Chapter 4
Re-Shaping Business Strategy in the Era of Digitization

Deniz Palalar Alkan
https://orcid.org/0000-0002-2204-7024
Yeditepe University, Turkey

ABSTRACT

In the era of digitization terms such artificial intelligence (AI), internet of things (IoT) and related concepts are frequently used to describe a phenomenon that will eventually connect all things to digital networks that will lead to digital transformation of existing business and how they formulate strategies. One of the reasons behind such a paradigm shift is due to the demands of hyper-competition companies face in the global marketplace. Changing nature of the competitive landscape forces companies to re-think their strategy and align existing structures to achieve agility, flexibility, and a sustainable competitive advantage. Thus, companies need to re-think and conceptualize their overall strategies including the means to achieve sustainable competitive advantage. The trends that are shaping the Industry 4.0 will shape the way companies formulate strategies, create collaboration, and convergence of all the actors in the ecosystem to achieve agility, flexibility, and maximize efficiency.

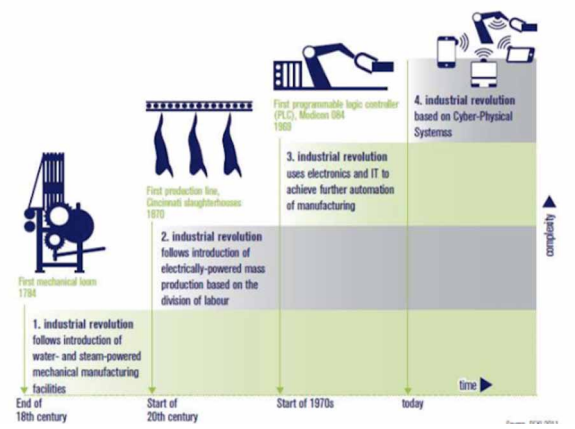
INTRODUCTION

As Davenport and Mahidhar (2018) indicate, the widespread usage of AI and related technologies rapidly change the way of thinking of the existing perspective on the business strategy formulation. The anticipated future of business world unprecedently evolving rapidly around processing extensive data. The circumstances led a new paradigm shift, also referred to as the fourth industrial revolution, era of digitization, in which companies face challenges never experienced before.

Concepts such as artificial intelligence, internet of things, big data and cloud, and many more are transforming the existing resources and capabilities that help companies achieving its' sustainable and competitive strategy. Changing customer expectations, products that are enabled by data, a new form of horizontal integration and operation models that is suitable to the digital world are few challenges of the digitization era. According to a recent survey conducted by Forbes (2018), approximately 700 execu-

DOI: 10.4018/978-1-7998-1125-1.ch004

Figure 1. The four ındustrial revolutions (Kagermann et al., 2013)



tives and 60 percent of the enterprises currently utilizing artificial technology enabled technologies to transform or expand their current business processes. Moreover, 63 percent of the companies already have built strong relationships with the existing customers as a result of their sufficient investment in the necessary technologies and reform their existing capabilities.

Smoothing operational flow including monitoring the performance of existing product lines and predicting required maintenance, forecasting consumer purchasing behavior with analytic systems such as machine learning and natural language processing algorithms namely are few benefits of adoption of AI-related technologies. Additionally, the creation of a new organizational ecosystem, achieving agility, flexibility, and greater efficiency are the perks of technologies of the fourth industrial revolution.

The objectives of this chapter start with defining paradigm shifts occurred in industrial revolutions throughout history. The chapter then will depict the current technological advancements that shape the modern business context and how it shapes business strategy accordingly.

BACKGROUND

Historical Perspective on Industrial Revolutions

The industrial revolution, a term firstly coined by British historian Arnold Toynbee to describe Britain's economic development between the years of 1760 to 1840. The term represents a change from an agricultural and handicraft economy to an economy that is dominated by industry (Landes, 2003). The industrial revolution, in modern society, has been used by various historians to describe periods of technological shifts that have a high impact on society. Even though there is an uncertainty pertaining a consensus on the beginning and the ending of each industrial revolution in this study we will define the shifts parallel to the definition by German Research Center for Artificial Intelligence that is depicted by Kagermann et al. (2013).

The diagram represents each industrial revolution. Each industrial revolutions are systematic by nature; however, it is hard to ascertain the underlying cause, effect and even parts of each phenomenon. The first industrial revolution refers to the period when the substitution of steam power to human and