

ASSESSING THE IMPACT OF DIGITALIZATION ON OPERATIONAL CAPABILITIES

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ABSTRACT

In traditional management thinking operational capabilities require to be based on valuable resources that have only limited substitutability and imitability. With the digitalization new company networks emerge and the individual network partners' operational capabilities are incorporated into the network and difficult to protect. How to capture the impact of digitalization on the requirements for these operational capabilities and how to explain the sustainable advantageousness of these capabilities is analyzed and empirically examined in a sample of 200 industrial companies. The analysis shows that more openness for value co-creation in networks is needed that can be economically sustainable within the network.

Keywords: Digitalization, operational capabilities, VRIN, environmental dynamics, transaction costs, ecosystems

1. INTRODUCTION

For creating competitive advantage, companies need operational capabilities (Helfat/Winter 2011 and similarly Teece 2014) which require to be based on valuable resources that have only limited substitutability and imitability (Barney 1991, Teece/Lee 2017) and can be adjusted by learning (Agyris/Schön, 1978) to the environmental dynamics (Reed/DeFilippi 1990, Sanchez/Heene 1997, Karna et al. 2015). The Digitalization is a technological change that not only enables and drives improvement and innovation in processes, products and services, and business models (e.g. Li et al. 2018) but also influences these operational capabilities (Lenka et al. 2016, Nasiri et al. 2020) and consequently the requirements for them are influenced as well.

For example, because of digitalization companies are enabled to collaborate in innovative networks via platforms (e.g. Hagiu/Wright 2015), i.e. in ecosystems (Adner 2017, also Jacobides et al. 2018, Hannah/Eisenhardt 2018). On the one hand, therefore, there is a better exchange between network partners (e.g. Spulber 2018) and a common value-creating resource position can be created (Nalebuff/Brandenburger 1997, Feldmann 2002); on the other, however, the individual network partners' operational capabilities are incorporated into the network (Sheng et al. 2013) and are virtually impossible to protect (limited substitutability and imitability is at risk, Karhu et al. 2018).

Extant literature has discussed required resources and capabilities as enablers of digitalization (Cha et al. 2015, Li et al. 2018), focuses on sharing capabilities on digital platforms (Mueller et al. 2010) or the emergence of capabilities in Ecosystems (Ceccagnoli et al. 2012). But prior studies have not taken the conflicting effects of digitalization on operational capabilities into account, especially when it comes to their advantageousness. Therefore, this article attempts to capture the impact of digitalization on the requirements for these capabilities and to explain the sustainable competitive advantages and thus also the advantageousness of these capabilities.

An initial literature review will cover digitalization and its economic effects as well as operational capabilities and the requirements for them (Section 2). On this basis, hypotheses on the effects of digitalization on operational capabilities will be set up in Section 3, starting with effects on the requirements for operational capabilities and, deduced from these, effects on the advantageousness of