# Chapter 2
# Industry 5.0, Digital Society, and Consumer 5.0

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## ABSTRACT

*Emerging technologies have transformed different industrial eras. Recent Industry 5.0 has created various innovative technologies, including big data, artificial intelligence (AI), the internet of things (IoT), virtual reality, cloud computing, and cobots. Industry 5.0 encompasses three core values: human centricity, resilience, and sustainability. Industry 5.0 has various enabling technologies supporting the industrial transformation, including digital twins, cobots, mass customisation, and hyper-personalisation. Digital transformation has affected all areas, including business organisations with all functions and marketing. Marketers have created different and innovative strategies using technological supports stemming from Industrial and societal revolutions. Industry 5.0 proposes a new marketing paradigm with mass customisation, and in this process, a new type of "super-empowered customer" or "consumer 5.0" has been created.*

## INTRODUCTION

Technological advancements have continued since Industry 1.0 or the first Industrial Revolution. The starting point of the Industrial development process prior to Industry 5.0 was the Industry 1.0 era in the 1870s. Then assembly lines with electrical energy and mass production were the symbols of Industry 2.0. The Industry 3.0 era started in the 1970s with transistors and microprocessors, and the main actors of this era were electronics and Information Technologies that integrated automation into production lines. Thus, the industry 4.0 era has been related to some technological innovations, namely the Internet of Things (IoT), cloud computing, and Artificial Intelligence (AI), and in this process, the real-time interface of the virtual world and physical world has been possible (Mourtzis, 2016; ElMaraghy et al., 2021). These developments have improved efficiency and product and service quality (Rüßmann et al., 2015). Industry 4.0 has been driven technologically, conceptualising the recent rapid change of technology and emerging new industries with changing social processes and patterns.

The pillar technologies of Industry 4.0 focused on the technological developments in production and network areas (i.e., digitalisation and digitisation) through industrial efficiency and flexibility over worker welfare and industrial sustainability (Xu et al., 2021). Consequently, the industrial transformation, utilising the current technological opportunities for the benefit of humankind, including social factors, was aimed. Developed countries, including the European Union countries and the USA, followed the leadership of Japan towards creating Industry 5.0 in a more human-focused manner. The new Industry 5.0 era has also been extended to Society 5.0. It is said that Industry 5.0 is a dynamic technological development process. Hence, Industry 5.0, followed by Society 5.0, has been under construction. Industry 5.0 has been updating the previous versions of Industrial Revolutions by bringing new dimensions (Verma et al., 2022, p.69160). The general understanding of Industry 5.0 has been different from previous industrial revolution eras, proposed that Industry 5.0 as a social and technological phenomenon has transformed old-style profit-based and consumption-driven business models into regenerative, resilient, sustainable, and circular value-creating models (Ghobakhloo et al., 2022, p.718).

In this chapter, the Industry 5.0 era will be reviewed following the Industry 4.0 paradigm, and the connection to Society 5.0 will be made through literature. This chapter focuses on the changing marketing paradigm and its relationship with Industry 5.0 and Society 5.0. Specifically, the new consumer, consumer 5.0, and prosumer profiles created by emerging technologies and applications were analysed through the last divisions of the chapter.

## BACKGROUND: INDUSTRY 5.0

The evolving technologies have transformed different industrial eras, and the incremental process has been accelerated with transistors and microprocessors as Industry 3.0. Computer and communications technologies made it happen more quickly with the automation process as Industry 4.0. Thus, Industry 4.0 is well-known for innovative technologies, including Big Data, artificial intelligence, augmented and virtual realities, cloud computing, adaptive robotics, additive manufacturing, and the Internet of Things (Ustundag & Cevikcan, 2017; Frank et al., 2019; Krishnan, 2021). Also, the organisations of Industry 4.0 are flexible and make their decisions based on data. Industry 5.0 drives the future technology for the next generations that are designed by efficient and intelligent machines (Adel, 2022). The post-industrial society in the 1980s focused on the organisation of information and knowledge, guiding innovation and change, and acting as a social control agent that has been transformed with digitalisation (Mourtzis et al., 2022). The information society has been one of the results of the Industrial Revolution.

The idea of the information society is built on a capitalist system; the modern knowledge society is based on technological transformation and innovations to process data and create new knowledge. Thus, the real World and Cyberspace real world have been increasingly integrated, and further research should focus on finding possible collaborative relationships (Mourtzis, 2018, p.197). Industry 4.0 has shifted from a massive automation approach to a customer-driven paradigm. This transformation process has been related to virtual and extended reality integration, artificial intelligence-based supply chains, twin designs collaborative robots, and digital machinery prototyping (Lu et al., 2020). Although the Industry 4.0 paradigm has yet to be scattered worldwide, technological pioneers and many business and technology investors have been trying to reach Industry 5.0 (Breque et al., 2021).

Industry 5.0 focused on creating a close interaction of the process with cobots (coordinated robots) and also tried to link communication between the supply chain, the factory, the end-user, and transporta-

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