Chapter 15
Smart Hotels and Technological Applications

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ABSTRACT

Technological developments and demographic changes have started to encourage the hotel businesses to use automation systems and adapt the concept of smart hotel. Smart hotels use state-of-the-art technology to provide customers with different and more technology-oriented experiences. A robot works as receptionist, concierge, bellboy, and housekeeper in such hotels. These applications are observed to minimize service failures and save on costs. For instance, chatbots created in smart hotels by means of artificial intelligence respond to customers’ problems and demands quickly and accurately. Virtual reality applications used in the marketing of smart hotels make it possible for guests to take a virtual tour of the cultural heritage sites of the destinations. Internet of things (IoT) is another technology that is often used in smart hotels to offer customers a more comfortable holiday and get instant data. Likewise, in smart hotels, self-service software technology is often used and enables customers to perform many tasks such as check-in / out, getting hotel room keys, etc.

INTRODUCTION

Changes in micro and macro environment have necessitated innovations in all the businesses. It is extremely difficult for companies to embrace macro scale changes (demographic, socio-cultural, technological and economic changes etc.) and adopt these changes to their businesses in a short span of time. Therefore, it is important to follow trends and use new products and services to adopt to these very fast and technology-driven changes. It is possible to say that hotel businesses are using more automa-
tion systems and some hotel businesses have already started to use smart hotel concepts in almost all areas (Dalgıç and Birdir, 2017: 317).

Buhalıs and Leung (2018) stated that “smartness refers to the integration of network of organizations and smart features that engage in interoperable and interconnect systems to simplify and automate daily activities and do add value throughout the ecosystem for all stakeholders”. Hotel businesses have integrated robots into their business processes to take advantage of artificial intelligence in order to attract customers and find solutions to customer problems. In hotels, robots started to perform the tasks that human beings would do, and they now work as a receptionist, concierge, bellboy, and housekeeper. In addition, Chatbots with artificial intelligence were created and customers’ requests and demands can now be answered 24 hours a day (Muthumanicam, 2018). Hotel businesses also use IoT to offer a more comfortable holiday experience to their customers and create a giant network among the objects at the hotel. In the light of internal and external data taken from the objects, hotel businesses provide a better holiday environment for their customers while creating a huge database for themselves (Kansakar, Munir and Shabani, 2017: 1; Buhalıs and Leung, 2018: 41).

The technological uses of hotels are not limited to robots, artificial intelligence and the IoT. In recent years, many hotel businesses have started to use virtual reality applications within the hotels in order to provide a better experience and to promote their hotels. The virtual reality application enables potential customers to visit the hotel before booking their stay (Beck and Egger, 2018: 3-4). Customers who purchase the service may have the opportunity to travel around the hotel and the region’s important cultural heritage with virtual reality applications without leaving the hotel and their rooms (Terry, 2016). Self-service software is another technological application that is frequently used in the hotel businesses. With the help of self-service technologies, customers can perform check-in / out, pick up hotel room keys and view their account / folio without any support from hotel employees (Rosenbaum and Wong, 2015: 1863).

Robots used in smart hotels, artificial intelligence, IoT, virtual reality and self-service technologies create many advantages for hotel companies. They reduce the costs, create a positive brand image, provide targeted marketing opportunities, enable customers to experience different technologies and create competitive advantage against other businesses. On the other hand, such technologies offers customers an opportunity for different experiences during their stay, quick solutions to their problems, and instant access to information both inside and outside the hotel. This chapter aims to present robots, artificial intelligence, IoT, virtual reality and self-service technologies and help readers discover different intelligent technologies used in such hotels and the innovations offered to customers.

BACKGROUND

Smart Hotels

Nowadays, the number of people who want to stay in luxury and more comfortable hotel rooms is increasing. Most of these people want to be in control of the service they are receiving during their stay. The managers who are aware of this trend have introduced the smart hotel room as a new product to serve the needs of this trend (Royal-hospitality, 2016). As a striking example for instance, all rooms at the Wynn Las Vegas Hotel are smartly designed using high-tech applications. Customers have the chance to control the room’s amenities and available services by verbal commands. Some of these applications are turning on the light, turning off the curtains, turning on the television, and lowering the