

Chapter 13

Incorporating Industry 4.0 in Corporate Strategy

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ABSTRACT

Knowledge tells us that increase in productivity decreases margins in a competitive market and increases margins in a growing market. Not much is known about Industry 4.0 and its position within the corporate strategy and its possible impact on corporate performance. This chapter discusses the position of Industry 4.0 within the corporate strategy and how it may impact corporate performance. The main points include that corporates have to reflect on their core resources, leadership, and knowledge portfolio to take advantage of the Industry 4.0 platform. The corporates engaging in cost and volume strategies and those engaging in fast new product development strategies may benefit greatly with Industry 4.0. The services of Industry 4.0 may be outsourced but with added risks. Finally, the increased productivity with Industry 4.0 under constraint market growth may lead to the potential risk of market failure and large-scale layoffs.

INTRODUCTION

The primary mission of any corporation is to maximize profitability on behalf of its shareholders (Friedman, 2009) and to provide the best value to its stakeholders (Freeman, 1984). The development of technologies such as the big data and data analysis, IoT, artificial intelligence (AI), flexible robotics, 3D printing, augmented reality, 3D holographic scanning smarter sensors, greater miniaturization, cloud computing, customer feedback and Customer management software (CMS), location detection

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technologies such as radio-frequency identification (RFID), natural language programming, and changing global social-political environments are all driving human productivity toward a new industrial revolution (Herter & Ovtcharova, 2016; Reinhard, Jesper, & Stefan, 2016). These new technologies are consequently increasing the productivity of the corporations and changing the market equilibrium. The more these technologies evolve and are accepted by the industry, consequently, the industrial productivity shall proportionately increase. However, as the productivity of the corporation increases, it may or may not proportionately increase the performance and profitability.

Contrary to popular understanding, any impulsive investment in technology may increase the corporate debt and, consequently, decrease the corporate performance. Technology adoption and subsequent productivity change may also distort the market equilibrium, which, will force the competitors to engage in similar cost/volume strategies, lowering the overall margins per unit of production (Porter, 1979) for the whole industry. With these possible consequences in mind, it is important to logically weigh where in the value chain would the Industry 4.0 platform technology increase the value for the corporation and how these technologies would contribute to the competitiveness in the long run.

In the background of the evolving Industry 4.0 technological environments, this chapter provides a framework on how the corporations can increase their performance by reflecting on the role of Industry 4.0 on the overall corporate strategy. While most of the literature on Industry 4.0 is on automation (Mrugalska & Wyrwicka, 2017), productivity, benefits, and business models (Man & Strandhagen, 2017), this chapter tries to create a dialogue between academics of the Industry 4.0 and those who study the corporate strategy and corporate performance. A clearer understanding of Industry 4.0 and its position in corporate strategy will help us in understanding better how to develop business models and strategize the “may or buy” decision on Industry 4.0 technology.

The chapter is structured in the following way: First, it briefly reviews Industry 4.0. Next, this is followed by an assessment of corporate strategy and strategy landscape. Finally, the chapter discusses the position of Industry 4.0 in corporate strategy landscape and how and where it brings value to corporate performance. The chapter presents eleven propositions that give strategy-level perspectives on Industry 4.0.

LITERATURE REVIEW

The motivation of this chapter is to provide a slightly different perspective on Industry 4.0 where the authors contextualize it in the corporate strategy. Most of the scholarships around Industry 4.0 are on the disruptive increase in productivity, automation, new market alpha, and industry digitalization, but the research rarely makes any conversation on corporate strategy. It is in this context that this chapter adds value.

A BRIEF OVERVIEW OF INDUSTRY 4.0

Industrial revolutions have always been accompanied with a disruptive increase in productivity. The increase in productivity has also increased wages and, subsequently, the quality of life of the citizens. The evolution of Industry 4.0 is incremental, yet its effect will have a disruptive impact on corporate performance, productivity and overall markets and industries. One can understand it better when studying all the different stages of industrial revolutions (Figure 1).

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