Chapter 11
Siemens' Value-Driver Tree in Digitalization

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ABSTRACT

This chapter is a descriptive and explicative case study about value creation at Siemens in an uncertain and in a certain environment. Siemens has implemented economic value-added-based management since 1998. The empirical data analysis highlights value creation at Siemens at the beginning of the innovation lifecycle, when the environment is uncertain, and at the end of the innovation lifecycle, when contracts are signed, and the environment becomes predictable. Innovation is first placed in open networks, in which start-ups are essential, to which venture capital is allocated using business models. This is the ideation stage of the product lifecycle, when competitive advantage, the essence of value creation in both theory and the Siemens example, is created. Innovation matures, and Siemens closes contracts with customers about existing customer offerings. These contracts are managed as projects and funded with equity and debt. This is the stage when sufficient data exists to plan economic value added, the focus of Siemens' corporate governance.

INTRODUCTION

This paper illustrates how Siemens reconciles Economic Value Added with digitalization in a simple coherent approach that is tied to several other chapters from the same author. The purpose of this chapter is to explore, analyze and then synthesize the key value drivers and related decisions in Siemens' digitalization strategy, in the context of a world reference case (Siemens) in Economic Value Added centered management and the business context of digital transformation and disruption. The chapter is a descriptive case study. The literature review shows mainstream literature in digital transformation and managing value. The referenced sources in digital transformation refer to the works of consultants in digitalization. A second literature review is performed about value based management and comprises mainstream literature. The topic – strategy is extensive and an exhaustive literature review is too lengthy.

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The empirical data analysis is an extensive study from sources such as annual reports, presentation, chapters in Siemens magazines, other Siemens website sources. Alhough the paper resides on an incomparably broader reference list, only main sources are cited therein. The paper shows how Siemens reconciles New Economy tools such as digitalization, business eco-systems, open innovation, intangible assets, business models, venture capital with mainframe value indicator Economic Value Added. Siemens' digitalization strategy is a framework for both New Economy and classical tools in strategic management. This paper is conducted on one of the most proeminent value based management practitioners worldwide, Siemens and may serve as example to other companies, academics. The paper finds that Siemens' key value drivers are core technology, business technology, customer industry know-how and the customer value they create, measured as key performance indicators or return on customer investment. This value driver tree shows how Siemens' digital offerings are created across all organizational systems and decisions.

BACKGROUND

The Industrial Economy is transforming in the Knowledge Economy in several progressive stages. Digital technology has inflicted several waves of fast and high-scale change to the Industrial Economy (IBM Institute for Value Analysis, 2011; IDC, 2017a). These changes may be represented as the decades of the Knowledge Economy (IBM Institute for Business Value Analysis, 2011): in the 1990s, the emergence of the Knowledge Economy, with digital products and infrastructure; in the 2000s, digital distribution and web strategy; since 2010, digital transformation of business models.

Digital technology, created by digitization, may be defined as the IDC's third platform. The third platform comprises cloud, big data analytics, social business, mobility and technology accelerators which consist of robotics, natural interfaces, 3D printing, Internet of Things, cognitive systems, next generation security (IDC, 2017b). Digital technology may bear different names and classifications. For exemple, digitalization technology in manufacturing is called Industrie 4.0 or the Industrial Internet and comprises big data and analytics, autonomous robots, simulation, vertical and horizontal integration, Industrial Internet of Things, cyber security, cloud, additive manufacturing, augmented reality (Boston Consulting Group, 2015). Digitalization technology transforms individual industries (World Economic Forum, 2019).

Digitalization is defined (CapGemeni, 2013; Gartner, 2019; The Global Center for Business Transformation, 2019; IBM Institute for Business Value Analysis, 2011; IDC, 2017a) as the use of digital technologies to change a business model and provide value-creating opportunities or improve performance quantifiably.

According to IBM (2011), digital transformation is the pervasive degree of economic impact digital technology has on functions, industries, society. IDC (2017a) describes digital transformation as the use of digital technologies in ways that were never anticipated. Innovations driven by digital technologies are expected to bring about unprecedented business transformation, representing the biggest industry shakeout since the Industrial Revolution. According to Accenture (2019), digital transformation turns every business into a digital business. Companies face the digital imperative to harness the power of digital technologies to become more effective, innovative and disruptive. Cisco (2019) defines digital transformation as the application of technology to build new business models, processes, software, and systems that results in more profitable revenue, greater competitive advantage, and higher efficiency. According to IScoop (2019), digital transformation is the profound transformation of business and organizational activities, processes, competencies and models to fully leverage the changes and opportunities of a mix of digital technologies