

# Chapter 13

## Disruptions of the Fourth Industrial Revolution: Implication for Work–Life Balance Strategies

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### ABSTRACT

*The Fourth Industrial Revolution has resulted in the disruption of the world of work whereby technological innovation such as artificial intelligence (AI) and robotics. These disruptions may be creative in that as some jobs are lost due to the development of artificial intelligence, new ones are created. This chapter explored the impact of disruptive technological innovations on the future of work. The skill gaps brought about by the emergence of the Fourth Industrial Revolution was also explored in this chapter.*

### INTRODUCTION

Scholars have predicted that the Fourth Industrial Revolution (4IR) will result in the disruptions of the status quo, whereby organisations systematically replace human capital in their day-to-day operations with the use of artificial intelligence (Peters, 2017; Rubery, 2019). In other words, 4IR is regarded as a process that will bring about disruptions in the world of work. These disruptions may be creative in that as some jobs are lost due to the development of artificial intelligence, new ones are created. However, how new jobs will be created, and the skill set that will be required for the new jobs, have not been clearly defined.

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The fundamental characteristics of the 4IR are innovations such as artificial intelligence (AI), robotics, nanotechnology, 3D printing, big data and cloud computing, internet of things (IoT), autonomous vehicles, genetics and machine learning. It is no gainsaying that the nature of work is being altered as a result of the emerging Industry 4.0, as it is sometimes referred to. To successfully embrace the 4IR, many firms will need to support the technological transformation with training and development of the workforce to fill the emerging skills gap (Romero, Stahre, Wuest, Noran, Bernus, Fast-Berglund & Gorecky, 2016).

The emergence of the 4IR implies that workers can have access to their office activities from remote locations, which enables them to carry out job functions from any part of the world. The advancement in technology has completely changed the way people work, thereby resulting in a shift in the ability of individuals to achieve a balance between work and family. As suggested by Ras, Wild, Stahl and Baudet, (2017, p.430) the “roles of the workforce are changing from being production-centric to being knowledge and data driven, reacting to the change in demand in the associated workplaces.”

## **DISRUPTIVE INNOVATION IN THE FOURTH INDUSTRIAL REVOLUTION**

The concept of disruptive innovation was developed by Clayton Christensen to explain the development in technology, invention and ideas which defy conventional knowledge (Meyer, 2010). The concept of disruption is also used in the business arena to refer to a situation whereby the development or improvement in existing product satisfies the mainstream market (Christensen, Raynor & McDonald, 2015; Meyer, 2010). Taking a cue from Christensen et al. (2015) and Danneels (2004), disruption in the 4IR refers to a process of technological transformation, which operates through a specific mechanism and has a specific consequence. The 4IR is presumed to enhance global standard of living resulting in the improvement in the quality of life of people globally (Schwab, 2016). However, as the 4IR continues to birth various technological innovations which make life worth living, Daneels (2004) suggests that the revolution in technology could also widen inequality and disrupt global labour markets.

The disruptive technologies typically demonstrate a rapid change in capabilities in terms of performance relative to alternative approaches (Manyika, Chui, Bughin, Dobbs, Bisson & Marrs, 2013). Manyika et al. (2013) further argue that an economically viable disruptive technology must have a far-reaching impact on organisations, products, services and consumers’ shopping experiences. The disruption of the 4IR is a technological innovation that brings about changes in the way businesses are conducted (Smith, 2019). Various businesses, in the bid to not be left out of the 4IR buzz, are incorporating new technological innovations to stay competitive and enhance profitability. Therefore, the disruptions brought about by the 4IR involve innovations such as e-commerce, autonomous vehicles, 3D printing, quantum computing, augmented reality, nanotechnology, blockchain and many others.

Disruption is not only limited to the 4IR. Disruption in the 4IR has also been reported in the global health sector. A study conducted by PricewaterhouseCoopers (PwC) revealed that consumers are willing to have human doctors replaced with AI and robotics because these are perceived to be more accurate and accessible (Brown, 2018). The study by PwC is an indication of the transformation of global health care and the readiness of the people to embrace AI as the new normal for their health care needs. Kaplan (2017) linked the disruption in the health care sector to two sources, which include government formulating policies to reshape the big picture business model, and grassroots startups that employ technology to challenge the status quo. The global health care crisis can be a thing of the past if disruptive technologies can thrive through the formulation of favourable policies. This may be achieved by allowing

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