Chapter 13
The Siemens Digitalization Strategy in a Value-Based Management Framework

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ABSTRACT

The digital economy is growing at unprecedented speed and scale. Digital technologies generate the digital transformation of everything – organizations, industries, society. Digital technologies and digital business models disrupt industries in a digital vortex to a different degree by industry. In the new business context, value creation changes from the classical net present value of discounted cash flow or economic value added. Changes are given mostly by uncertainty. Reconciling classical value with digitalization becomes a research topic – the topic of this chapter. The chapter is a case study on Siemens, a Harvard Business Review case in digitalization, and one of the most important value-based management practitioners in the world, in the view of the economic value added model and in the view of journals indexed in Web of Science. The Siemens case is used to explore how economic value added and digitalization can work together and finds that they do in different stages that follow the logic of the innovation lifecycle.

INTRODUCTION

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.

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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 and their accelerating impact across society in a strategic and prioritized way, with present and future shifts in mind. The Global Center for Digital Business Transformation (2019) identifies and defines digital business transformation as a journey to adopt and deploy digital technologies and business models to improve performance quantifiably. Digital transformation (CapGemeni, 2013) is the use of technology to radically improve performance or reach of enterprises – via change customer relationships, internal processes, and value propositions, the blocks of digital transformation. These blocks of digital transformation may be used to assess digital maturity. The emergence of the New Economy at all stages has brought volatility, uncertainty, complexity and ambiguity (Berinto, 2014a, 2014b; Bennet & Lemoine, 2014).

Digital disruption (Capgemeni, 2015, 2016; Casadesus-Masanell & Ricart, 2011; Girotra & Netessine, 2014; Grossman, 2016; Kavadias, Ladas, & Loch, 2016; The Global Center for Digital Business Transformation, 2015; Ovans, 2015; Westerman, Bonnet & McAfee, 2014) occurs when digital technology (IDC, 2017b) replace incumbents' business models in industries with new business models. Digital disruption, especially the shift from pipelines to platforms, impacts all industries in a digital vortex (Blank, 2013; Bonchek & Choudary, 2013; Girotra & Netessine, 2014; Grossman, 2016; The Global Center for Digital Business Transformation, 2015; Van Alstyne, Parker, & Choudary, 2016; Westerman, Bonnet, & McAfee, 2014). According to the Global Center for Digital Business Transformation DBT (2019) digital disruption is the effect of digital technologies and business models on a company's current value proposition, and its resulting market position. According to DBT, the digital transformation will impact all industries in a digital vortex. Whereas, in the Industrial Economy, product lifecycles are long