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14. How Top Managers Utilize Dynamic Capabilities to Digitally Transform Their Business: Evidence from European Firms

Research-In-Progress

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Abstract

Digital Transformation remains one of the most important topics on the agenda of researchers and practitioners alike. The intelligent orchestration of existing organizational structures and new emerging digital technologies is vital to stay competitive in an increasingly digitalized world. Since a successful digital transformation needs specific competencies to adapt to rapidly changing environments through digitalization, the development and use of so-called dynamic capabilities plays an important role in the process of digital transformation. Whereas existing research primarily focuses on dynamic capabilities for digital transformation at an organizational level, this study sheds light on the use of dynamic capabilities at an individual level. By conducting a qualitative interview study with top managers of several firms across different traditional industries, this study aims to analyze the role of dynamic managerial capabilities in digital transformations and investigates how top managers utilize these capabilities to digitally transform their business. The preliminary findings of this research in progress paper indicate that dynamic managerial capabilities play an important role at the individual level of top managers and that managers use different ways of utilizing sensing, seizing, and transforming capabilities to orchestrate digital transformation. In that regard, this study provides various important implications for practitioners and researchers alike.

Keywords: Digital Transformation, Dynamic Managerial Capabilities, Top Managers, Qualitative Research.

1. Introduction

The rise of new digital technologies, such as smart connected devices and digital platforms, is incrementally affecting societies and businesses. To keep pace in an increasingly digitalized world, firms across industries and geographical regions need to undergo a substantial process of transformational change (Vial, 2019; Hanelt et al., 2021). Described as “*a process that aims to improve an entity by triggering significant changes to its properties through combinations of information, computing, communication, and connectivity technologies*” (Vial, 2019, p. 121), digital transformation remains one of the most relevant issues for researchers and practitioners alike. Since a successful digital transformation requires specific competencies to adapt to rapidly changing environments (through digitalization), the development and use of so-called dynamic capabilities play an important role in digital transformations (e.g., Konlechner et al., 2018; Warner & Wäger, 2019; Soluk & Kammerlander, 2021).

Dynamic capabilities can be defined as “*the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments*” (Teece et al., 1997, p. 953). In information systems research, this theoretical construct is mainly used as a theoretical lens to find possibilities on how firms can best master conditions in turbulent circumstances, such as digital transformations (e.g., Konlechner et al., 2018; North et al., 2020). Nevertheless, research at the intersection of dynamic capabilities and digital transformation is still at an early stage. For example, Warner & Wäger (2019) investigate factors that influence the building and maintaining of dynamic capabilities for digital transformations. Vartiainen (2020) explores the influence of digital transformation on the development of dynamic capabilities. Other research examines the way how dynamic capabilities trigger and enable digital transformations (Soluk & Kammerlander, 2020; Marx et al., 2021; Matarazzo et al., 2021; Ellström et al., 2022) or how digital transformations can be managed with the use of specific dynamic capabilities (e.g., Iden & Bygstad, 2021).

All existing research at the intersection of dynamic capabilities and digital transformation have in common that they focus on dynamic capabilities at an organization level. However, another important focus-level of dynamic capabilities is the individual manager that uses these capabilities at an individual level (Adner & Helfat, 2003; Teece, 2012). These so-called dynamic managerial capabilities, which can be seen as an analogy to the more general dynamic capabilities at an organizational level, are defined as “*the capabilities with which managers build, integrate, and reconfigure organizational resources and competences*” (Adner & Helfat, 2003, p. 1020). Since existing research agrees that managers play an overriding role in the digital transformation of firms (e.g., Heavin & Power, 2018), further investigations on the role of dynamic managerial capabilities in the context of digital transformation are needed. To address this important research gap, the following research question was formulated: *How do top managers utilize dynamic capabilities to enable and drive digital transformation?*

To answer this research question, an in-depth interview study with top managers (mostly chief executive officers (CEOs)) of several incumbent firms active in various different traditional industries was conducted. By analyzing the role of dynamic managerial capabilities in digital transformations and explaining how top managers utilize these capabilities to digitally transform their business, the preliminary findings of this study extend the current knowledge at the intersection of (managerial) dynamic capabilities and digital transformation significantly.

The remainder of this work is structured as follows. Starting with the theoretical and conceptual foundations, the main concepts and theories of interest are introduced and brought together. Afterward, the methodological foundation of the conducted study will be demonstrated. This is followed by a presentation of first initial findings of the study. Finally, a conclusion including a discussion and a presentation of the next steps will complete this work.

2. Theoretical and Conceptual Foundations

Dynamic capabilities are derived from the Resource-Based-View and can be defined as “*the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments*” (Teece et al., 1997, p. 516). Over the last years, the body of literature concerning dynamic capabilities has increased significantly, especially in the strategic management and information systems literature (Steininger et al., 2022). Dynamic capabilities are a rather crude framework that explains a complicated issue; namely how a business can spot opportunities and execute them accordingly (Teece, 2007). They involve higher-level activities that enable a business to direct its ordinary activities toward high-payoff endeavors. To achieve this, firms must manage their resources to react to rapidly changing business environments (Teece, 2007; Teece, 2012; Teece, 2018). Dynamic

capabilities are undergirded by micro-foundations, which include distinct skills, processes, procedures, organizational structures, decision rules and disciplines (Teece, 2007).

A more recent definition of dynamic capabilities states that these capabilities “*can be disaggregated into the capacity (1) to sense and shape opportunities and threats, (2) to seize opportunities, and (3) to maintain competitiveness through enhancing, combining, protecting, and, when necessary, reconfiguring the business enterprise’s intangible and tangible assets*” (Teece, 2007, p. 1319). Consequently, dynamic capabilities can be divided into (1) sensing capabilities, (2) seizing capabilities, and (3) transforming capabilities (often referred to as reconfiguring capabilities) (Teece et al., 1997; Teece, 2007; Teece, 2012). Sensing new opportunities can be seen as a scanning, creation, learning, and interpretive activity, where organizations, for example, must explore new technologies and markets (Teece, 2007; Teece, 2012). Once new opportunities are sensed, they must be addressed through new products, processes, or services (Teece, 2007; Teece, 2012). This includes maintaining and improving technological competencies and dismissing established practices (Teece, 2007; Teece, 2012). Finally, transforming capabilities are needed to maintain an evolutionary fitness. This includes changing routines, which can be costly and lead to heightened anxiety within the organization unless the culture is shaped to accept high levels of internal change (Teece, 2007). In order to enable this, the redesign of routines should be crafted in a way that old and new practices can complement. The ability to recombine and reconfigure assets and organizational structures as markets and technologies change is a key to sustained profitable growth (Teece, 2007). The ability to sense, seize, and transform is multi-faceted, and firms will not necessarily be strong across all types of dynamic capabilities (Teece 2018). However, a firm with strong dynamic capabilities will be able to continuously innovate itself and respond to rapidly changing market environments.

Recently, research started discussing dynamic capabilities in the context of digital transformation (e.g., Warner & Wäger, 2019; Marx et al., 2021; Matarazzo et al., 2021). Existing research found that dynamic capabilities are an enabling factor for successful digital transformations by enabling firms to create a competitive advantage in quickly changing environments (e.g., Soto Setzke, 2020; Marx et al., 2021). Further, strong dynamic capabilities have the potential to shape a firm’s proficiency at business model design by identifying unmet customer needs and specifying technologies that will address them (Teece, 2018). Interestingly, research at the intersection of dynamic capabilities and digital transformation only focuses on dynamic capabilities at the organizational level. However, existing research indicates that dynamic capabilities at the individual level of managers (i.e., dynamic managerial capabilities) can also play an important role in transformation projects of firms. For example, Basile & Faraci (2015) show that dynamic managerial capabilities serve as a basic requisite for organizational transformation processes. Further, dynamic managerial capabilities positively influence the development of organizational ambidexterity which is vital for information technology-driven organizational transformations (Gregory et al., 2014; Dahlmann & Grosvold, 2018; Nguyen, 2018). By approaching this research gap, this study aims at expanding existing research on dynamic (managerial) capabilities in the context of digital transformation and, thereby, pursues the claim of other researchers who have made calls for additional research to further investigate dynamic capabilities, for instance, in the context of business model innovation (Teece, 2018) and in the context of digital transformation (Vial, 2019).

3. Methodology

To analyze how top managers utilize dynamic capabilities to enable and drive the digital transformation of their business, an exploratory in-depth interview study was conducted (Myers & Newman, 2007). The advantage of such studies is that they directly focus on the topic under investigation. Further,

interview data provides more sensitive information than publicly available documents. Figure 1 gives an initial overview of the methodological approach.

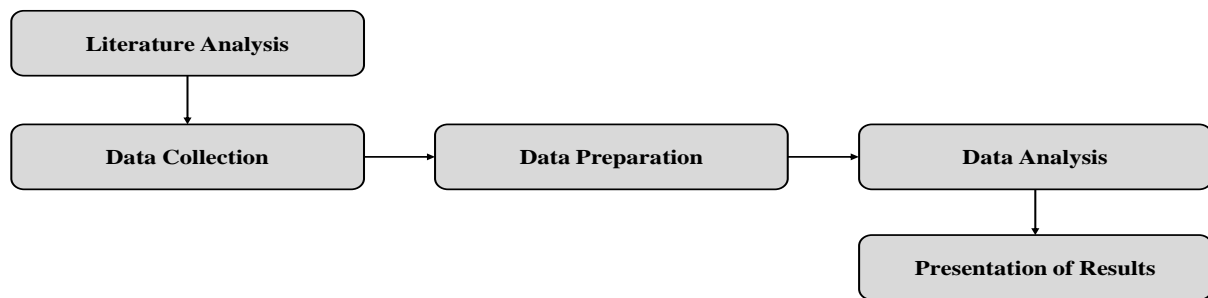


Figure 1: Overview of Methodological Approach

Inspired by the extant literature on digital transformation (e.g., Vial, 2019; Hanelt et al., 2020) and dynamic capabilities (e.g., Teece et al., 1997; Teece 2007; Teece, 2012), a semi-structured interview guideline was developed. This guideline aimed at nudging the interview partners to reflect on the digital transformation processes within their firms, whether they have specific dynamic managerial capabilities at all, and how they utilize these capabilities to enable and drive digital transformation in their firms.

#	Job Title	Industry	Age (years)	Revenue (EUR)	Length (min.)
1	CEO		> 20	> 1 mn.	50
2	CEO		> 45	> 10 mn.	40
3	CEO	Automotive	> 35	> 5 mn.	60
4	CEO		> 40	> 5 mn.	50
5	Head of IT		> 50	> 100 mn.	80
6	CEO		> 120	> 1 mn.	80
7	CEO		> 25	> 1 mn.	60
8	Transformation Officer	Manufacturing	> 30	> 100 mn.	45
9	CEO		> 100	>1,000 mn.	60
10	Strategy Officer		> 70	> 600 mn.	70
11	CEO		> 40	> 500 mn.	70
12	CEO	Industrial	> 60	> 1 mn.	65
13	CEO	Services	> 20	> 25 mn.	50
14	CEO		> 20	> 1 mn.	90
15	Head of Digitalization	Pharma & Life	> 20	> 10 mn.	55
16	CEO	Science	> 20	> 1 mn.	55
17	CEO	Consumer &	> 35	> 5 mn.	55
18	CEO	Retail	> 75	> 5 mn.	65
19	CFO		> 200	> 100 mn.	80

Table 1: Overview of Conducted Interviews

As illustrated in Table 1, the sample of this study comprises interviews with 19 top managers. Thereby, a wide bandwidth of different viewpoints of top managers from different firms and industries is included. All interviewees are active as a chief executive officer (CEO) or in a similar position in the top management team with a minimum of five years experience in their current position. The case firms are all pre-digital firms (i.e., established before the digital revolution with a business model which is not originally based on the use of digital technologies). Further, all case firms are active in a traditional industry (i.e., an industrial-age industry). Finally, all case firms have a minimum revenue of one million euros. Hence, this study does not only focus on large firms, but also considers small and medium-sized firms. This broad bandwidth of firms and industries allows making statements on a cross-firm and cross-industry level. All firms operate worldwide and have their headquarters in Europe (primarily in Germany).

The interviews were conducted either virtual or face-to-face. Each interview was transcribed and uploaded to the qualitative data analysis software MAXQDA. Within the scope of data analysis, a qualitative content analysis was conducted in a two-step approach as a mixture of deductive and inductive category development. The theory of dynamic capabilities served as the main theoretical framework for the data analysis. In a first step, the role of dynamic managerial capabilities in the digital transformation of the interviewees' firms was analyzed in a very general manner. To this end, the interview transcripts were analyzed with regard to statements referring to dynamic managerial capabilities. These statements were assigned to the specific dynamic capability (i.e., seizing, sensing, transforming capability). Consequently, the three specific dynamic capabilities served as main categories. The second step included analyzing how the specific dynamic capabilities are designed and how the interviewees utilize each capability in the context of digital transformation.

4. Preliminary Findings

An important finding of the qualitative content analysis is that all of the interviewed top managers have dynamic managerial capabilities and use them (either consciously or unconsciously) to enable and drive digital transformation. The initial findings additionally indicate a highly relevant role of dynamic managerial capabilities in the process of digital transformation. Further, the results show that all three specific types of dynamic managerial capabilities are of great importance for managers to enable and drive digital transformation. Table 2 illustrates the main characteristics of each capability. It gives a first impression on how top managers utilize dynamic managerial capabilities to enable and drive digital transformation.

Capabilities	Characteristics			
Managerial Sensing Capabilities	Engaging in open exchange with different parties	Actively tracking industry and market developments	Actively pursuing digital transformation-related self-education	Transferring relevant insights from private life to business
Managerial Seizing Capabilities	Formulating and selecting the right endeavors for digital transformation	Mobilizing resources to enable digital transformation		Providing the necessary work environment to build commitment and loyalty concerning digital transformation
Managerial Transforming Capabilities	Transforming mindset and culture towards developing new digital transformation-driven business model configurations		Providing open innovation and cross-collaboration to enable digital transformation	

Table 2: Overview of Dynamic Capability Utilization of Top Managers Towards Digital Transformation

Managerial Sensing Capabilities: The initial findings indicate that top managers utilize managerial sensing capabilities in four different ways to enable and drive digital transformation. All sensing capabilities are mainly about identifying opportunities for digital transformation. Managers ideally do not only focus on a single capability, but rather combine all four capabilities into their working routine. Engaging in open exchange with different parties, for example, means cross-hierarchical exchange with colleagues, intensive exchange with customers, and utilizing cooperation with academia. Actively tracking industry and market developments means tracking industry developments and tracking direct and indirect competitors. Actively pursuing self-education can be done by following the press, attending seminars, and teaching things autodidactically. Transferring relevant insights from private life to business means following trends within the private life and exchanging with befriended entrepreneurs and executives.

Managerial Seizing Capabilities: Once sensed, opportunities should be seized. In that regard, three different seizing capabilities could be identified. Formulating and selecting the right endeavors for digital transformation is about precisely assessing added value for the firm's business model, internally discussing opportunities among relevant stakeholders, and using work shops and agile methods to identify value. Mobilizing resources to enable digital transformation means creating task forces to pursue opportunities, utilizing internal and external expertise, and establishing idea generation and management processes. The necessary work environment can be provided by involving affected staff to provide solution input, reducing complexity in ideating processes, and reducing fear of staff.

Managerial Transforming Capabilities: Finally, two main activities how top managers utilize transforming capabilities in the process of digital transformation could be identified. First, top Managers need to transform mindset and culture towards enabling digital transformation. This is done by promoting the use of new methods (e.g., agile), embracing a culture of trial and error, and removing old and antiquated ways of thinking. Second, the provision of open innovation and cross-collaboration is done by embracing cross-collaboration within firms and balancing personal contact and increasing digitalization.

5. Conclusion and Next Steps

The initial findings of this research in progress paper show that top managers use a broad range of dynamic managerial capabilities to pursue the digital transformation of their firms. Further, the initial findings illustrate how specifically top managers utilize these capabilities. However, this study is not completed yet. The next step aims at diving deeper into the data to gain a better understanding how top managers utilize dynamic capabilities and to precisely link the interview data to the final results. Another goal is to analyze whether there exist different circumstances in which specific utilizations of dynamic capabilities are more appropriate than others. The final goal of this study is to derive a skillset for top managers that helps to understand which skills are needed to utilize dynamic managerial capabilities in order to enable and drive digital transformation.

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