

Exploring The Cutting Edge Technological Innovations Transforming In The Hospitality Industry And Understanding Guest Perception Of A Smart Hotel

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Abstract

Technology continues to change many aspects of life; the hotel industry is no exception. By combining technology with existing business practices, hoteliers can improve their interaction with their audiences. With the use of technology, organisations can enhance their booking, providing customers with mobile room keys and QR coding the hotel rooms, among other innovative ways to improve the hotel experience of the consumers. The present research has elaborated on these different aspects to help understand the importance of technology in the service sector and how with the help of smart hotel initiatives, they can improve consumer perception while using the collected consumer data to improve business functions.

Keywords: Technology, Smart Hotel, Innovation, Artificial Intelligence (AI), Consumers, Guest Perception, Acceptance, Experience

1. INTRODUCTION

Smart and innovative technology is being extensively adopted within the hospitality sector to automate processes and increase performance. The use of technologies within this sector has changed how guests interact with the organisation; the advancement of technology has allowed the organisations to provide customised services to the employees, successfully improving consumer trust and experience with the service. With cutting-edge technology, the organisation can streamline the booking process through online portals and third-party services,

allowing consumers a hassle-free booking experience. Additionally, contactless technology has significantly risen since the pandemic, providing consumers with a hygienic guest experience. The personalisation the guests are provided has also been providing the guests with a unique experience. Along with these different features which technology offers, artificial intelligence (AI) and chatbots are also being adopted to improve the booking procedure, offer recommendations and promotion of other similar services, streamlining the guest experience during their tour.

Therefore, this research aims to understand how these new technologies have successfully catered to the guests' needs. The perception and opinions of the guests have also been collected from different sources to understand how guests perceive this new use of technology. Within the research, multiple ongoing trends with digitalisation and technology uses have been observed with particular reference to how service innovation and consumer choices have affected smart hotels. It is essential to understand the role that technology in the hotel industry currently plays with the different AI-powered services for creating a memorable experience for the audience. Therefore, The present research is highly significant as it helps raise the hoteliers' awareness levels in embracing the technological changes that have captivated the service industry. Technology benefits consumers and businesses by enhancing communication between the different stakeholders involved in the process. It also removes the expensive human labour previously needed to manage the organisation; the labour can be used elsewhere to improve the guest experience.

2. METHODOLOGY

As the present research is qualitative, the methodological tool used within the study is thematic analysis. In order to carry out the research, multiple research papers have been collected from authentic sources such as peer-reviewed articles, journals, official websites and newspapers. The collected information has been categorised into different groups and analysed with the help of thematic analysis. The study also includes a detailed discussion section to explain the processes. As per the findings of Chen et al. (2021), using thematic analysis allows the researcher to investigate the different methods, benefits and challenges associated with the research phenomenon. The researchers have further stated that the purpose of using thematic analysis is not to identify unique findings but rather to find the existing patterns and classifications. As the present research is focused on understanding how technological innovation has been affecting

the hospitality sector and guest perception, this method will be highly beneficial for the process.

3. FINDINGS

3.1 Digital Transformation Trends and Innovation in the Hospitality Industry

Digital transformation in the hotel industry essentially refers to adopting new technological methods to help transform the business. Over the years, many ways to improve consumer service have been discovered. This has helped increase consistency within the hospitality sectors and allowed them to improve their value chains to better serve their consumers. Mobile integration is the most prominent factor that has led to digital transformation in the hospitality sector (Forbes, 2018). With the help of their mobile devices, consumers are able to check in, book room services, and carry out every potential chore. The hotels have also introduced different kinds of AI-powered chatbots that can provide necessary information to the consumers when they visit the company website; all sorts of booking-related concerns are handled directly with the help of the chatbots. The chatbots are able to perform advanced tasks such as carrying out reservations for guests, providing them with vouchers and so on.

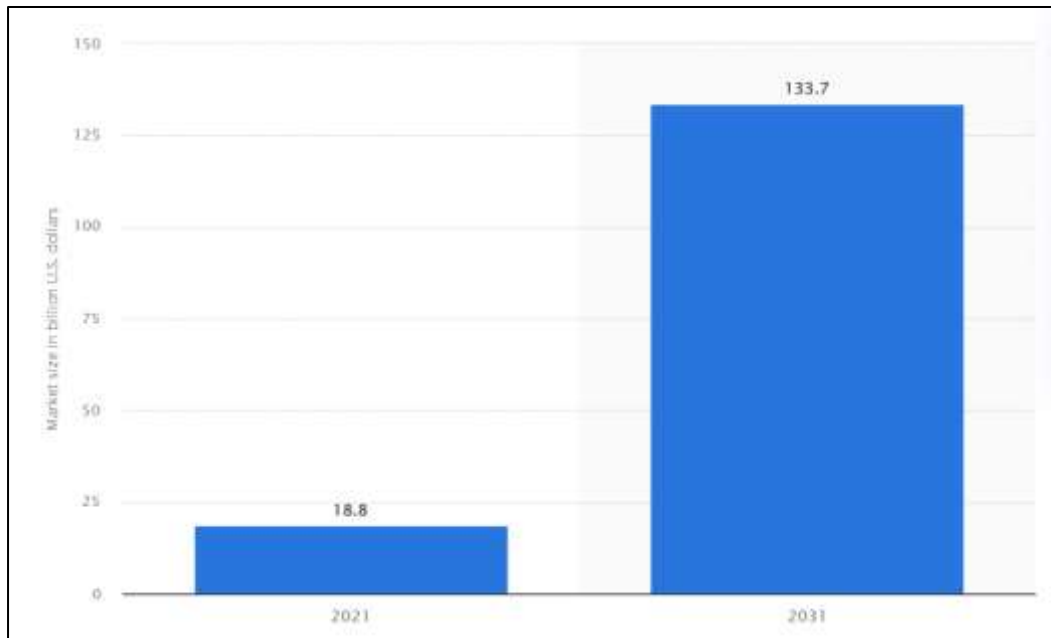


Figure 1: Market Size of the Smart Hospitality Sector and 2031 Forecast

(Source: Statista, 2023)

Additionally, it has been found that several hotels have incorporated IoT within their sector to keep all of the operations

more connected; consumers can use this feature to book reservations and promote new services, offers and discounts. In the modern age, organisations need to be focused on collecting and analysing consumer data; this helps in understanding their preferences and the organisation's needs and expectations. The hospitality industry includes tourism, lodging, drinking and food services. Even during the pandemic, the hospitality sector has experienced immense growth, with the size of the hospitality industry reaching 3486.77 billion US dollars (Statista, 2023). Modern consumers need appropriate accommodations, and therefore, the services which are provided by the hospitality industry need to embrace digitalisation and adopt it adequately. The pandemic has mainly been responsible for carrying forward this sector. As shown in the image above, in 2021, the smart hospitality market reached 19 billion US dollars and is expected to reach 133.7 billion US dollars if it keeps growing at the same rate as it is now (Statista, 2023).

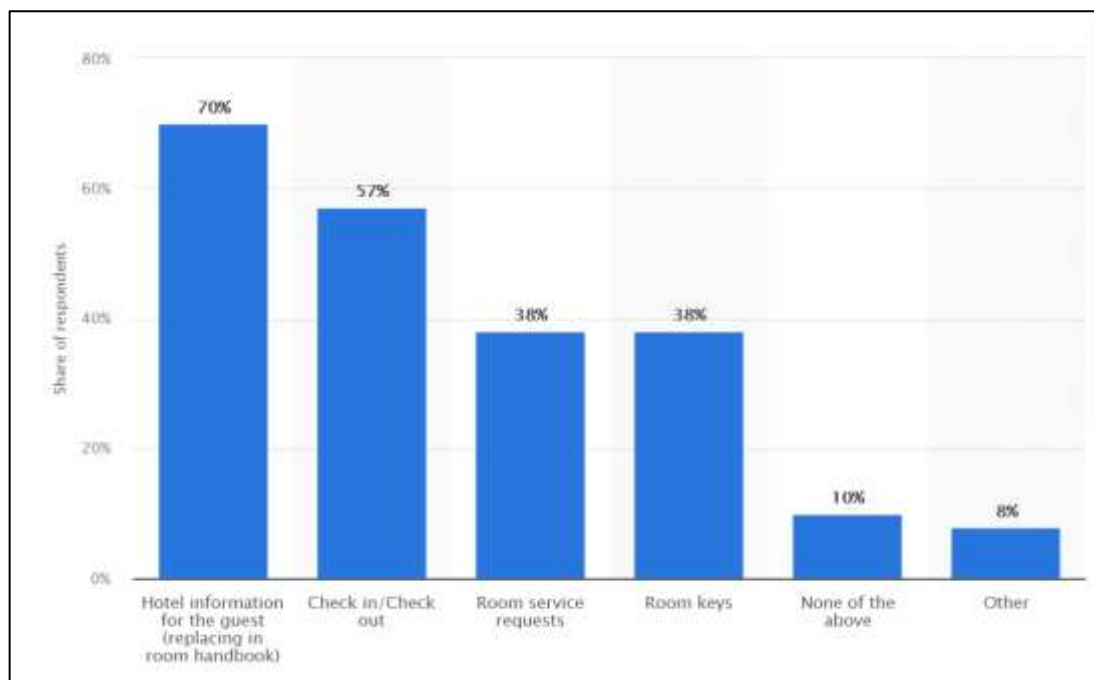


Figure 2: Guest experience Hoteliers are looking to Digitalize

(Source: Statista, 2021)

The chart above has successfully portrayed the significance of digitalisation in the hospitality industry and how hoteliers are looking for different ways through which they can enhance the experience of consumers. From all of the various ways in which the hotel service can be improved, making all information available to guests beforehand and the ease of check-in and check-outs were identified as the main contributing factors to increasing consumer perceptions (Statista, 2021). The research

which has been carried out by Alrawadieh, Alrawadieh& Cetin (2021) in this context has been particularly illuminating as it has shown how the rise of how information technology has led to a transformation of the hospitality sector and have made way for big data-based operation models. It has become essential for hotels to introduce digital technology into their business practices to increase company revenue. In the study, it has been stated that online reviews and referrals play a significant role in shaping people's opinions; therefore, organisations that have good communication and understand consumers' preferences are more likely to succeed within the highly competitive service industry. Digitalisation has led to the introduction of many tools that can help businesses to understand consumer needs better.

3.2 Artificial Intelligence and Industry 4.0 in Hospitality Industry

Artificial Intelligence (AI) is one of the newer technologies that has allowed hotels to provide personalised services to their consumers; the virtual assistance services that these kinds of applications offer can be used to gain knowledge about the preferences of consumers, which can then be applied to improve the organisation's performance. Narayan et al. (2022), in their research, have described artificial intelligence as a milestone that can help the hospitality industry make better decisions for their consumers, nurture their business and make it palatable for their consumers. There are different kinds of visitors, and implementing AI within the business process will allow the organisation to make them aware of native items and services. The feedback and experience of the consumers can also be collected with the help of AI, which can be used to improve the products and the consumer's expectations. Customer perceptions and feedback play an essential role in the development of the hospitality sector; studies have shown that satisfaction with the service provided will lead to consumers suggesting the benefits to others.

The tools of Industry 4.0 has led to the development of computerised creation measures that is pivotal to the hospitality industry. Calero-Sanz et al. (2022) have argued that the use of AI in the tourism sector has allowed organisations to analyse the comments that tourists make about tourism, and from their suggestions and experience, changes can be implemented to find trends, patterns and expectations that consumers have from the tourism sector. Similar to AI, machine learning (ML) can also be implemented by organisations to predict future ratings of the company and, in a way, increase the competitive aspect of the company. Many organisations have already started adopting human-robot interactions (HRI) in their organisations; the

exchanges have been positive; organisations are also able to compare their prices against other prices of products and services within the market on platforms such as TripAdvisor and use the information collected to improve customer perception of products and services.

The service sector is an essential segment in the emerging global economy; during the pandemic, many of these companies were able to adapt to the changes and implement touchless services to consumers. While the effects of the pandemic have diminished, the world has embraced hybrid working and living conditions; the hospitality sector, therefore, also needs to upgrade its business pattern to accommodate the audience. Industry 4.0 has given rise to different kinds of robots that can comfort consumers and increase their satisfaction levels (Pandya & Kumar, 2023). Augmented reality (AR) and Virtual reality (VR) are products of the fourth industrial revolution that allows companies to combine real environments with the virtual and provide potential customers with a glimpse of what the service looks like. Adopting AI and, by and large, Industry 4.0 in the business procedure can increase the organisation's efficiency levels and productivity. AI can take care of all kinds of repetitive tasks within the company, making the employees focus on other aspects of the business that need attention. Convenient services are also likely to influence guest perception and satisfaction levels.

3.3 Service innovation, consumer choices and Smart Hotels

As society becomes more prone to using mobile applications and smart devices, its impact has been felt in multiple sectors, including travel and tourism. Studies have shown that to remain competitive within the market, the different service industries must adapt and introduce service innovations that combine technology and provide personalised services to consumers (Kamboj & Gupta, 2020). The researchers have stated that in the hospitality industry, innovation can range from incremental to disruptive levels; service innovation in modern times is trying to harness consumer knowledge for the development of services that can increase collaboration within the organisation and provide different attributes for the market. Studies have shown that even though many sectors acknowledge service innovation and its impact, it needs to be actively implemented for the hotels, leading to minimum growth aspects for the organisation.

Co-creation has been suggested as one of the methods that can improve the organisation's financial standpoint as it combines different service sectors such as hospitality, manufacturing and

information technology. In recent times, organisations have devised innovative tools that can help them communicate with their consumers with the help of user toolkits; this allows consumers to customise and develop their own products and services (Kamboj & Gupta, 2020). The advancements in mobile devices have allowed consumers to communicate easily with the different hotels in the service sector; they can share their experiences and opinions through social media and make others aware of those seeking the same service. Social interactions highly drive consumers' choices, and therefore smart hotels need to be mindful of these factors.

The impact of service innovation has also been brought to light by Truong et al. (2020); the researchers have observed that consumer satisfaction is often based on the different services that are provided to them. While transaction-specific satisfaction refers to the consumer's satisfaction level for a particular product or service, overall satisfaction refers to the accumulation of the consumer's experience of the specific service. In the context to service innovation, the researchers have stated that overall satisfaction is something consumers look forward to during their visits to smart hotels. The guest perception, therefore, as stated, is driven by the benefits and convenience that they get with the service that is provided to them by the smart hotel. Smart hotels that can understand consumer needs and make intricate decision making that influences the consumer's behaviour are therefore valued more. The wide range of personalised and automated services that are available in smart hotels mainly influences consumer decisions.

3.4 Strategies to enhance hotel guest acceptance and experience with Smart Hotels

The present research findings have shown how technology has enriched the hotel industry and the need for marketing strategies to maintain market competitiveness. Yang et al. (2021) have stated in their research how smart hotels can provide hoteliers with new information and communication technologies to enhance business practice. The global computer networks help directly manage and integrate the technological systems with the hotel operations. The companies can strategise on using IoT, cloud computing and other forms of smart technologies to get a competitive edge over their rivals. The study has further shared how implementing ICT within business functions can increase the efficiency of services provided to the audience. Collaboration with smart technology companies is a strategy that can make the organisation's hoteliers more responsive. The study offers the

example of Marriott International, which has teamed up with Samsung and Legrand to launch hotel rooms that IoT powers, as a result, the consumers can control multiple appliances within the room with the help of their smartphones. Similarly, the Shangri-La Group has also partnered with Tencent to develop hotels powered by technology.

Aside from enhancing the experience levels of the guests and tourists within the hotel, another significant business strategy involves the development of EE smart technology to collect the personal behavioural data of the consumers. The strategy implemented by the organisation can only be successful if it understands the needs, expectations and preferences that consumers have towards the organisation; this method, therefore, allows the company to deliver personalised services that are unique to the guests. Personalisation is an important approach that is revolutionising the delivery aspect and meeting the needs of consumers (Han et al. 2021). However, the research has also pointed out that while smart technology needs to be focused on for the future, innovation needs to be downplayed not to overwhelm the staff and regular consumers. Innovation and changes must be implemented slowly to ensure the guests support the procedure. In collecting guest behaviour, although consumer behaviour will change over time, collecting and observing them can help adjust the organisation's decision-making process.

Kim, Montes & Han (2021) also researched the importance of understanding consumer intentions. It has been discovered that the dramatic development of technology within the hotel industry has raised fierce competition among the different hotels. Many established hotels have started adopting high technologies to meet the guests' needs. While the level of technology an organisation uses can often vary, smart hotels generally reduce their reliance on human employees. In such a field driven by technology, the expected benefits of identifying indicators of consumer behaviour can play a significant role. Conducting consumer behaviour analysis helps raise the guests' compatibility, convenience, emotions and functions in a social setting. Cutting edge technology can help assist individuals and address the benefits consumers can gain through the advanced use of technology. People are generally more accepting towards efficient services associated with offerings. One of the salient features of technology is the efficiency that it can provide to organisations. The acceptance behaviour of the user can therefore be analysed

to make recommendations for the hotel, which can make the business more successful.

The technological revolution which has taken place over the last two decades has raised the competitiveness of organisations. Novel technologies being developed have been adopted in several ways, such as chatbots, delivery robots, mobile service requests for hotel services, and voice control. Kim, Lee & Han (2020) have stated technology and sustainable consumer behaviour are directly linked as they help amplify, determine and promote the different aspects. Consumers with a distinctive level of familiarity with technology have an increased readiness towards its use; they can initiate critical variables needed for the research. Therefore, the guests' technology readiness plays a significant role in forming the behaviour and attitude of the audience.

The study has suggested that while technology is being adopted across multiple domains in the service industry, it is generally one particular service, such as robots, control systems and mobile applications. It is hard to evaluate these changes' overall impact on consumer behaviour. The consumer's attitude and word of mouth are how their opinion and intention with the technology are collected. Innovative technology usually reduces the harmful ecological impact on the planet and makes the company's functions more sustainable; this amplifies the use of resources and makes the business more sustainable in the long run. The study by Kim, Lee & Han (2020) explained how customer orientation, process evaluation and improvement are significant factors that have helped raise hospitality operations.

4. DISCUSSION

The present research findings have successfully provided a descriptive picture of the use of technology in the hotel industry. The trends within the hotel industry have influenced innovation, and as a result, many hoteliers have started utilising smart devices to provide constant less experience to the guests. The study has observed how developing new and innovative chatbots has allowed the audience to connect with the hotels directly, share their experience and make bookings. The market growth of the smart hotel industry has been evaluated to understand how it will be shaping the future. Modern consumers often look for comfort and appropriate accommodations while looking for services, digitalisation and ensure that these factors are being appropriately embraced. The findings of Verevka (2019) in this context have shown how the number of robots in the service sector increased 3 times in 2017 than in 2010. The automotive

industry has significantly benefited from this change in preferences and expectations of consumers in the hotel industry.

The vital role which artificial intelligence (AI) and Industry 4.0 in this sector cannot be over-emphasized; the increase in robotics and improved IoT setups within the organisation have mostly been made possible with due to the advanced algorithm which Industry 4.0 has helped to create. In the works of Korže (2019), it has been found that Industry 4.0 has resulted in hyper-automation of business functions; it has also helped connect people and overcome the gaps related to physical and cyber-crimes. Implementing Industry 4.0 in the different sectors might have led to disruption. Still, its technological benefits to tourism and the hotel industry have helped these sectors grow. The present research findings have also suggested different kinds of tourists; AI can help these people by improving customer perception and feedback from prior visitors.

The study has shed light on consumer choices and service innovation and how these factors have influenced the travel and tourism industries. Co-creation has been identified as one of the significant methods through which organisations can gain success. Service innovation has been recognised as a key player that has helped grow the service industry by using smartphone applications for tourism and allowing consumers to exchange location-based social information. Customer co-creation has been discussed vividly to benefit the adoption of new information technology within the organisation (Kamboj & Gupta, 2020). More emphasis has been provided on customer operant resources within the service industry to develop customised products and services for the audience. The study has suggested that some of the hotels within the sector can collaborate with the customers to understand their preferences for services and fulfil the necessary requirements.

Finally, within the research, different strategies have been analysed, which were suggested by various researchers over the years. Implementing ICT within business functions has been regarded as one of the most essential strategies to help businesses prosper. Multiple research works that have been carried out over the years have shown how with the help of collaboration, the impact of organisations can be increased. Another strategy that can help improve consumer perception includes collecting consumer information with smart data collection tools (Modica et al., 2020). The study suggests that organisations can only improve their functions and working procedures if they know the audience's needs and preferences; therefore, necessary tools

should be adopted to collect important information on the guests. Conducting consumer behaviour analysis can be significantly helpful for the business. Consumers that are familiar with the use of technology can adapt at a much faster rate, however, not everyone can accept changes that easily. The study has therefore suggested that while implementing technology is important, it should not be forced as it might alienate other loyal consumers. The present research focuses on utilising the data collection procedure to understand consumers' behavioural intentions better.

5. CONCLUSION

As concluding remarks for the present research, the present research has been highly informational as it states how technological innovation can help transform the hotel industry. The research has initially defined all of the different variables on a careful basis. The collected data from multiple secondary kinds of literature has been presented within the research with the help of thematic analysis; within this study, the different digital trends that have emerged and aided the business procedure have been studied. The study has also detailed how to implement technology in the existing operations with the help of artificial intelligence and Industry 4.0 can be significant for achieving success. Service innovation and its impact on consumers have also been focused on within the study, further suggesting the need to track consumer data to understand their preferences and needs. The research has also incorporated several strategies the organisation can use to improve the guest perception of the business.

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