Chapter 17
Digital Transformation and Its Challenges in the Hospitality Industry in Malaysia:
Moving Forward Into Industry Revolution 4.0

Sree Kala Nair
Taylor's University, Malaysia

ABSTRACT

Digital transformation and technology development in Industry Revolution (IR) 4.0 are here to stay. The automation, digitalization, robotizing, and a tsunami of innovations that make up IR 4.0 are making their presence stronger as days go by. Newer technologies, like AI, Big Data, the Internet of Things (IoT), and machine-based algorithms, have given the world various choices of high-speed connectivity through online bookings, online shopping, chats, blogs, and virtual realities. AI and technologies have infused digital transformation and continued to dramatically alter the hospitality industry. This qualitative paper aims to explore what type of digitalization has been incorporated and the challenges faced aftermath. The interview results from eight hospitality managers reveal that all hotels except one have incorporated newer technologies mildly aligned with IR 4.0 within their hotels. All the hotels face trials related to technology, namely budgets, rapid upgrading of digitalization, and insufficient technical employees to oversee the administration of these systems.

INTRODUCTION

The rapidly evolving global digital lifestyle and technologies have been emphasized across industries, including the hospitality and tourism industry (Ivanov et al., 2020). This has affected one's lifestyle and relationship with others and business phases of the industry (Osei et al., 2020; Liao et al., 2017; Buhalis & Amaranggana, 2015). The Fourth Industrial Revolution (IR 4.0) is the centerpiece of conversations in the World Economic Forum (WEF) in ASEAN in Kuala Lumpur, 2016, Phnom Penh, 2017, and Hanoi, 2018 (MyGovernment, 2019) and in academic literature (Osei et al. 2020; Liao et al. 2017; Lu, 2017).

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The hospitality and tourism industry is one of the earliest that embraces technologies associated with the previous revolution for making travel and lodging experiences safer and more convenient (Osei et al., 2020). It is becoming clearer that the current and future survival of the industry depends on the adoption of these automated technologies (Ivanov et al., 2020, Morrone, et al., 2021).

The industrial revolution concept started in late 18th century and has been referred as the First Industrial Revolution (IR 1.0) and it lasted till early 19th century whereby this is the beginning of the shift from agricultural industry to mass production industry with the implementation of machines (Mokyr, 2020). With the new innovations operated by steam engines and waterpower, the outcome of production and manufacturing had revolutionized the business industry with efficiencies and heightened productivity. Due to these new technologies, there have been drastic changes in the industrial processes which brought about production of manufactured goods on a larger scale for commercial reasons (Rinalducci, 2023). Hence, the change from home-based economy to bigger mass production using newfound machines had been referred to as Industrial Revolution. Subsequently, these industrial revolutions evolved spanning from the late 19th century to the current era bringing in different types of new technologies and advancements in innovations. In the IR 2.0, (late 19th century to 20th century) the developments had been seen with the introduction of electricity, steel production and chemical processes which made mass production and manufacturing jobs more productive using assembly lines, human skill training with lower cost (Bessen, 2021). In this era, prominent innovations were the telephones, telegraphs enhancing greater communication and more efficient transportations like the automobile industry. Continuing, IR 3.0, which began in late 20th century, is seen as the start of digital technology with launch of computers and Information Technology into the industries with basic automation and improved data processing (Das & Pan, 2022). With these new innovations using computers and data, communication and economic activities strived pushing the boarders to more discoveries of internet and into intense globalization.

Moving forward, the Fourth IR adding on the third wave ‘s digital advancement explored more integration with the Internet of Things (IoT), Artificial Intelligence (AI), Cyber-physical systems, Cloud Computing, Big Data analysis (Schwab, 2016). The digital development is bigger and profound with advanced innovations with smart systems and complex fusion incorporations that can be revolutionized into manufacturing, production, business, medicine, transportation, and the personal lives of each individual’s interactions in real life (Marr, 2021). With the implementation of these high-tech digitalization and AI, the efficient operational functions, compliant production and management of business have enhanced with optimum resource utilization (Edward, 2023). Referring to Das and Pan (2022), the IR has continued to evolve with robotization and human interaction, and humanized robots, quantum computing and better big data analytics (IR.6.0).

Within the hospitality and tourism industry, the key technological components of the IR 4.0 have been significantly influenced for setting up smart tourism destinations (Buhalis & Amaranggana, 2014) and smart systems (Wang et al., 2016), supplying organizations and consumers with more relevant information, greater mobility, and better decision support, and encouraging more enjoyable experiences (Gretzel et al., 2015), meeting competitors demands and improving financial performance (Morrone et al., 2021). These include Cyber-Physical systems (CPS), the Internet of Things (IoT), Cloud Computing, Big Data, Artificial Intelligence (AI), and Advanced Robotics (Osei et al., 2020), Augmented and Virtual Reality, System integration, Human Ergonomics or Bio-Mechanics, Li-Fi, and Computer Vision (Das & Pan 2022) as well as digital solutions such as self-service kiosks, contactless payments, digital menus and online booking systems (Gupta, 2023). The IR 4.0 allows hotels to plan future innovations but as the system keeps updating, the business models for traditional operations also keep changing and evolving