Chapter 4
Technological Advancement and Mechanization of the Hotel Industry

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ABSTRACT

In this era of technological advancement, when everyone is utilizing technology in some manner, especially when the pandemic hit the world, everyone has now accepted technology in their vicinity. This chapter broadly classifies the robots into two different groups (i.e., industrial robots and service robots). The hospitality industry, being the focus of this chapter, is primarily known for its services to guests; thus, service robots remain the focus of this chapter as they are related to rendering services to people. This chapter tries to make the readers understand the basic metrics that are essential for developing a robot for the sole purpose of providing services to people.

INTRODUCTION

The hospitality industry is broadly divided into two major operational areas: accommodation services and food services. The earlier one deals with the lodging services like rooms and encompasses the front office and housekeeping services

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of a hotel, and the latter deals with the basic needs of the human which is food, its preparation and service and includes food production and food and beverage service departments of a hotel. A variety of tasks are done in these core areas of a hotel that is laborious in nature and shows the potential for the inclusion of technology in the industry (Ivanov et al., 2019). Hotels and restaurants have come up as a progressive segment for robotics as it offers the robot manufacturers to offer robots to perform a wide variety of tasks related to guest services (Ivanov et al.2017).

Before directly jumping into the introduction and utilization of robotics in the hotel and restaurant sector, it is imperative to understand the meaning of both. Murphy et al. (2017), Yu (2018), Ivanov et al. (2017) and Berezina et al. (2019) have classified robots into two broad groups: industrial robots and service robots. Industrial robots are defined as automatic machines that can be utilized for different purposes either by being static or mobile. These robots can be programmed to perform different functions without being physically changed (IFR, n.d., International Federation of robotics). Service robots, on the contrary, are designed to perform tasks that are human-specific and must not include industrial applications (IFR, n.d., International Federation of Robotics).

Haideggar et al. (2013) and Kuo et al. (2017) describe robots as an automatic machine that is primarily made of two components i.e. "hardware and functionality". Hardware as usual has been referred to as the tangible part of the machine that includes appearance and other physical parts that need to be included to make the robot, however, the functionality is described two folded. Intrinsic functionality, which comprises the software installed in the robot and extrinsic functionality is described as the way the robot interacts with its surroundings which may include interacting with humans and other machines. The amalgamation of intrinsic and extrinsic functionality may prove to be the key to the inception of robotics in the hospitality sector.

Now the question arises, how can machines be intelligent? Professor John McCarthy, who founded the field of artificial intelligence, defined it as the science of making machines intelligent using computer programming that make the machines understand humans (McCarth, 2007). When we talk about technological advancements then artificial intelligence and robotics run simultaneously (Bhaumik, 2018; Russell and Norvig, 2016).

The concept of robotics in the hotel and restaurant sector is easily imaginable however for the manufacturers it requires careful implementation as it would mean a matter of interaction with humans and the robots need to be prepared for that (Weiss et al., 2019). In order to develop effective robotics for the hospitality industry, the researchers have been working on certain metrics that would be necessary for the implementation of robotics in any sector where there will be a need for robots to interact with people.