Chapter 3
Digital Transformation and Strategic Management of Frontline Services With Robotic Technologies

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ABSTRACT

Robots and artificial intelligence have been touted as vehicles for generating operational efficiency and cost savings for a business enterprise. Specifically, automated, digitalized frontline services have the potential to streamline an enterprise's service efficiency, alleviate burdens from its human employees, and enhances its relationships with the customers. Besides these cost and functional benefits, this chapter posits that robotic services can garner customers' preferences and satisfaction, that is, there are situations in which robotic services are not only a cost-saving option, but they are even preferred by an enterprise's customers. Specifically, two important drivers—social distancing and utilitarian expectations of services—can lead to customers' choosing robots over humans. This chapter concludes that deploying and managing digital and automation technologies, such as service robots, in frontline services can not only transform an enterprise's operations but also enhance its customer management and service expectations.

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INTRODUCTION

Digital platforms have transformed how an enterprise provides its products and services to its customers, who in turn, engage with the enterprise by interacting with its platforms before, during, or after their purchases. Some of these technological transformations include social media and online review systems (e.g., Dong et al., 2019; Kim et al., 2016), mobile technologies (e.g., Wang, 2020; Kaplan & Haenlein, 2019; Wang et al., 2018; Wang et al., 2016; Kim et al., 2015; Wang et al., 2015), digital advertising (e.g., Humphreys et al., 2020; Ghose & Yang, 2009), and sharing economies (e.g., Cheng, 2016; Matzler, et al., 2015), to name a few. These types of technologies have become prevalent in today's digital landscape. Managing relationships between an enterprise and its customers has fundamentally changed, from traditional, human-to-human contacts, to digital, human-to-machine interactions. No longer is human presence a requirement, as these types of interactive technologies provide enterprises with the capabilities of managing their customer relationships digitally or virtually. That is, when a customer uses these digital platforms, an enterprise can provide the requested services and information without any physical contact between its employees and the customer.

In recent years, however, digital technologies have started to go beyond just the virtual arena. Combining both digital and mechanical capabilities through technological innovations and algorithmic programming, technologies driven by artificial intelligence (A.I.) and robotics are capable of smart, physical, and real-time interactions. In particular, frontline services have become a testing ground for A.I. and robotic technologies. For instance, in the hospitality industry, both A.I. and mechanical capabilities are necessary to deliver room services. Thus, forward-looking hotels are beginning to integrate robots as part of their enterprise operations (Ivanov, Webster, and Berezina 2017). A.I. and robotics are increasingly present in areas such as "home, health care, hotels, and restaurants," and "social robots such as Pepper are used to replace human greeters to welcome customers in customer-facing services" (Rust and Huang 2018). However, despite the increasing prevalence of robotic services, whether and how they are accepted or used by customers remains underexplored. Indeed, most enterprises justify their adoptions of robotic services as a way to minimize operational costs (e.g., Romer et al., 2005; Decker et al., 2017; Wirtz et al., 2018). Given the growing prevalence of interactive technologies and A.I.-driven platforms, enterprises of today's digital age need to understand the contexts under which they can implement A.I. frontline services without compromising their perceived service quality and customers' satisfaction.

Thus, the purpose of this chapter is to explore whether transforming a company into an A.I.-enabled enterprise creates customer-oriented benefits in addition to operational efficiency. Referring to marketing theory related to customer satisfaction, customer-employee reciprocity, digital engagement behavior, and service expectations, as well as social theory on social distancing and social anxiety, this chapter investigates the situations in which customers use or even prefer robotic over human services. Using hospitality as the market context, it presents both original research and the subsequent managerial insights pertaining to customers' service choice and an enterprise's automation management and digital strategies.

The objectives of this chapter are as follows. One, it investigates the situations under which A.I. and robotic services are chosen by customers. Specifically, it provides empirical evidence that shows the important influences of social distancing and customers' utilitarian expectations. Two, it describes how these types of customer-centric, digitally interactive platforms and service robots can facilitate enterprises in a global crisis, such as the COVID-19 pandemic, a topical event at the time of this chapter's publishing. Lastly, it proposes a future outlook on A.I. and robotic services and digital innovations pertaining to marketing and customer relationship management.