Chapter 79
Human Capital Management in the Fourth Industrial Revolution

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ABSTRACT

This chapter identifies the drivers and challenges of the fourth industrial revolution. The fourth industrial revolution consists of artificial intelligence, big data, robotics, and many others technological innovations. The recent transformation in the global environment is affecting the way businesses are conducted, managed, and the way governments and societies are run. Today, business analysts are faced with the challenge of managing both human and digital workforce effectively without making any stakeholder in the business environment worse off. Hence, human capital management in the fourth industrial revolution involves effective development and deployment of human resources, artificial intelligence, and robotics to achieve organisational goals and objectives. It is expected that the principles underlying human capital management—planning, staffing, development, compensation, and investment in digital workforce—will become more intense and complex.

INTRODUCTION

Klaus Schwab, the Founder and Chairman of the World Economic Forum and the International Organization for Public-Private Cooperation, states that throughout history, there have been four industrial revolutions, with the fourth being the present. Schwab (2016) describes the Industrial revolution as the appearance of "new technologies and novel ways of perceiving the world which triggers a profound change in economic and social structures". The First Industrial Revolution was characterized by steam power, while the Second Industrial Revolution is referred to as the age of science and mass production.

The Third Industrial Revolution was marked by the digital revolution, and now we are living in the Fourth Industrial Revolution of dramatic technological expansion and social change (Trailhead, 2019).

The objective of this chapter is to create an awareness of new technology revolution and outline the essential practices for managers and Human Resources practitioners about the changes that are brought about by technological advancements, as these changes require constant adaptations and adjustments. Human capital is key to the success of every business, and its effective management is a shared responsibility between the human resources department as well as line management.

Since human capital is a source of competitive advantage, its effective management becomes a crucial function to the organization, and this task seems to be becoming more complex in this 4IR whose technology is having significant consequences on our daily lives. At the work place for instance, the actions and behaviors of human capital (ordinary employees* and managers) is influenced by technology in terms of information exchange and performing daily duties for both sets of human capital for the organizational success, hence its adaptation to new realities becomes imperative.

Human capital is regarded as the job-relevant knowledge, skills, abilities, energy, commitment and capacity to develop and innovate, possessed by people in an organization (Nel, & De Beer, 2014). Barnes (2008) considers human resources as one of the transforming resources that form part of the input resources in the transformation process that constitutes any operation.

Human resources should develop a can-do attitude and provide a company with the much needed competitive advantage if they are properly managed. In his book; *"Competitive advantage through people and the human equation: Building profits by putting people first",* Professor Jeffrey Pfeffer of Stanford University emphasizes the above argument when he states that the distinction between top-performing companies from their competitors, lies in the way they treat their human resources (Erasmus, Strydom & Rudansky-Kloppers, 2016).

HUMAN CAPITAL MANAGEMENT

Human Capital Management (HCM) is a comprehensive set of practices for recruiting, managing, developing and optimizing the human resources of an organization (Rouse, 2019). By this definition, it is depicted that management has to adopt an approach to human resources management that perceives employees as assets that can be invested in and managed in order to effect maximum profit for the success of the organization.

Swanepoel, Erasmus, Schenk and Tshilongamulenzhe (2014) had a similar perspective in defining Human Capital Management (HCM) from a business-based perspective and pointed out that "*it is a philosophy of people management based on the belief that human capitals are uniquely important to sustained business success. An organization gains competitive advantage by using its people effectively, drawing on their expertise and ingenuity to meet clearly defined objectives. Human Capital Management (HCM) is aimed at recruiting capable, flexible and committed people, managing and rewarding their performance and developing key competencies".*

This task of managing human capital encompasses a number of functions, starting from bringing people into the organization, then train, develop and retain them. Employees need to be fully integrated into the socio-cultural environment of the organization, though these main tasks seem to be costing management's time, they are expected to perform even harder with the 4th Industrial Revolution.

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