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# DEVELOPMENT AND IMPLEMENTATION OF SMART TECHNOLOGIES IN HOTEL ROOMS

The hospitality industry is undergoing a profound transformation, and at the forefront of this revolution is the integration of smart technologies into hotel rooms. As travelers increasingly seek convenience, personalization, and enhanced experiences, hotels are turning to smart technologies to meet these demands. In a world where technological advancements are part of our daily lives, it's no surprise that hotels are embracing smart technologies. From smart thermostats and voice-activated assistants to high-tech TVs and smart mirrors, hotels are integrating cutting-edge solutions to enhance the guest experience.

IT companies are spending significant resources on their solutions to upgrade their technological infrastructure. In 2021, mid-range hotels led in IT expenditures, followed by upscale and luxury hotels. Expenditures are primarily focused on the continuous modernization of the service platform, which benefits both guests and the hotel. Guest interactions are facilitated through in-room screens or guests' own devices via guest systems, which, in addition to guest convenience, provide the opportunity to collect valuable data and feedback. Such IT solutions, integrated with the hotel's internal management system, enhance operational efficiency, increase revenues, and guest return rates.

Among the main factors affecting the development of smart technologies in the hotel industry, in particular on the market of Ukraine, it is advisable to highlight:

1. The demand for convenience and personalization: Travelers today demand more comfort and a personalized approach. Smart technologies enable hotels to provide personalized services, from adjusting the room environment to offering personalized recommendations for guests.

2. Increased competitiveness: Hotels use smart technologies to enhance their competitiveness and attract more guests. This may include innovations in service that make the hotel more attractive to clients.

3. Cost reduction and operational optimization: Smart technologies allow hotels to reduce energy, maintenance, and staff costs, leading to increased operational efficiency in the hotel business.

4. Improved security and control: Smart technologies help improve security for guests and property while also enabling hotels to remotely control various aspects of

operations.

5. Internet of Things (IoT) development: IoT allows for the connection of various devices within the hotel to the internet, enabling interaction between them and data collection for analysis and management.

6. Sustainable development requirements: Smart technologies help hotels reduce resource consumption, promoting sustainable development and adherence to environmental standards.

7. Pandemic and hygiene standards: During the global COVID-19 pandemic, smart technologies became essential tools to ensure guest safety and compliance with hygiene standards.

8. Use of artificial intelligence (AI) and machine learning: AI enables hotels to analyze data and forecast guest needs, facilitating personalized service.

9. Growing dependence on smartphones: Guests increasingly use smartphones for reservations, check-ins, check-outs, and interactions with the hotel during their stay.

10. Competition in the technology market: The development of modern technologies and openness to innovation create competition, motivating hotels to implement smart solutions to maintain their market position.

These factors collectively contribute to the growth of smart technologies in the hotel industry, making them more appealing to both hotels and guests.

Under the influence of these factors, the use of smart technologies in the hotel industry of Ukraine is becoming more and more relevant in modern business conditions and contributes to the growth of demand for hotel products and services; increasing the economic efficiency of enterprises; increased attention to ensuring sanitary and hygienic standards of service in hotels (for example, contactless registration and remote control of systems in rooms); growing popularity of ecological consumption of resources and energy saving; development of tourism and technological infrastructure.In general, smart technologies in the hotel industry in Ukraine have potential. Smart hotel tech is a global trend embraced by hotels in Singapore, Las Vegas, New York, and beyond. Incorporating smart hotel technology improves efficiency, profitability, and sustainability while meeting guest expectations in today’s tech-driven world [1, 3].

Smart technology is revolutionizing the hospitality industry, bringing a host of benefits and reshaping hotels in various ways. The key ways in which smart technology is transforming hotels: smart energy management (smart thermostats and sensors optimize energy usage, reducing costs by up to 20% and increasing a hotel's value); predictive maintenance (sensor data helps predict maintenance needs, preventing costly breakdowns); smart guest experiences (guest data and sensors automate interactions, offering a personalized experience and reducing labor costs); big data and protection (while smart tech aggregates data, data protection remains vital, and providers ensuring data security will dominate); smart reserved parking (sensors and apps allow guests to reserve parking, saving on labor and improving the guest experience); remote check-in/check-out; mobile room keys; smart room service; smart marketing (data-driven marketing helps hotels attract and retain guests in a competitive landscape); online reputation management (monitoring online reviews and feedback improves operational and guest experience standards).

These trends are just the beginning, with more smart technologies like customer surveys and loyalty program management poised to play larger roles in hotel operations. The key is choosing the right technologies to meet guest expectations and improve guest experiences. [2].

For example, the Internet of Things (IoT) is transforming the hospitality industry, improving the guest experience and contributing to the sustainability and competitiveness of businesses in the hospitality market. In the global market, leading hotels such as The Aria in Las Vegas, Torch Doha in Qatar, Aloft Cupertino in California, and hotel chains Hilton and Marriott are leading hospitality establishments in the application of IoT. Ukraine also follows global trends regarding the integration of IoT technologies into the hotel industry. Examples of the introduction of IoT in hotels in Ukraine, especially in the city of Kyiv and Odesa, are «11 Mirrors Design Hotel», «Khreshchatyk», «Fairmont Grand Hotel Kyiv», «Otrada Hotel».These examples demonstrate that Ukrainian hotels are also improving their services through IoT technologies. It's important to note that as IoT continues to develop and gain popularity in the hospitality industry, other hotels in Ukraine may sooner or later join this trend [2].

Thus, the application of smart technologies in the operation of hotel business establishments in Ukraine will be important for raising the level of domestic service, attracting more foreign and domestic tourists, competitiveness and sustainable growth of the market as a whole, popularization in this market segment. Hotels that integrate modern technology will have the opportunity to attract more guests and give them an unforgettable experience.

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