Chapter 2
Productivity in Digital Transformation

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ABSTRACT

The chapter presents the differences between the concepts of digitalization and digital transformation. The pioneers of digital transformation in the historical process and their use in different sectors are explained with examples. The relationship between digital transformation and productivity is discussed, and the enablers that allow this relationship are explained in detail. Turkey's digital transformation process shared by explaining the vision of public and private sectors. It is also explained that SMEs can do in digital transformation process in order to gain competitive advantage.

INTRODUCTION

Digital transformation (DT) can be seen as an emerging topic as well as the discussion of its enablers and associated implementation benefits. In fact, it is argued that the integration of technological enablers, such as big data and associated analytics, cloud computing, sensor technology, internet economy, electronic commerce, artificial intelligence, internet of things, smartphones, 3D printing, chatbots, augmented reality, cyber security, advanced robotics systems, nanotechnology, digital supply chain, social media, automation and etc. which all is intensely used in many fields of economic and social life with business practice can provide significant organizational competitive advantage. The main purpose of DT is to redesign the organizational business through the introduction of digital technologies, achieving benefits such as productivity improvements, cost reductions and innovation. Digital transformation

is not only affecting manufacturing industry but also other sectors of economy, such as health and education. A roentgen can be viewed in a short time by another doctor in another country and patient can be quickly informed. Students are able to choose courses from other universities because of distance education, to get an education regarding their interests, to have a fast access to information. Day by day, Individuals and companies have been adopting technology with a "how can I be more productive" approach, manufacturing and yield are aimed to be increased by means of advanced technologies.

DIGITIZATION AND DIGITAL TRANSFORMATION

"Digitization" and "digitalization" are two conceptual terms that are closely associated and often used interchangeably in a broad range of literature. According to Ernst & Young (2011) Digitization means the conversion of analogue information to digital (computer-readable) information. Digitization makes physical products programmable, addressable, sensible, communicable, memorable, traceable and associable [e.g. books, clothing, home appliances, music]. To give some simple examples: transforming a record of an analogue audio track into a digital copy, turning physically located stores into an online store. Gartner explains digitization as the time of using digital technologies in order to change business model and to provide new income and value producing oppurtunities. According to this, digitization is a transition process to digital operation. Transforming and automatising of manufacturing processes under digital technologies can be put forward as examples (Mahmood, 2019). Digitization especially through the pervasiveness of smartphones, cloud connectivity, the internet of things, 3-D printing, and other such related developments has further compelled managers to focus on ecosystems not just as a means for improving efficiency, but also as a path-way for growth (Niden & Spriggs, 2016). Digitization contributes to growth prospects, profitability and competitive capacities of companies by providing productivity growth in successful applications.

Digitalization is the use of digital technologies to change a business model and provide new revenue and value-producing opportunities. It is is more about business operations than either social interactions or business models. Digitalization is "The digitalization of these four dimensions of human experience [time-space-artifact-actor] forms the basis of experiential computing". Tilson et al (2010) defined digitalization as a sociotechnical process of applying digitizing techniques to broader social and institutional contexts that render digital technologies infrastructural [e.g. Alibaba Group, Alphabet Inc., Amazon.com, Apple Inc., Facebook Inc., Microsoft Corp., NetEase Inc., Paycom Software Inc., Tesla Inc., Uber] (Warner & Wager, 2019). Digitalization also transforms the organization and operational structure of

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