those who interacted with a human customer service representative. Another study by Patel and Trivedi (2020) found that chatbots improved customer loyalty by providing personalized recommendations and faster service.

AI is also being used to optimize room pricing and revenue management. Several studies have examined the effectiveness of machine learning algorithms for room pricing. For example, a study by Pereira and Cerqueira (2021) and a study by Shehhi and Karathanasopoulos (2020) found that machine-learning algorithms outperformed traditional revenue management models in terms of accuracy and revenue optimization. Another study by Sánchez-Medina and C-Sánchez (2020) found that machine-learning algorithms were effective in predicting room demand and optimizing pricing strategies.

In addition to improving operational efficiency, AI is also being used to enhance the guest experience. One example of this is the use of mobile apps that incorporate AI to provide personalized recommendations and communication with hotel staff. A study by Molinillo et al. (2021) explored the influence of mobile apps that use AI to personalize recommendations and experiences on a positive impact on users` satisfaction and loyalty.

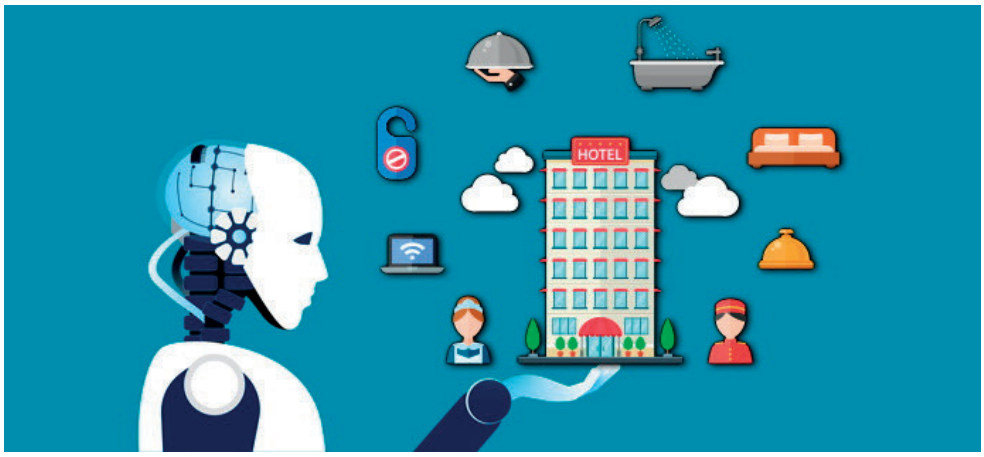
While the benefits of AI implementation in the hotel industry are significant, there are also challenges to consider. One major concern is the potential loss of jobs due to automation. Numerous studies found that employees from various industries were concerned about the impact of AI on job security and expressed the need for training and upskilling to adapt to changing job requirements (Tuomi et al., 2020; Johnson et al., 2022; Lee et al., 2022; Mer & Virdi, 2023). Another challenge is the ethical considerations surrounding the use of AI in the hotel industry. A study by Cheng and Jiang (2020) found that customers had concerns about data privacy and security when interacting with AI-powered chatbots.

The literature on AI's use in the hotel industry, in conclusion, highlights both the potential advantages and difficulties of its implementation. Virtual assistants and chatbots have been shown to increase customer satisfaction and loyalty, while machine-learning algorithms are useful for enhancing pricing and revenue management strategies. It has also been discovered that mobile apps that use AI to personalize customer experiences increase customer satisfaction and loyalty. However, it is also important to take into account ethical issues like data security and privacy as well as the potential loss of jobs due to automation.

AI Applications in the Hotel Industry

As the hotel industry becomes increasingly competitive, the use of AI will become even more important for improving efficiency and providing a personalized guest experience (Limna, 2023). Due to the large amounts of data generated and the potential for personalized experiences, the hotel industry is an ideal industry for the implementation of AI. This section will explore some of the specific applications of AI in the hotel industry, including chatbots and virtual assistants, revenue management, and personalized guest experiences (Figure 1).

Figure 1. *How AI is Changing the Game for the Hotel Industry*



Source: Hotelogix, 2018

One of the most common applications of AI in the hotel industry is the use of chatbots and virtual assistants (Rayan et al., 2023). Chatbots are computer programs designed to simulate human-to-human interaction (Rahman et al., 2019), while virtual assistants are more advanced AI-powered tools that can handle complex tasks and provide personalized recommendations (Kong et al., 2021). Chatbots and virtual assistants are typically used to handle customer inquiries, requests, and complaints, freeing up hotel staff to focus on more complex tasks (Gangwar & Reddy, 2023). Chatbots and virtual assistants can also provide a personalized experience for guests by using data analytics to learn about their preferences and habits (Rawal et al., 2022). A hotel chatbot, for example, may recommend local restaurants or tourist attractions based on a guest's search history, or it may provide personalized recommendations for room amenities based on previous bookings. Furthermore, chatbots and virtual assistants can provide customer support 24 hours a day, seven days a week, improving response times and overall customer satisfaction.

Revenue management is another application of AI in the hotel industry. Revenue management entails real-time adjustments to room rates based on factors such as demand, seasonality, and customer behavior (Enache, 2019). AI-powered algorithms can analyze large amounts of data to identify patterns and forecast future demand (Bharati, 2023), allowing hotels to optimize pricing strategies and maximize revenue. Because they can analyze large amounts of data in real-time and adjust pricing strategies accordingly, machine learning algorithms are particularly effective for revenue management (Bounatirou & Lim, 2020). Machine learning algorithms, for example, can analyze historical booking data and adjust pricing based on the day of the week, time of day, and

other variables. This enables hotels to provide dynamic pricing that reflects real-time demand, which improves revenue management and profitability.

The personalization of visitor experiences is another application of AI. Hotels, for example, can use AI-powered mobile apps to provide personalized recommendations for nearby attractions and events (R, 2022) based on a guest's preferences and previous bookings. These mobile apps can also enable guests to communicate with hotel staff in real time, allowing them to make requests or report issues more quickly and efficiently. AI can also be used to customize room amenities such as lighting, temperature, and entertainment options (Prentice et al., 2020) . Hotels, for example, can use AI-powered sensors to adjust room temperature and lighting based on the preferences and habits of their guests. This can result in a more comfortable and personalized experience for guests, resulting in greater satisfaction and loyalty (Figure 1).

Benefits and Challenges of AI in the Hotel Industry

When implementing AI, it is critical for hotels to carefully weigh benefits and challenges and have a plan in place that will lead to success. Hotels can achieve operational excellence and provide a personalized guest experience by leveraging AI technology responsibly and strategically. While AI has significant potential for improving hotel operations and improving the guest experience, there are several challenges and potential drawbacks that must be considered (Table 1).

Increased productivity is one of the main advantages of AI for the hotel sector (Huang et al., 2021). Hotel staff can concentrate on more complex tasks that require human intervention by automating routine tasks such as customer inquiries, reservations, and check-ins. This can result in higher productivity, lower costs, and a more streamlined and efficient guest experience. By automating routine tasks and enhancing revenue management, AI can also assist hotels in cutting costs (Buhalis & Moldavska, 2021). Hotels can optimize revenue and profitability by analyzing data in real-time and adjusting pricing strategies accordingly. Furthermore, AI-powered sensors can assist hotels in reducing energy consumption by automatically adjusting lighting and temperature settings based on occupancy and other factors. Furthermore, AI can provide personalized recommendations for local attractions and events, improve room amenities, and provide guests with a more comfortable and personalized experience. This can lead to increased guest satisfaction and loyalty, as well as revenue growth from repeat bookings and positive reviews.

On the other hand, protecting privacy and data security is one of the biggest problems with AI in the hotel industry (Mazurek & Małagocka, 2019). A risk of data breaches and privacy violations exists owing to the vast amounts of data that hotels produce. To protect guest data, hotels must implement strong security measures and comply with regulations such as General Data Protection Regulation (GDPR) and California Consumer Privacy Act (CCPA). Even though AI can automate common tasks, it cannot take the place of the human touch in hospitality (Solnet et al., 2019). For specific tasks, like making special requests or resolving complaints, some visitors might prefer to communicate with human staff. For hotels to deliver a personalized guest experience, it is critical to strike a balance between automation and human interaction. Finally, implementing AI in the hotel industry can be technically difficult, necessitating significant investment in infrastructure and training (Chen et al., 2022). Hotels must have a clear strategy and roadmap for implementing AI, which includes selecting the right technology partners and ensuring that employees have the necessary skills and training.

Table 1. *Benefits and Challenges of AI in the Hotel Industry*

Benefits	Challenges
Improved Efficiency	Privacy and Data Security
Cost Savings	Lack of Human Interaction
Enhanced Guest Experiences	Technical Challenges

Source: Authors' research

Case Studies

This section examines three case studies from Marriott International, Hilton Worldwide, and InterContinental Hotels Group in order to offer specific illustrations of how AI is being applied in the hotel sector. These case studies demonstrate how AI has the potential to transform the hotel industry by improving guest experiences and increasing efficiency. By strategically and responsibly utilizing AI technology, the aforementioned hotel chains are setting themselves apart from the competition by offering a customized guest experience that caters to the needs and preferences of contemporary travelers.

Marriott International

Marriott International has been focusing on incorporating AI technology to improve guest experiences and streamline operations. One of the innovations introduced by Marriott is Alexa for Hospitality, which is a version of Amazon Alexa specifically designed for the hospitality industry. Alexa for Hospitality provides basic Alexa features such as internet searches and music playback, as well as hotel-specific functions like setting alarms, adjusting room temperature and lighting, ordering room service, housekeeping, contacting the front desk, and facilitating virtual checkout. The two Marriott hotels in Los Angeles have implemented Alexa for Hospitality (Huang et al., 2021; Amazon Alexa, 2023).

Facial recognition check-in kiosks have been introduced by Marriott to reduce check-in time. The company piloted the use of these kiosks at two locations in China, namely Hangzhou and Sanya, in 2018. Customers are required to scan their ID, have their photo taken by the machine, sign a service agreement form, and enter their contact information. The facial recognition software verifies the personal and reservation details and dispenses room keys in less than three minutes, reducing check-in time by two-thirds (Huang et al., 2021).

Marriott has been utilizing Alexa robots in some of its hotels as in-room voice assistants and robotic butlers, providing guests with an improved and convenient hospitality experience (Rawal et al., 2022), and on a local scale, Marriott in Belgium has its own independent concierge robot named Mario. Marriott has also developed its own chatbot technology, called Botlr, which has been effective in replacing phone calls and automated emails, improving customer service efficiency (Uniyal & Shama, 2020).

Hilton Worldwide

Hilton Worldwide has integrated AI to improve guest experiences and streamline operations. In 2016, the hotel chain began to differentiate its strategy by incorporating AI into its digital concierge services. The goal was to convince guests to use Hilton's website for reservations instead of third-party travel sites. As guests browse the website, a chat box appears to assist them according to their specific needs. Support bots offer the main advantage of handling thousands of bookings and inquiries simultaneously, allowing hoteliers to get in touch with guests much earlier in the booking process.

One prime example of this is Connie, a digital concierge service powered by IBM's

Watson AI technology. Connie offers personalized recommendations for local attractions and events, as well as answers to common guest questions (Uniyal & Shama, 2020). Connie is also deployed to provide check-in services, information about hotel amenities and local attractions, dining options, weather forecasts, and more. It is important to note that these concierge robots continuously learn and expand their knowledge with each interaction, helping them provide more complete and accurate information to guests.

Moreover, butler robots and concierge robots not only deliver guest supplies like water, towels, and shaving kits to guest rooms (Uniyal & Shama, 2020) but also serve as an attraction for guests (Lukanova & Ilieva, 2019). They can also collect information about guest preferences, satisfaction, and purchase patterns, which can then be used by hoteliers to provide a more personalized service and increase customer loyalty.

Leading software companies such as IBM, NCR, and Clock work closely with hotel chains like Hilton to install digital kiosks. Hilton takes it a step further by installing a digital kiosk at the airport baggage claim area, allowing guests to check in at the airport long before arriving at the hotel.

InterContinental Hotels Group

InterContinental Hotels Group (IHG) recognizes the importance of technology and digital innovation in enhancing guest experience. In order to develop a loyalty program that creates lifelong relationships with guests and provides personalized offers, IHG is focusing on digital innovation. Compared to its main competitors, IHG is considered a pioneer in AI and data adoption, with a higher level of understanding of AI analytics, quality of data, and supercomputing systems. One example of this is the development and launch of Concerto in 2017, a user-friendly hotel platform that is connected to the cloud, Guest Reservations System, and Revenue Management System. Within a year, IHG successfully onboarded its entire portfolio onto this new system, positioning itself as one of the digital leaders in the hospitality industry (Bounatirou & Lim, 2020).

Over the past few years, a growing number of hotels have adopted robots to perform various tasks such as room cleaning, concierge and room service, and entertainment. Savioke, a technology company, has been at the forefront of this trend by developing autonomous indoor service robots specifically for the hospitality industry. These robots, called butler robots, are capable of delivering items ordered by guests to their hotel rooms. The specific model of the robot is called Relay, but hotels are free to give it their own unique name, such as Dash in the case of Crowne Plaza - InterContinental Hotels Group (Lukanova & Ilieva, 2019).

Evaluation of AI applications

The evaluation of AI applications in the hospitality and tourism industry is an important aspect of understanding how AI is being implemented in this sector. The research by Huang et al. (2021) reviewed existing research and some, but not all, of the current applications of AI in the hospitality and tourism industry and proposed a new evaluation framework to inform the susceptibility of AI adoptions. Figure 2, obtained from their study (Huang et al., 2021), provides a visual representation of the different types of AI and the various AI applications being utilized in the industry. The types of AI represented include solutions for searching/booking engines, virtual agents or chatbots, robots and autonomous vehicles, kiosks or self-service screens and AR/VR. The evaluation of listed AI applications is crucial in determining their effectiveness and impact on the industry. By understanding the strengths and limitations of each AI application, hospitality and tourism businesses can make informed decisions about which technologies to implement to enhance their operations and services.

***Figure 2**. Results of evaluation of AI applications in the hospitality and tourism industry*

Type of AI	AI application	Relative advantage	Compatibility	Complexity	Trialability	Observability	Perceived risks	Immersion	Overall rating
Searching/booking engines	Allora	★	★	★	★	★			5
	Resy	★	★	★	★	★			5
	Allset	★	★	★	★	★			5
	Airbnb	★	★	★	★	★			5
	Wayblazer	★	★	★	★	★			5
Virtual agents or chatbots	Google Assistant	★	★	★	★	★			5
	Amazon Alexa	★	★	★	★	★			5
	Edward the Chatbot	★	★	★	★	★			5
	Macy's on Call	★	★	★	★	★			5
	Tacobot	★	★	★	★	★			5
	My Starbucks Barista	★	★	★	★	★			5
	Subway Order Bot	★	★	★	★	★			5
Robots and autonomous vehicles	Knightscope K Series	★	★			★			3
	Travelmate	★	★	★		★			4
	Autonomous Suitcase Connie	★	★	★		★			4
	Domino's Pizza Autonomous Delivery	★	★			★			3
	Flippy	★	★			★			3
Kiosks or self-service screens	Facial Recognition Check-in Kiosk	★	★	★		★			4
	Smile to Pay Facial Recognition System	★	★	★		★			4
AR/VR	ETRIPS AR Travel App		★	★	★	★	★	★	6
	In-Room AR Map		★	★		★	★	★	5
	VR travel Booking Goggles VR		★	★		★	★	★	5
	Honeymoon Teleporter		★	★		★	★	★	5
	In-room AR Athlete Encounter		★	★		★	★	★	5
	AR Fine Arts Windows		★	★		★	★	★	5

Source: Huang et al., 2021

Future Directions

Due to new trends like shifting consumer preferences, technological advancements, and the entry of new competitors, the hotel industry is expected to undergo significant change in the upcoming years. The increasing use of AI technology is one trend that is expected to have a significant impact on the industry. By presenting opportunities for innovation and differentiation, AI has the potential to thoroughly alter the manner in which hotels operate.

Personalization is one of the key areas where AI is expected to make a significant difference in the future (Nam et al., 2021). Today's guests want personalized experiences that cater to their specific preferences and needs. AI-powered technology can assist hotels in analyzing guest data and providing personalized recommendations for services and amenities. Hotels can expect more AI-powered personalization options in the future, such as personalized welcome messages, customized room amenities, or personalized recommendations for local attractions and activities. Hotels can gain deeper insights into their guests' preferences and behavior by utilizing AI, allowing them to create more meaningful connections with their guests and differentiate themselves from the competition.

Routine task automation is also an area where AI is expected to be particularly useful. Hotels are able to give staff members more time for more complex tasks that call for human expertise as AI-powered chatbots and other automated systems become more widely used (Buhalis & Cheng, 2020). Hotels can anticipate more sophisticated AI-powered automation options in the future, such as smart room sensors that automatically adjust temperature and lighting based on visitor preferences or self-driving cleaning robots that can effectively clean rooms and public areas. These innovations have the potential to increase operational efficiency and lower costs while maintaining a high level of service.

Sustainability, which will help decrease hotels' environmental impact, is yet another area where AI is anticipated to help in the future (Loureiro & Nascimento, 2021). Hotels are under pressure to adopt sustainable practices as guests become more environmentally conscious. AI technology can be used to optimize energy use, reduce waste, and improve efficiency, resulting in cost savings and a lower environmental impact. Hotels can anticipate seeing more AI-driven sustainability initiatives in the future, such as smart energy management systems that automatically adjust energy use based on occupancy levels or waste management systems that employ AI to maximize recycling and composting.

Voice technology is a further technological innovation that is likely to gain real momentum in the hotel industry (Kiliçhan & Yilmaz, 2020). With the popularity of voice-activated assistants like Google Assistant and Alexa growing, hotels can use voice technology to automate repetitive tasks and offer personalized recommendations and services (Štilić et al., 2022). In order to better serve a wider range of guests, hotels can anticipate seeing an increase in the number of voice assistants powered by AI that can comprehend multiple languages and accents. The hotel industry's future is anticipated to be shaped by augmented reality (AR) as well. With the aid of AR technology, hotels can offer visitors immersive experiences that let them explore nearby attractions, discover the history and culture of the region, and get a sneak peek at the facilities and services (Nicić et al., 2018) the hotel has to offer.

As AI technology continues to evolve and become more sophisticated, the hotel industry can expect to see even more developments and innovations in the future. By leveraging the power of AI, hotels can create more personalized and efficient guest experiences, while also reducing costs and improving sustainability. The possibilities for innovation and differentiation are endless, and hotels that embrace AI technology are likely to stay ahead of the competition and thrive in the years to come.

Discussion and Conclusion

The growing use of cloud computing in the hotel industry to support AI and other digital technologies is also contributing to this transformation by allowing hotels to store, process, and analyze large amounts of data, streamline operations, and improve competitiveness, promoting economic freedom (Puška & Štilić, 2022). Modern technology and shifting guest preferences are driving a significant transformation in the hotel industry. The use of AI by hotels to deliver individualized, effective, and environmentally friendly experiences that satisfy modern travelers' needs is becoming an increasingly significant part of this transformation.

The literature review has demonstrated that using AI technology can optimize hotel operations, enhance the guest experience, and support sustainability initiatives. In addition to highlighting the benefits and challenges of AI in the hotel industry, this paper also examined how hotels are currently utilizing AI technology through case studies. Increased productivity, financial savings, and higher customer satisfaction are just a few advantages of AI technology in the hotel sector.

The use of AI technology in the hotel industry is not without its concerns, though. In order to ensure that AI-powered systems are used ethically and responsibly, challenges must be overcome, and they include concerns about data privacy and security, potential job displacement, and the need for human oversight (Rodrigues, 2020). Although these issues must be resolved, the advantages of AI technology outweigh the risks (Daqar & Smoudy, 2019), and the market is likely to continue adopting and utilizing it in the years to come. More hotels will likely use AI technology in the future to personalize experiences, automate repetitive tasks, increase sustainability efforts, and improve the guest experience. Furthermore,

the use of voice technology and AR is likely to become more common in the hotel industry, providing even more opportunities for differentiation and innovation.

AI technology is revolutionizing the hotel industry, offering a variety of advantages and chances for hotels to stand out and satisfy the changing needs of contemporary travelers. Even though using AI technology has its drawbacks, this can be avoided by using AI-powered systems in responsible and ethical ways. As the industry evolves, AI is likely to play an even larger role, and hotels that embrace AI technology will be better positioned to succeed in the highly competitive and rapidly changing hospitality landscape.

This paper aims to provide insight into the development of AI applications within the hotel industry as the current era of AI expansion has not excluded the hotel industry from the implementation of AI technologies. In fact, it can be argued that the hotel industry was among the first to embrace AI in business operations. The utilization of AI is transforming the way hotels across the globe operate, with notable examples of Marriott International, Hilton Worldwide, and InterContinental Hotels Group. These hotel groups have effectively implemented AI technologies such as Alexa for Hospitality, facial recognition check-in kiosks, concierge robots, chat and service bots, digital concierge services, Concerto, and Dash. These examples demonstrate the active utilization of AI within the industry, facilitating enhanced guest experiences and operational efficiency. As technology continues to advance, the industry must continue to explore new AI applications to improve guest experiences, streamline operations, and enhance sustainability efforts.

The hospitality and tourism industry has shown a growing interest in the implementation of AI technologies, with numerous examples of successful AI applications already present. However, future research and development in the industry could focus on leveraging AI for personalized experiences, routine task automation, sustainability initiatives, and voice assistants powered by AI. By embracing these opportunities, the industry can maintain its competitiveness and stay up-to-date with emerging trends.

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