MASTER'S THESIS

Enhancing Digital Platform Capability and Networking Capability with Dynamic Enterprise Architecture Capabilities

In the view of market and technological turbulence

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Award date:
2021

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Education:	Open Universiteit, faculty Management, Science & Technology Master Business Process Management & IT
Degree program:	The Open University of the Netherlands, Faculty of Management, Science & Technology Business Process Management & IT master's program
Course:	IM0602 BPMIT Graduation Assignment Preparation IM9806 Business Process Management and IT Graduation Assignment
Student:	Jordy Dijkman
Identification number:	
Date:	30-01-2021
Thesis supervisor	Rogier van de Wetering
Second reader	Ella Roubtsova
Third assessor	-
Version number:	50
Status:	Final version

Abstract

This study conceptualizes and defines enterprise architecture-based (EA) capabilities, following the dynamic capabilities view, which tries to explain how dynamic enterprise architecture capabilities (DEAC) enhance digital platform capabilities (DPC) and networking capability (NC). By synthesizing the reach and range of DEAC as a dynamic capability, this research builds on previous EA-based capability studies through three related but distinct capabilities: EA sensing, EA mobilizing, and EA transformation capabilities. Data is collected from 142 key respondents (enterprise architects, IT and business consultants, IT managers, and others) from 19 different industries in the Netherlands to test hypotheses associated with the research model. The findings show that when a firm possesses DEAC, DPC and NC are enhanced. Moreover, the findings indicate that DPC as NC contributes to higher organizational performance. However, market turbulence, in contrast to technological turbulence, influences DPC in obtaining or retaining organizational performance. The current research advances understandings of how DEAC can align business and IT to improve DPC and NC and create a competitive advantage.

Key terms

Dynamic enterprise architecture capabilities, networking capability, digital platform capability, market turbulence, technological turbulence

Summary

The trending digital platforms that are currently emerging (such as Alibaba - retail, Uber - delivery, Airbnb - guests, and Expedia - travel) are changing the existing conditions in several sectors. Decision-makers recognize the opportunities created by these new digital technologies, but to create effective digital platforms, a firm requires digital platform capabilities (DPC). To create sufficient DPC, a firm needs to align its business and IT with the help of enterprise architecture (EA). EA can be defined as the blueprint of the organization that details both the current and desirable future states of the organization. This study conceptualizes and defines EA-based capabilities, following the dynamic capabilities view that tries to explain how dynamic enterprise architecture capabilities (DEAC) enhance DPC and networking capability (NC; also known as social capital, external links, or personal networks). The term dynamic refers to the capacity to renew competences to achieve congruence with the changing business environment. The term capabilities emphasizes the key role of strategic management in appropriately adapting, integrating, and reconfiguring internal and external organizational skills resources and functional competencies to match the requirements of a changing environment. By synthesizing the reach and range of DEAC as a dynamic capability, this research builds on previous EA-based capability studies by means of three related but distinct strategic capabilities: EA sensing, EA mobilizing, and EA transformation capabilities.

This study empirically investigates whether, as claimed by the literature, DEAC enhance NC and DPC and whether they both lead to higher organizational performance (measured as: market share, customer satisfaction, profit, or business brand). This study also empirically investigates whether DPC enhance NC, and whether market and technological turbulence (MTT) influence DPC in obtaining or retaining organizational performance. The above propositions led to six hypotheses. To test the research model, the hypotheses were empirically validated with data collected from 142 key respondents (enterprise architects, IT and business consultants, IT managers, and others) from 19 different industries in the Netherlands. Of the companies in the dataset, 74% were older than 20 years, and 52% contained more than 3,000 employees. Most of the respondents were extremely proficient in their jobs as 59% had at least 20 years of working experience, thereby, enriching the reliability of the findings.

The findings indicate that when a firm possesses DEAC, and used strategically, these capabilities enhance DPC and NC. This enhancement is of added value as the findings indicate that increased NC (T-value = 2.633, P-value = 0.008) and DPC (T-value = 2.067, P-value = 0.039) both lead to higher organizational performances. DEAC enhance DPC by rendering the organization more adaptable and prepared for the future through its digital platforms (T-value = 8.346, P-value = 0.000). Similarly, DEAC enhance NC because organizations purposefully seek business relationships to retain or increase their organizational performance (T-value = 3.766, P-value = 0.000). Furthermore, DPC enhance NC as DPC improve communication through the participation of internal and external partners (T-value = 6.097, P-value = 0.000). Finally, DPC are negatively influenced by market turbulence (T-value = 2.326, P-value = 0.020). Based on the findings of this research, decision-makers should consider investing in DEAC and positioning them within the firm to utilize the EA sensing, EA seizing and EA transforming capabilities to their full potential to increase the ability to change. This study showed that DEAC result in competitive advantages, as the outcomes indicate that improving DPC and NC both result in higher organizational performance.

Appendix 4 of this research includes a comprehensive survey, grounded in theory, that can be used as an assessment tool by decision-makers to rate their current DEAC. It is also recommended that future researchers complement the results of this study by replicating this study for other countries and in other industries. This research also found that the finance and insurance industry only supported the relationship between DEAC and DPC (T-value = 5.773 , P-value = 0.000), and between DPC and NC (T-value = 6.482, P-value = 0.000). Therefore, it would be interesting to ascertain how each industry scores using the research model. Finally, this research is mostly focused on large and old companies; thus, it would be valuable to investigate how smaller companies and start-up companies are engaging in this topic, that is, the so-called small-and medium-sized enterprises.

Contents

1. Introduction

1.1. The capabilities needed for emerging digital platforms

Digital platforms (such as Alibaba - retail, Uber - delivery, Airbnb – guests, Fintech platforms - finance) are a trending topic and as such are challenging the fundamentals of organizational performance and transforming how firms build a competitive advantage (Kazan, et al., 2018; Parker, Marshall, & Choudary, 2016; Kenney, Rouvinen, Seppälä, & Zysman, 2019; Sebastian et al., 2017; Korhonen & Halén, 2017). The worldwide emergence of digital platforms is notable as the projected worldwide expenditure on IT in 2019 was $3.74 trillion (Gartner, 2019). Digital platforms offer technical elements, such as hardware or software devices, whose features may be extended through complementary modules along with a set of rules, standards, and organizational processes to coordinate third parties and adopters (de Reuver, Sørensen, & Basole, 2018; Subramaniam, Iyer, & Venkatraman, 2019). To create, maintain, or capture value using digital platforms, enhancing the digital platform capabilities (DPC) of a firm is essential as these will become competitive factors that determine the success or failure of a business model (Witschel, Döhla, Kaiser, Voigt, & Pfletschinger, 2019). To obtain value from DPC, a firm needs to align its business and IT with its enterprise architecture (EA; (Dang & Pekkola, 2015). EA is considered to be the blueprint for an organization that describes both the current and desirable future state of the firm's IS/IT[1] infrastructure, data, systems, and critical business processes and provides a roadmap to achieving this blueprint (Shanks, 2018). However, to quickly adapt to changes to the EA of a firm and build long-term competitive survival capabilities, a firm needs dynamic enterprise architecture capabilities (DEAC; Teece, 2007; Witschel, Döhla, Kaiser, Voigt, & Pfletschinger, 2019; Mikalefa, Krogstiea, & Pappa, 2019; van de Wetering, Kurnia, & Kotusev, 2020b). "These are an organization's ability to leverage its EA for asset sharing and to recomposing and renewal of organizational resources, together with guidance to proactively address rapidly changing internal and external business environments to achieve the organization's desirable state" (van de Wetering, 2019, p. 3).

Accordingly, the literature mentions the competitive advantages provided by DEAC and states that when a firm possesses and uses DEAC accordingly they can enable the organization to create and capture value with DPC. However, only a few studies offer empirical evidence for this competitive advantage (Helfat & Raubitschek, 2018; Xiao, Tian, & Mao, 2020). In addition, the literature states that DEAC enhance networking capability (NC; Abbas, Raza, Nurunnabi, Minai, & Bano, 2019; Battistella, De Toni, De Zan, & Pessot, 2017; Lütjen, Schultz, Tietze, & Urmetzer, 2019). The enhancement of DEAC creates added value as improved NC and DPC both lead to competitive advantages, resulting in higher organizational performances (Abbas, Raza, Nurunnabi, Minai, & Bano, 2019; Cisi, Devicienti, Manello, & Vannoni, 2020; Mu, Thomas, Peng, & Benedetto, 2017; Huanmei, Corral de Zubielqui, & O'Connor, 2015; Kazan, et al., 2018; Parker, Marshall, & Choudary, 2016; Witschel, Döhla, Kaiser, Voigt, & Pfletschinger, 2019). Moreover, possessing DPC should also lead to better NC (Cenamor, Parida, & Wincent, 2019; Pesce, Neirotti, & Paolucci, 2019). However, according to the literature, market and technological turbulence (MTT) challenges DPC in obtaining or retaining organizational performance (Karimi & Walter, 2015; Korhonen, Lapalme, McDavid, & Gill, 2016). Hence, the main purpose of this research is to gain more insight into whether having DEAC result in enhancing DPC and NC and identifying the value of DPC and NC on organizational

[1] Information systems (IS), Information technology (IT)

performance by empirically validating data from 142 key respondents in the Netherlands. This research also examines the relationship between DPC and NC and the moderating effect from MTT in obtaining organizational performance. Based on the aforementioned objectives, this research contributes to filling the gap in the literature previously mentioned.

1.2. The research topic

This study follows the EA-based capability scholarship that employs the dynamic capabilities view (DCV). The DCV provides a strong theoretical foundation and is accompanied by empirically-validated constructs and items. The DCV contends that firms that leverage EA with success are the ones that exploit the dynamic capabilities that infuse EA in the process of sensing strategic opportunities (and threats), mobilize resources accordingly and transform in line with strategic goals and business needs (Van de Wetering, 2019b). The DCV entails leveraging a firm's resources to create capabilities that support the organization to adapt to its dynamic environment (Teece D. J., 1997). By following the DCV, this study considers DEAC to be dynamic capabilities (DC) that help organizations to identify and implement new business and IT initiatives to ensure that the organization's assets and resources are aligned with the needs of the business (Van de Wetering, 2019b). By synthesizing the reach and range of DEAC as DC, this research builds on previous EA-based capability studies through three related but distinct capabilities: EA sensing, EA mobilizing, and EA transformation capabilities. An EA sensing capability highlights the role of EA in a firm's deliberate attitude toward sensing and identifying new business opportunities or potential threats and developing a greater reactive and proactive strength in the business domain (Shanks, 2018). An EA mobilizing capability refers to an organization's ability to use EA in the process of evaluating, prioritizing, and selecting potential solutions and mobilizing the firm's resources in line with a potential solution (Overby, 2006; Sambamurthy, 2003; Shanks, 2018). EA transforming capability can be regarded as the ability to use EA to successfully reconfigure business processes and the technology landscape to engage in resource recombinations and to adjust for and respond to unexpected changes (Drnevich, 2011; Mikalef, 2016; Pavlou, 2011; Shanks, 2018). The DC are needed to sense, seize, and transform possible business and IT opportunities and threats (Teece, 2007; Witschel, Döhla, Kaiser, Voigt, & Pfletschinger, 2019). DEAC distinguish themselves from the (ordinary) operational capabilities, which are the capabilities through which a firm makes its living in the short-term. DEAC focus on the renewal of existing organizational capabilities as a means of competitive survival in the long term. DEAC will dynamically extend, modify, change, and/or create operational capabilities (Mikalefa, Krogstiea, & Pappa, 2019; van de Wetering, Kurnia, & Kotusev, 2020b).

The DPC of a firm represent its ability to achieve platform integration "through the timely and idiosyncratic exchange of information with its partners" and its ability to reconfigure platform resources "through modular designs and standardized interfaces in applications and processes" (Cenamor, Parida, & Wincent, 2019, p. 5). The literature claims a valuable relationship exists between DPC and DEAC that can enable organizations to create and capture value, as the three strategic capabilities of DEAC, sensing, seizing, and transforming, helps in directing to design and redesign business models and make (innovative) products in a competitive environment (Helfat & Raubitschek, 2018). Nonetheless, only a few relevant studies offer empirical evidence of DEAC's interaction with DPC (Xiao, Tian, & Mao, 2020). Accordingly, researchers need to further conceptualize the DPC with DEAC with substance, precision, and depth (de Reuver, Sørensen, & Basole, 2018).

The NC (also known as social capital, external links, or personal networks) refers to the firm's ability to initiate, maintain, and utilize relationships with other players (Chen, Wang, & Zou, 2009, p. 6). According to the literature (business), network relationships are not static but dynamic because organizations rely on other entrepreneurs' entrepreneurial competencies to combat challenging environments (Abbas, Raza, Nurunnabi, Minai, & Bano, 2019).
Therefore, NC provides the resources necessary to reconfigure business models and adapt to a changing business environment (Battistella, De Toni, De Zan, & Pessot, 2017; Lütjen, Schultz, Tietze, & Urmetzer, 2019). Summarizing the literature, when an organization possesses DEAC, it enhances NC because people purposefully seek business relationships to retain or increase their organizational performances. Furthermore, the literature states that DPC enhances internal and external NC (Cenamor, Parida, & Wincent, 2019). The (possible) relation between DPC and NC is vital as a healthy NC will strengthen the strategic orientations and organizational performance of an organization (Mu, Thomas, Peng, & Benedetto, 2017).

To address the internal component of NC, DPC entail designing an integrative architecture that centralizes and formalizes information flows. To address the external NC component, DPC enable companies to improve their ability to communicate with external partners to better acquire and organize the structured information received from external partners (Cenamor, Parida, & Wincent, 2019). To summarize, DPC help organizations improve their NC.

In addition to analyzing NC, this study examines the market and technological turbulence (MTT) related to digital platforms. Technological turbulence refers to the degree to which technology changes over time within an industry in production, processes, and in the product itself, including new product technologies (Jaworski & Kohli, 1993) . Market turbulence refers to the continuous changes in customers' preferences and demands, price and cost structures, and the composition of the competitors (Calantone, Garcia, & Droge, 2003, p. 3). MTT is changing the market and is currently active in many industries through reshaping or creating new customer expectations requiring firms to obtain new revenue streams to survive (Karimi & Walter, 2015). For instance, the banking sector (like many other businesses) has experienced significant IT changes, as they are currently in competition with digital platforms known as FinTechs, which are financial technology businesses that offer swifter and cheaper loans than traditional banks (Sedaghatparast, 2019). Therefore, it is crucial for DPC, in terms of EA sensing, to explore markets, recognize technological potential, and obtain relevant information about competitors (Witschel, Döhla, Kaiser, Voigt, & Pfletschinger, 2019).

1.3. Problem statement

In the emerging field of digital platforms and the associated MTT, firms need to cope with this turbulence and take advantage of digital platforms. Quickly adapting to changes in the EA of a firm requires DEAC. Moreover, these capabilities appear to provide additional benefits as, according to the literature, they will enhance the NC and DPC, which result in higher organizational performances. Accordingly, the question of whether DEAC, as claimed by the literature, are the keys to success by making it easier to improve DPC and NC and, thus, creating competitive advantages in a turbulent environment is investigated.

1.4. Research objective

The objective of this research is to investigate whether DPC and NC lead to enhanced organizational performance. Moreover, this research investigates whether DPC lead to a better NC, followed by researching the role of DEAC concerning DPC and NC. Furthermore, this research examines MTT and whether this turbulence affects DPC in obtaining organizational performance. The above proposition leads to six hypotheses that ultimately answer the following research question (RQ).

RQ: How does DEAC relate to NC and DPC and leads an increased NC or DPC to competitive advantages, and how does MTT affect organizational performance?

1.5. Relevance

This research builds upon work by van de Wetering regarding DEAC. The literature currently claims that DEAC is enhancing DPC (Teece, David J, 2017; Helfat & Raubitschek, 2018). Nonetheless, only a few relevant studies offer empirical evidence of DEAC's interaction with DPC (Xiao, Tian, & Mao, 2020). Therefore, further research of the DPC concept with DEAC is required (de Reuver, Sørensen, & Basole, 2018). In addition, this research examines the relation between DEAC and NC because the literature states that DEAC leads to a better NC (Abbas, Raza, Nurunnabi, Minai, & Bano, 2019; Battistella, De Toni, De Zan, & Pessot, 2017; Lütjen, Schultz, Tietze, & Urmetzer, 2019). Likewise is the relation of DPC and NC on organizational performance researched as they both, according to the literature, contribute in higher organizational performance (Mu, Thomas, Peng, & Benedetto, 2017; Abbas, Raza, Nurunnabi, Minai, & Bano, 2019; Cisi, Devicienti, Manello, & Vannoni, 2020; Huanmei, Corral de Zubielqui, & O'Connor , 2015; Kazan, et al., 2018; Witschel, Döhla, Kaiser, Voigt, & Pfletschinger, 2019). Moreover, this study examines if DPC is enhancing NC (Cenamor, Parida, & Wincent, 2019; Pesce, Neirotti, & Paolucci, 2019). Finally, this research examines the MTT as, according to the literature, MTT affects DPC in retaining or improving organizational performance (Ross, Weill, & Robertson, 2006; Karimi & Walter, 2015; Korhonen, Lapalme, McDavid, & Gill, 2016). Based on the above propositions this study should provide valuable, empirically validated, results to the current body of knowledge.

1.6. Thesis overview

This work is structured as follows. Chapter 2 outlines the theoretical development of the research model. In addition, it further develops hypotheses that are associated with the model. Chapter 3 presents the methodology and illustrates how the quantitative analysis is conducted with smart partial least squares structural equation modeling (PLS-SEM) and Microsoft Excel to assess the research model. Chapter 4 presents the primary analysis results acquired from 19 different industries in the Netherlands from 142 vital stakeholders. Chapter 5 contains the discussion concerning whether DEAC do enhance DPC and NC and whether both of these capabilities contribute to obtaining improved organizational performances. This study also examines whether DPC lead to a better NC and whether MTT influences DPC in obtaining or retaining organizational performance. Finally, this study ends with a conclusion and recommendations.

2. Theoretical framework

2.1. Research approach

The researcher spent time planning a search strategy to avoid information overload and to answer the RQ(s). The research was not restricted to one online database but used a number of databases to ensure comprehensive coverage of the literature both geographically and through the types of journals (Saunders, Lewis, & Thornhill, 2019).

The full-text online academic databases of the Open University and Google Scholar were used. The primary database was that of the university library, and Google Scholar was used when the primary database was unable to find specific journals. One of the parameters was to search for peer-reviewed articles to ensure the academic quality of this research. Valued experts in the same working fields review these articles (Gelderman, 2016). Moreover, to keep the study as current as possible, most of the selected journal articles were not older than 12 months. In the next section, Table 1 provides an overview of the search methods.

2.2. Implementation

This research is based on the previous work of van de Wetering. Consequently, it was essential to understand the research field, which was achieved by reading the background journals (approximately 30 journals). This research also utilized a comprehensive summary (approximately 40 journals and one textbook) obtained during an EA course at the Open University (OU).

After reading the background journals, curiosity began to rise, and more journals were read to formulate an answer to the RQ. Backward snowballing led to reading 21 additional papers to ascertain more in-depth knowledge. The online libraries' suggestions were also helpful by providing tips, such as “similar items people read.” The usefulness of journals was determined based on the abstract and sometimes a scan of the paper's literature section. Ultimately, approximately 100 sources (journals, sections from books, and websites) were identified, of which 75 were used. Some of the journals were not relevant as they considered NC to be an operational capability instead of a DC.

	Queries/Journals	Source	Results	Used Articles
Building blocks method	Networking capability AND dynamic capability	OU Library	10.000	(Mu, Thomas, Peng, & Benedetto, 2017) *search: last three years*
	Networking capability AND dynamic capability AND digital platforms	OU Library	3.500	(Abbas, Raza, Nurunnabi, Minai, & Bano, 2019) ; (Pesce, Neirotti, & Paolucci, 2019) *search: last 12 months*
	digital platforms AND market turbulence AND technological turbulence AND organizational performance	OU Library	45	(Witschel, Döhla, Kaiser, Voigt, & Pfletschinger, 2019); (Korhonen & Halén, 2017) *search: last 12 months*
	market turbulence AND environmental turbulence	OU Library	11.660	(Calantone, Garcia, & Droge, 2003)
	Dynamic capability AND organizational performance		6.000	(Mikalefa, Krogstiea, & Pappa, 2019); (Lütjen, Schultz, Tietze, & Urmetzer, 2019) *search: last 12 months*
	Dynamic capability AND digital platform capability		5.000	(Xiao, Tian, & Mao, 2020) *search: last 12 months*
	(networking) AND (organizational performance)	OU Library	670	(Cisi, Devicienti, Manello, & Vannoni, 2020) *search: last 12 months*
Backward snowballing method	(Witschel, Döhla, Kaiser, Voigt, & Pfletschinger, 2019)		(Teece D. J., 2007) *found with Google Scholar*	
	(Xiao, Tian, & Mao, 2020)		(Karimi & Walter, 2015); (de Reuver, & Basole, 2018) found with Google Scholar	
	(Korhonen & Halén, 2017)		(Ross, Weill, & Robertson, 2006); (Korhonen, Lapalme, McDavid, & Gill, 2016) *found with Google Scholar*	
	(Helfat & Raubitschek, 2018)		(Parker, Marshall, & Choudary, 2016) *found with Google Scholar*	
	(Cenamor, Parida, & Wincent, 2019)		(Battistella, De Toni, De Zan, & Pessot, 2017); (Kazan, et al., 2018); (Subramaniam, Iyer, & Venkatraman, 2019) *found with Google Scholar*	
	(Karimi & Walter, 2015)		(Picard, 2009)	
	(Cisi, Devicienti, Manello, & V, 2020)		(Huanmei, Corral de Zubielqui, & O'Connor , 2015)	
Baseline journals	R. Van de Wetering		(Helfat & Raubitschek, 2018); (van de Wetering, 2019); (Saunders, Lewis, & Thornhill, 2019); (Cenamor, Parida, & Wincent, 2019); (Teece, David J, 2017); (IBM, 2020); (Smart PLS, 2020); (Chen, Wang, & Zou, 2009); (Jaworski & Kohli, 1993); (Hair, Ringle, Sarstedt, & Gudergan, 2017C); (Drnevich, 2011); (Fischer, 2010); (Kim, 2011); (Mikalef, 2016); (van Oosterhout, 2006); (Overby, 2006); (Pavlou, 2011); (Protogerou, 2012); (Shanks, 2018); (Sambamurthy, 2003); (Teece D. J., 1997); (Kock, 2015); (Van de Wetering, 2019b); (van de Wetering, 2020); (Pattij, van de Wetering, & Kusters, 2019); (van de Wetering, Kurnia, & Kotusev, 2020b)	
	(EA) course, Open University		(Sebastian, et al., 2017); (Sedaghatparast, 2019); (Gelderman, 2016); (Janssen, 2013); (Martin, 2016); (Stokking, 2016); (Open Universiteit, 2016)	

Table 1: Used search methods and articles

2.3. Theoretical ground and model development

2.3.1 Dynamic enterprise architecture capabilities to improve digital platform capabilities

The literature claims a relationship exists between DEAC and designing and maintaining digital platform-based ecosystems to create and capture value. As the three strategic capabilities of DEAC, sensing, seizing, and transforming, helps in directing to design and redesign business models and make (innovative) products in a competitive environment, DEAC will place digital platforms in a stronger position to address future challenges (Helfat & Raubitschek, 2018). Teece also mentioned the importance of DEAC because DPC entail designing a product to make it profitable and building an adaptable organization to deliver and grow with the digital platform (Teece, David J, 2017). Previous empirically validated research has already proved that DEAC result in a better business and IT alignment (van de Wetering, 2020). Similar research using the DCV of Pattij et al. (2019), in which enterprise architecture management (EAM) is conceptualized as a digital capability, also empirically validated that IT capabilities (consisting of hardware compatibility, software modularity, network connectivity, IT-business partnership, and IT skill adaptability) mediate the effect of EAM and organizational agility. In addition, Overby et al. (2006) and Pavlou et al. (2011) noted that the sensing capability of DEAC helps firms to recognize, interpret, and pursue new IT and technological innovations. Summarizing the literature, DEAC will enhance DPC, making organizations with digital platforms more adaptable and prepared for the future. Nonetheless, only a few relevant studies offer empirical evidence of the interaction of DC with DPC (Xiao, Tian, & Mao, 2020). This means that further research is required to conceptualize DPC with DEAC with the requisite meaning, precision, and depth (de Reuver, Sørensen, & Basole, 2018).

Accordingly, based on the above, the first hypothesis is as follows:
H1: DEAC will enhance DPC

2.3.2 Boosting networking capability with dynamic enterprise architecture capabilities

According to the literature, (business) networking relationships are not static but dynamic because organizations rely on other entrepreneurs' entrepreneurial competencies to combat challenging environments. Creating sustainable organizational performance is achieved by dynamically selecting better and more reliable business partners, structuring network relationships more efficiently, and acquiring new knowledge. NC makes the organization more dynamic, innovative, and competitive (Abbas, Raza, Nurunnabi, Minai, & Bano, 2019). NC provides the resources necessary to reconfigure business models and adapt to changing business environments (Battistella, De Toni, De Zan, & Pessot, 2017; Lütjen, Schultz, Tietze, & Urmetzer, 2019). Summarizing the literature, when an organization possesses DEAC, it enhances NC because people purposefully seek business relationships to retain or increase their organizational performances.

Based on the above, the second hypothesis can be stated as follows:
H2: DEAC enhance NC.

2.3.3 Networking leads to higher organizational performance

Networking relationships lead to an (innovative) sustainable organizational performance in a competitive environment, as firms achieve new knowledge from their business partners (Abbas, Raza, Nurunnabi, Minai, & Bano, 2019). A healthy NC will strengthen a firm's strategic orientations and organizational performance (Mu, Thomas, Peng, & Benedetto, 2017). Cisi et al. (2020) and Huanmei et al. (2015) confirmed the belief that networking is an important source of competitive advantage because it provides access to knowledge and resources at lower costs. The empirical findings of a representative longitudinal sample (2008-2014) of Italian companies proved that networking leads to higher organizational performance. The largest effects were measured for small- and medium-sized firms and firms that operated in turbulent markets (Cisi, Devicienti, Manello, & Vannoni, 2020). Summarizing the literature, when an organization possesses NC, its organizational performance is strengthened.

Based on the above, the third hypothesis is stated as follows:
H3: NC will positively affect organizational performance.

2.3.4 Boosting networking capability with digital platform capabilities

The literature states that DPC enhance internal and external NC. With regard to the internal component of NC, DPC entail designing an integrative architecture that centralizes and formalizes information flows. They facilitate communication and the coordination of resources, capabilities, activities, and goals. With regard to the external component, the platform approach enables firms to manage a changing network of partners supported by platform governance to handle communication and potential conflicts. In short, it allows companies to improve their ability to communicate with external partners in order to better acquire and organize structured information from those partners (Cenamor, Parida, & Wincent, 2019). The literature states that, in general, the creation of value for each participant in a platform occurs through positive networking effects. For example, digital platforms such as eBay, Apple, Google, and Facebook base their business models on interconnectivity and portability features. Their platforms connect producers and consumers from different contexts and with divergent interests (Pesce, Neirotti, & Paolucci, 2019). Summarizing the literature, DPC create communication possibilities for internal and external stakeholders that increase a firm's NC.

Based on the above, the fourth hypothesis can be stated as follows:
H4: DPC enhance NC

2.3.5 The effect of market and technological turbulence on digital platform capabilities

Market turbulence is the continuous changes in customers' preferences/demands, price/cost structures, and competitors' composition (Calantone, Garcia, & Droge, 2003, p. 3), and technological turbulence refers to the degree to which technology changes over time within an industry, in production and process, and in the product itself, including new product technologies (Jaworski & Kohli, 1993). According to the literature, MTT is related to digital platforms. MTT requires a shift in the reconceptualization of EA as it is no longer focused on process standardization and integration (Ross, Weill, & Robertson, 2006) but also on continuous adaptation to the changing business, information, social, and technological landscape (Korhonen, Lapalme, McDavid, & Gill, 2016).

Technological transformation is changing the market and is currently occurring in many industries through reshaping or creating new customer expectations requiring companies to obtain new revenue streams to survive. Consumer-serving industries such as the music (Spotify) or news industries (applications) are feeling the impact of technological transformation through the forces of mobility, social media, digitization, and resulting changes in customer (market) expectations. Many firms find it difficult to predict the market expectations as they, for instance, tend to believe that their new products and services will significantly alter the behavior of individuals and transform society. In reality, most of these products and services create faster, easier, and more flexible ways for consumers to do what they are already doing (for instance the digitalization of newspapers). It is essential to understand that no business is immune to MTT, as virtually all firms use digital technology in some form (Karimi & Walter, 2015; Picard, 2009). Summarizing the literature, the ever-changing MTT will challenge DPC to obtain or retain organizational performance.

Based on the above, the fifth hypothesis can be stated as follows:
H5A: Market turbulence will negatively affect the DPC in obtaining high organizational performance.

H5B: Technological turbulence will negatively affect the DPC in obtaining high organizational performance.

2.3.6 Digital platform capabilities to create competitive advantage

If a firm uses their DPC, they can create a competitive advantage and, thereby, higher organizational performance (Kazan, et al., 2018; Parker, Marshall, & Choudary, 2016). A firm's organizational performance is its market share, customer satisfaction, profit, business brand, image, and customer loyalty (Chen, Wang, & Zou, 2009). An example of DPC that lead to higher organizational performance is in the mobile payment platform sector. This sector creates a competitive advantage by being integrative in the existing business architecture and achieving direct, indirect (by cooperating with third parties), or open access (blockchain payment technologies) to pre-existing payment architectures to move value among the stakeholders within the network (Kazan, et al., 2018). Witschel has stated that digital platforms will become competitive factors that determine a business model's success or failure and, thus, its organizational performance (Witschel, Döhla, Kaiser, Voigt, & Pfletschinger, 2019). Summarizing the literature, DPC will lead to competitive advantages as digital platforms lead to the success or failure of a business model. Consequently, DPC will affect organizational performance.

Based on the above, the sixth hypothesis can be stated as follows:
H6: DPC will positively affect organizational performance.

The research model is shown in Figure 1 to conclude this chapter.

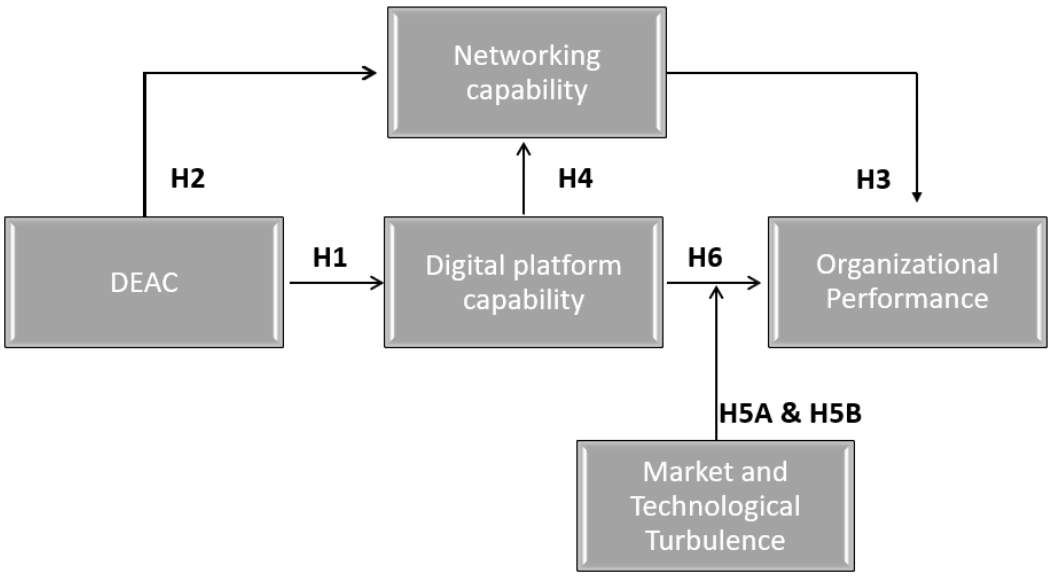

Figure 1: Research model

2.4. The objective of the following research

This research clarifies how firms can create a competitive advantage by implementing DEAC to retain or improve their organizational performance. Accordingly, it describes the role of DEAC concerning NC and DPC as the literature states that DEAC enhances both. Therefore, the relevance of DPC and NC on organizational performance is examined. In addition, the relation between DPC and NC is analyzed as the literature states that DPC improves NC. Finally, the research examines the role of MTT and whether it influences DPC and, thereby, organizational performance.

3. Methodology

3.1. Research method

This part of the research aims to establish a data collection plan; the data analysis, ensuring the validity and reliability of the measurements and results; and the ethical perspective of the research. Given the short research period and the scope of the topic, a full integrative literature review approach was not possible. Instead, the study is exploratory (forming theory and hypotheses to understand the RQ), with an integrative literature review approach. This research compares and uses representative peer-reviewed literature to generate new testing perspectives (Saunders, Lewis, & Thornhill, 2019B). In analyzing the results, this study also uses descriptive statistics to gain an accurate profile of the respondents' opinions concerning the RQ (Saunders, Lewis, & Thornhill, 2019F).

The research method is quantitative with a web questionnaire (LimeSurvey) completed by the crucial stakeholders (enterprise architects, business/IT consultants, CIOs, IT managers, business managers, and others) in several Dutch organizations. These stakeholders are familiar with the topic and should provide useful and reliable insights. The quantitative approach is essential as this research aims to collect as much data as possible (sampling) to test the hypotheses.

A qualitative study would not have been sufficient to answer the RQ as it would have obtained less data (only one case study). In addition, a qualitative study typically forms hypotheses rather than testing them (inductive or deductive research; Janssen, 2013). As one of its purposes is to formulate and test hypotheses, this research has a positivistic nature (Martin, 2016). It is also a cross-sectional study because the data collection took place at a specific moment in time: from 8 October until 8 December 2020 (Saunders, Lewis, & Thornhill, 2019C).

This research used a survey strategy because the literature states that this strategy is sufficient for exploratory research (Saunders, Lewis, & Thornhill, 2019G). However, the survey strategy has some weak points as only a limited number of questions can be asked and some of these may be the wrong questions. The survey is also dependent on the subjects' willingness to complete it, and it can also take a long time to receive the completed forms (Saunders, Lewis, & Thornhill, 2019G).

3.2. Data collection

3.2.1 Sample group

The data field was narrowed by creating a sample group, as a census (collecting and analyzing data from every possible individual) was not possible for the following reasons: it was practically not possible to survey the entire population, there were restraints on the budget, and only a short research time was available. This researcher collaborated with three other researchers, who jointly studied sub-aspects related to DEAC, to create a reliable sample group of at least 150 respondents. Self-selection and convenience sampling were applied to contact the respondents. Self-selection sampling was conducted by advertising on LinkedIn. Self-selection sampling has the advantage that (most) people will respond to the advertisement because of their strong feelings or opinions about the RQ (Saunders, Lewis, & Thornhill, 2019E). Convenience sampling was applied as not everyone is (very) active on social media and respondents from the researchers' professional network who were close at hand were invited to participate. However, the literature states that convenience sampling can be full of bias. Therefore, it was essential to have selection criteria in the survey to ensure reliability (Saunders, Lewis, & Thornhill, 2019E). The survey selection criteria were predicated on the company's age, the size of the company, and the respondent's current function. In addition, this research included a representative check question[2] at the end of the survey to check the respondent's reliability. The (16) respondents who answered “strongly disagree,” “disagree,” or “somewhat disagree” on a 7-point Likert scale were excluded from the dataset.

This research also checked the dataset for common method bias (CMB). CMB is a phenomenon that is caused by the measurement method and not by the network of causes and effects in the model being studied. For example, the instructions at the top of a question may influence the answers provided by different respondents in the same general direction, causing the indicators to share a certain amount of common variance. Another example is the social desirability bias that may be applied to answering some questions in the survey. To assess the CMB, we used the CMB procedure of Kock and Lynn (2012), who proposed a full collinearity test. They proposed the occurrence of a variance inflation factor (VIF) greater than 3.3 to be an indication of pathological collinearity and to also indicate that a model may be contaminated by CMB. Therefore, if all the VIFs resulting from a full collinearity test are equal to or lower than 3.3, the model can be considered free of CMB (Kock, 2015). Section 4.3.4 shows that this study is free of CMB as all the VIF values were below 3.3. Finally, pilot testing was applied to the survey to increase internal (content) validity and maximize the response rate (Saunders, Lewis, & Thornhill, 2019K). The pilot test participants clarified how long the survey took to complete and whether the instructions or questions were unclear or uncomfortable to answer. They also informed us whether there were any significant topic omissions and whether the layout was clear and attractive. The test group consisted of four experts; Table 3 in Appendix 1 shows the feedback and changes made in the final survey.

[2] Representative check-question: Were you able to fill in this survey with an adequate understanding of all the concepts and questions?

3.2.2 Measurements

Consistent with van de Wetering (2019), this study conceptualized DEAC as a reflective-formative type II second-order construct. The conceptualization of DEAC is based on the core notion of DC leading to the three strategic capabilities of DC: sensing, seizing, and transforming (Helfat & Raubitschek, 2018). The EA sensing capability consists of five items, referring to the role of EA in a firm's deliberate attitude toward sensing and identifying new business opportunities or potential threats and developing a greater reactive and proactive strength in the business domain. The construct items for EA sensing were adopted from either conceptual or empirically validated work (Mikalef, 2016; Pavlou, 2011; Shanks, 2018). The EA mobilizing capability consists of five items, referring to an organization's capability in using EA in the process of evaluating, prioritizing, and selecting potential solutions and mobilizing firm resources in line with a potential solution. The construct items for EA mobilizing were adopted from either conceptual or empirically validated work (Overby, 2006; Shanks, 2018; Sambamurthy, 2003). The EA transforming capability consists of six items, referring to the ability to use the EA to successfully reconfigure business processes and the technology landscape, to engage in resource recombinations, and to adjust for and respond to unexpected changes. The construct items for EA transforming were adopted from either conceptual or empirically validated work (Drnevich, 2011; Mikalef, 2016; Pavlou, 2011; Shanks, 2018; Fischer, 2010; Kim, 2011; Teece D. J., 1997; Protogerou, 2012; van Oosterhout, 2006).

This study conceptualized DPC in line with Cenamor et al. (2019) as a reflective-formative type II second-order construct consisting of two first-order reflective constructs. The first construct is platform integration and consists of four items, referring to the firm's ability to achieve platform integration "through the timely and idiosyncratic exchange of information with its partners." The second construct is platform reconfiguration and consists of four items. Platform reconfiguration refers to the firm's ability to reconfigure platform resources "through modular designs and standardized interfaces in applications and processes."

NC is conceptualized as a first-order reflective construct, in line with Chen et al. (2009), consisting of seven items, referring to the firm's ability to initiate, maintain, and utilize relationships with other players (Chen, Wang, & Zou, 2009, p. 6). Market turbulence is conceptualized as a first-order reflective construct consisting of four items and is characterized by continuous changes in customers' preferences and demands, price and cost structures, and the composition of the competitors (Calantone, Garcia, & Droge, 2003, p. 3). Technological turbulence is conceptualized as a first-order reflective construct consisting of four items. Technological turbulence refers to the degree to which technology changes over time within an industry in production, processes, and in the product itself, including new product technologies (Jaworski & Kohli, 1993). Organizational performance is conceptualized as a first-order reflective construct consisting of five items. Organizational performance is measured in line with Chen et al. (2009) by market share, customer satisfaction, profit, business brand and image, and customer loyalty (Chen, Wang, & Zou, 2009). Table 4 in Appendix 1 shows the complete list of the items including the statements mentioned in the survey. Appendix 4 contains the complete survey.

3.3. Data analysis

This research used the descriptive statistics function of Microsoft Excel to ascertain how the conducted survey data was distributed (size of the company, types of organizations, ages of the companies, level of the respondents' working experience). To estimate the measurement and structural models, this study used PLS-SEM, Version 3.3.2. PLS-SEM is a variable modeling method with an intuitive graphical user interface, and it is used to gain a deep insight into the survey data (Smart PLS, 2020). PLS-SEM is the correct statistical analysis method for this study because the analysis is concerned with testing a theoretical framework from a prediction perspective, the structural model is complex and includes many constructs and indicators, the structural model includes both reflective and formative constructs, and PLS-SEM allows us to integrally validate both the measurement model, to assess each constructs reliability and validity, and the structural model that guides the hypotheses testing (Hair, Hult, Ringle, & Sarstedt, 2017G).

3.3.1 Analysis with Smart PLS-SEM – Measurement model

This paragraph describes the check that was performed with PLS-SEM in the measurement model. To check how the data was distributed, we assessed the two data distribution measures, skewness and kurtosis. Kurtosis is a measure of whether the distribution is too peaked, and skewness assesses the extent to which the distribution of a variable is symmetrical. The skewness should be not greater than +1.00 or smaller than -1.00; equally, the kurtosis should not be greater than +1.00 otherwise the distribution is too peaked (Hair, Hult, Ringle, & Sarstedt, 2017E). The items' outer loadings on the measures were also checked (relationships from the constructs to the items). The loading coefficients should be greater than 0.708 to ensure sufficient reliability (Hair, Hult, Ringle, & Sarstedt, 2017A). To assess the internal consistency reliability, this research assessed the Cronbach alpha and the composite reliability. According to the literature, the real reliability lies between the Cronbach alpha (lower bound) and the composite reliability (upper bound). The Cronbach alpha is a conservative measure of internal consistency reliability, while composite reliability tends to overestimate internal consistency reliability (Hair, Hult, Ringle, & Sarstedt, 2017B). The Cronbach alpha is the most frequently used statistic to provide reliable internal consistency (Saunders, Lewis, & Thornhill, 2019D). The alpha coefficient is between 0 and 1 and should be at least 0.7 or higher to substantiate an acceptable internal consistency and the reliability of the constructs. Values below 0.6 are insufficient, and values between 0.6 and 0.7 are considered poor (Stokking, 2016; Saunders, Lewis, & Thornhill, 2019D). Composite reliability above 0.70 is considered satisfactory; however, it should not be close to 1.00 otherwise it will be too reliable (Hair, Hult, Ringle, & Sarstedt, 2017B).

The convergent validity was tested to check whether the items that should be related are indeed strongly correlated (Saunders, Lewis, & Thornhill, 2019D). The convergent validity was calculated in Smart PLS-SEM with the average variance extracted (AVE) function (Hair, Ringle, Sarstedt, & Gudergan, 2017C). The constructs must have an AVE of at least 0.50. An AVE value of 0.50 means that the construct explains 50% of each indicator's variance (Hair, Hult, Ringle, & Sarstedt, 2017B).

The discriminant validity was also tested to ensure that the items that theoretically should not be related do not correlate (Saunders, Lewis, & Thornhill, 2019D). The discriminant validity was calculated in Smart PLS-SEM with the cross-loadings function, the heterotrait-monotrait ratio (HTMT) function, and the Fornell-Larcker function (Hair, Ringle, Sarstedt, & Gudergan, 2017C). In assessing the cross-loading function, the indicator's outer loading on the associated construct should be greater than any of its cross loadings (its correlation) on other constructs (Hair, Hult, Ringle, & Sarstedt, 2017B). After the cross-loading function, the Fornell-Larcker function is assessed. The Fornell-Larcker method is based on the idea that a construct shares more variance with its associated indicators than any other construct. Therefore, each construct's average value square root must be larger than its correlation with other constructs (Hair, Hult, Ringle, & Sarstedt, 2017B). The last step in ensuring discriminant validity is assessing the HTMT ratio function, which is the mean of all the correlations of the indicators across the constructs measuring different constructs. The HTMT approach estimates what the accurate correlation would be between two constructs if they were correctly measured (i.e., if they were entirely reliable). An HTMT value above 0.90 suggests a lack of discriminant validity (Hair, Hult, Ringle, & Sarstedt, 2017B). The final step in assessing the measurement model is to check whether the dataset is free of CMB. CMB, in the context of PLS-SEM, is a phenomenon that is caused by the measurement method used in a SEM study and not by the network of causes and effects in the model being studied. To assess the CMB in PLS-SEM, this research used the CMB procedure of Kock and Lynn (2012), who proposed a full collinearity test. The occurrence of a VIF greater than 3.3 is theoretically an indication of pathological collinearity and also an indication that a model may be contaminated by CMB. Therefore, if all the VIFs resulting from a full collinearity test are equal to or lower than 3.3, the model can be considered free of CMB (Kock, 2015).

3.3.2 Analysis with Smart PLS-SEM – Structural model

The hypotheses were tested in either the positive or negative direction with the two-tailed bootstrapping function in Smart PLS-SEM. The bootstrapping function shows the T-values and the P-values (probability value) for the hypotheses. The T-value is calculated in the path coefficients and the hypothesis is considered significant when the T-value is greater than 1.96 at a significance level of 5%.In addition, the bootstrapping function shows the P-value for the hypotheses. The P-value is the probability of erroneously rejecting a true null hypothesis. This study assumed a significance level of 5%, therefore, the P-value had to be smaller than 0.05 to reject the null hypothesis and conclude that the relationship was significant. The bootstrapping in Smart PLS-SEM works by randomly creating subsamples out of the original data set. This process is repeated until many random subsamples have been made. this research used the recommended 5,000 subsamples to ensure the stability of the results (Smart PLS, 2020; Hair, Hult, Ringle, & Sarstedt, 2017D). The disadvantage of the bootstrapping technique is that the path coefficients can slightly change (are not stable) due to the random subsampling, hence the distribution of the samples change along with the coefficients (Hair, Hult, Ringle, & Sarstedt, 2017D). To evaluate the structural model, this research used the coefficient of determination (R^2 Value) measure. This coefficient is a measure of the model's predictive power and is calculated as the squared correlation between the endogenous constructs' (constructs that are being explained in the model) actual and predicted values. The R^2 value ranges from 0 to 1, with higher levels indicating higher levels of predictive accuracy. Chin (1998) defined R^2 values of 67%, 33%, and 19% as substantial, moderate, and weak, respectively. In addition to evaluating the R^2 values, this research also evaluated the F^2 values. The F^2 effect size measure shows a change in the R^2 value when an exogenous construct (constructs that explain other

constructs in the model) is omitted from the model to evaluate whether the omitted construct has a substantial impact on the endogenous construct. According to Cohen, the guidelines for assessing F^2 are that values of 0.02, 0.15, and 0.35, which respectively represent small, medium, and large effects for the exogenous latent variable. Effect size values of less than 0.02 indicate that there is no effect.

The final assessment of predictive relevance this research used was the Stone-Geisser Q^2 value. To calculate the Q^2 value, this research used the blindfolding procedure in Smart PLS. Blindfolding is a sample re-use technique, which systematically deletes data points and provides a prognosis of their original values. To delete datapoints, blindfolding requires an omission distance (D), a D = 7 implies that every seventh data point of a latent variable's indicators will be eliminated in a single blindfolding round. The difference between the omitted data points and the predicted ones is the prediction error. The sum of squared prediction errors is used to calculate the Q^2. When the value is larger than zero, this indicates predictive relevance. In addition to evaluating the Q^2 values, this research also included the Q^2 effect sizes. These are calculated by first measuring the Q^2 value including (Q^2 including) the exogenous construct, and then measuring it without the exogenous construct (Q^2 excluding; Q^2incl. – Q^2excl. divided by 1- Q^2 incl.). A Q^2 value of 0.02 indicates that the exogenous construct has small predictive relevance, 0.15 is considered medium, and 0.35 is considered large (Hair, Hult, Ringle, 2017F).

3.4. Ethics

This study has considered the 10 principles of Saunders et al.'s code of ethics (Saunders, Lewis, & Thornhill, 2019H). Table 5 shows how the principles were acknowledged.

Principle	Meaning in this research
Integrity, fairness, and open-mindedness	This research was conducted by acting openly, being truthful, and promoting accuracy. Conversely, in this research, deception, dishonesty, and misrepresentation of data and findings were avoided.
Respect for others	The rights of all persons in this research were recognized, and their dignity was respected.
Avoidance of harm (non-maleficence)	All the obtained data from the survey will remain anonymous, meet GPDR regulations, be confidential, and used only for this research. The respondents must provide their explicit consent to use the data, which will be used on an aggregate level and will not refer to any company or individual. The respondents can at any given point in time revoke and delete the provided information. The data will only remain accessible for the study's researchers; distributing the data to third parties will not occur.
Privacy of those taking part	
Voluntary nature of participation and right to withdraw	
Informed consent of those taking part	
Ensuring confidentiality of data and maintenance of anonymity of those taking part	
Responsibility in the analysis of data and reporting of findings	
Compliance in the management of data	GPDR regulations are applied.
Ensuring the safety of the researcher	The risks related to the researcher's safety (physical threat or abuse) were low since social interactions were not face-to-face.

Table 5: Ethical principles

4. Results

4.1. Research execution

The survey was structured in LimeSurvey together with three other researchers who jointly researched sub-aspects related to DEAC. First, to increase the internal validity, a pilot testing period of one week was undertaken. Some of the pilot test participants provided feedback regarding questions they did not fully understand. Table 3 in Appendix 1 shows the feedback and changes made in the final survey.

After the testing phase, the survey began, and for three weeks experts in our network (convenience sampling) were contacted and asked if they knew more experts who may wish to participate in this research. The survey was seven pages long, with an average completion time of 20 minutes, thus, it was within the margin of six to eight pages for a feasible survey length (Saunders, Lewis, & Thornhill, 2019L). However, the respondents communicated that they did not felt comfortable sharing this long survey with their networks. Diverging from the research plan, we decided to create an action page[3] at the World Wildlife Fund (WWF) to reach a broader target group. This page meant that for each completed survey, we donated €1.50 to the WWF, which resulted in a total cost of €243. Following this, we commenced the self-selection process by advertising on LinkedIn. All four researchers shared the invitation to the survey within their LinkedIn networks. The invitation obtained 2,000 views but only resulted in a few respondents.

Consequently, we had to find other ways to contact a sufficient number of experts. One method was to contact (experts) forums such as the KNVI (Koninklijke Nederlandse Vereniging van Informatieprofessionals). The KNVI acknowledged the research's relevance and promoted it on their website.[4] We also looked for ways to personally contact experts on LinkedIn. The researchers sent their second-degree contacts an invitation to connect with an invitation text of 300 tokens. This process led to obtaining approximately 80% of the respondents and obtained a response rate of approximately 15%. There were no additional costs, which was important as this research had a limited budget, and there was no periodic quantity limit on sending the invitations to the experts.

The power of this approach was that approximately 500 second-degree contacts accepted the invitation, which resulted in a more significant and varied second-degree network to whom to send invitations. This approach is a form of convenience sampling and one of the most significant criticisms of convenience sampling is that it can be full of bias because the respondents are connected to the researchers (Saunders, Lewis, & Thornhill, 7.3 Non-probability sampling, 2019E). However, in this approach, only second-degree network experts were contacted, which means that the researchers did not know them, thereby, minimizing the risk of bias. In total, we collected a broad sample group of 142 respondents divided over 19 branches from 99 different identifiable Dutch companies[5].

[3] Appendix 3, figure 4 shows the created action page at the WWF
[4] Appendix 3, figure 5 shows the promoting page of this research on the KNVI webpage
[5] Appendix 2, table 20 and table 21 shows the involved companies

4.2. Descriptive statistical results

A total of 388 unique respondents from different organizations commenced the survey but only 41% completed the survey. Only fully completed surveys were used in the study to maintain a reliable sample group without missing values, as missing values can affect the population's representation (Saunders, Lewis, & Thornhill, 2019J). In addition, 11% of the surveys were unreliable and excluded from the research because they answered ("strongly disagree," "disagree," or "somewhat disagree") the representative check question negatively. After removing the incomplete surveys (*N* = 230) and unreliable results (*N* = 16), the sample consisted of a total of 142 surveys. Table 6 shows the survey completion percentages and the understanding of the constructs and items in detail.

Completed	***N***	**%**	**Check question***	***N***	**%**
0%	87	22%	Strongly disagree	3	2%
12%	91	23%	Disagree	1	1%
25%	26	7%	Somewhat disagree	12	8%
37%	13	3%	Neither agree nor disagree	10	6%
50%	8	2%	Somewhat agree	23	15%
62%	3	1%	Agree	73	46%
87%	2	1%	Strongly agree	36	23%
100%	158	41%			
Total	**388**	**100%**		**158**	**100%**
****Check Question: Were you able to fill in this survey with an adequate understanding of all the concepts and questions?*					

Table 6: Percentage of survey completion and understanding of the constructs and items

The survey was completed by 62 business or enterprise architects (44%), 21 external or internal business/IT consultants (15%), seven IT managers (5%), five business managers (4%), and 47 other occupations (32%). The respondents worked in 19 different industries in the Netherlands: 31 in the finance and insurance industry (22%), 21 in technology (15%), 16 in consulting services (11%), 10 in the national government (7%), eight in transportation (6%), seven in education (5%), six in healthcare (4%), and 43 in other industries (30%). Table 8 depicts the functions and industries in more detail. Furthermore, the dataset consisted mostly of large companies and is less representative of small companies, as 74 respondents (52%) worked for a company with more than 3,000 employees, 19 for companies with 1,001-3,000 employees (13%), 19 for companies with 301–1,000 employees (13%), and 30 for companies with less than 301 employees (21%). The sample contained 16 respondents with a company age of up to 5 years (11%) and 103 respondents whose companies were more than 20 years old (72%). Consequently, the dataset is less representative of smaller (start-up) companies and more representative of experienced companies. Finally, the dataset contains mainly mature respondents, which enriches the reliability of the findings as 84 respondents had more than 20 years working experience (59%), 30 respondents had 11 to 20 years working experience (21%), and only 21 respondents had 0 to 5 years working experience (15%). Table 7 shows the companies' sizes and ages, and the working experience of the respondents in more detail.

Employees	*N*	%	Company age	*N*	%	Experience	*N*	%
Less than 100	22	15%	0-5 years	16	11%	0-5 years	21	15%
101-300	8	6%	6-10 years	6	4%	6-10 years	7	5%
301-1,000	19	13%	11-20 years	17	12%	11-20 years	30	21%
1,001-3,000	19	13%	20-25 years	9	6%	20-25 years	30	21%
Over 3,000	74	52%	Over 25 years	94	66%	Over 25 years	54	38%
Total	**142**	**100%**		**142**	**100%**		**142**	**100%**

Table 7: Size and ages of the companies, including the working experience of the respondents

Industry*	*N*	%	Functions	*N*	%
Finance and insurance	31	22%	Business or enterprise architect	62	44%
Technology	21	15%	Other**	36	25%
Consulting services	16	11%	External business/IT consultant	11	8%
Other	13	9%	Internal business/IT consultant	10	7%
National government	10	7%	IT manager	7	5%
Transportation	8	6%	Business manager	5	4%
Education	7	5%	Operations manager	3	2%
Healthcare	6	4%	Chief information officer (CIO)	3	2%
Consumer business/goods	5	4%	Chief executive officer (CEO)	2	1%
Manufacturing	5	4%	Innovation manager	2	1%
Energy and utilities	5	4%	Chief digital officer (CDO)	1	1%
Wholesale/retail	4	3%			
Telecommunications	3	2%			
Basic materials	2	1%			
Municipal governments	2	1%			
Real estate	1	1%			
Industrials	1	1%			
Hotel industry	1	1%			
Oil & Gas	1	1%			
Total	**142**	**100%**		**142**	**100%**

** The functions the other column consists of can be found in Table 19 of Appendix 2*
*** The companies included can be found in Tables 20 and 21 of Appendix 2*

Table 8: Respondents per industry and function

4.3. Measurement model assessment

4.3.1 Data distribution

The data distribution was checked with the two distribution measures skewness and kurtosis. The kurtosis values were all within the threshold (not greater than +1.00), which meant that the data was not too peaked. Similarly, the skewness values were also within the threshold (not greater than +1.00 or smaller than -1.00), which meant that the data was symmetrical. However, the skewness of items EAM[1] and EAM[2] were slightly higher than the threshold but not alarmingly so. Table 9 in Appendix 1 shows the details of the data distribution. The outer loadings were all greater than 0.708, except for the items MARKET[3] (-0.019) and TECHTURB[3] (0.520). After examining MARKET[3] and TECHTURB[3] in more detail and reversing[6] the meaning of the items, the reliability was still not sufficient. However, because market turbulence and technological turbulence are both reflective first-order constructs, the items are interchangeable. This means that any single item can generally be omitted without changing the construct's meaning as long as the construct has sufficient reliability. Therefore, MARKET[3] and TECHTURB[3] were excluded from the research. NETWORK[2] was slightly below the threshold but still acceptable and, therefore, was not deleted from the research. Table 10 in Appendix 1 shows the complete item list of the outer loadings.

4.3.2 Discriminant validity

First, the items' cross loadings were checked to assess the discriminant validity (the extent to which a construct is unique and genuinely distinct from other constructs). The indicator's outer loading on the associated construct was more significant for all the items on the associated construct than any of its cross loadings on other constructs, indicating discriminant validity (Hair, Hult, Ringle, & Sarstedt, 2017B). Table 11 in Appendix 1 shows the complete list of the indicators' outer loadings and all the constructs. The Fornell-Larcker method in Table 12 shows that all the constructs share more variance with their associated indicators than with any other construct. The square root of each construct's average value is more extensive than its correlation with other constructs, again indicating discriminant validity (Hair, Hult, Ringle, & Sarstedt, 2017B).

	MT	MOB	NC	OP	PFI	PRF	SENS	TT	TRA
MT	**0.847**								
MOB	0.260	**0.833**							
NC	0.335	0.506	**0.804**						
OP	0.477	0.357	0.526	**0.838**					
PFI	0.361	0.434	0.646	0.502	**0.892**				
PRF	0.316	0.421	0.655	0.472	0.843	**0.888**			
SENS	0.335	0.735	0.546	0.395	0.517	0.520	**0.829**		
TT	0.499	0.217	0.262	0.331	0.297	0.261	0.346	**0.840**	
TRA	0.412	0.766	0.546	0.446	0.513	0.469	0.733	0.259	**0.835**

MT: Market Turbulence, MOB: Mobilizing, NC: Networking Capability, OP: Organizational Performance, PFI: Platform Integration, PRF: Platform Reconfiguration, SENS: Sensing, TT: Technological Turbulence, TRA: Transforming.

Table 12: Fornell-Larcker method – discriminant validity

[6] Both items were formulated as positive statement instead as a negative statement. Appendix 1 table 4, shows the full details of the items and statements

Finally, Table 13 shows the heterotrait-monotrait ratio of correlation, in which the ratios are all within the conservative margin of 0.90, thus, indicating discriminant validity (Hair, Hult, Ringle, & Sarstedt, 2017B). Most of the constructs indicate a high discriminant validity as their ratios are far lower than the conservative 0.90 (Hair, Hult, Ringle, & Sarstedt, 2017B).

	MT	MOB	NC	OP	PFI	PRF	SENS	TT	TRA
MT									
MOB	**0.303**								
NC	0.368	**0.555**							
OP	0.536	0.398	**0.574**						
PFI	0.400	0.477	0.700	**0.552**					
PRF	0.354	0.467	0.713	0.523	**0.899**				
SENS	0.398	0.824	0.59	0.443	0.575	**0.579**			
TT	0.632	0.260	0.293	0.383	0.344	0.303	**0.410**		
TRA	0.473	0.845	0.596	0.495	0.561	0.515	0.815	**0.301**	
MT: Market Turbulence, MOB: Mobilizing, NC: Networking Capability, OP: Organizational Performance, PFI: Platform Integration, PRF: Platform Reconfiguration, Sens: Sensing, TT: Technological Turbulence, Trans: Transforming.									

Table 13: Heterotrait-monotrait ratio – discriminant validity

4.3.3 Reliability and convergent validity

As indicated in Table 14, this research assessed the first-order latent variables for reliability and convergent validity. Construct reliability was assessed based on the Cronbach alpha and composite reliability. For all the latent variables, both values exceeded the 0.70 thresholds, indicating sufficient reliability. The convergent validity assessment showed that all the AVE values exceeded the lower limit of 0.5, indicating that the construct explains more than 50% of each indicator's variance (Hair, Hult, Ringle, & Sarstedt, 2017B).

	Cronbach's Alpha	Composite Reliability	AVE
Sensing	0.886	0.917	0.687
Transforming	0.913	0.933	0.698
Mobilizing	0.889	0.919	0.693
Platform Integration	0.914	0.939	0.795
Platform Reconfiguration	0.910	0.937	0.789
Networking Capability	0.908	0.927	0.647
Market Turbulence	0.806	0.883	0.717
Technological Turbulence	0.790	0.877	0.705
Organizational Performance	0.894	0.922	0.703

Table 14: Cronbach's Alpha, Composite Reliability, and Average Variance Extracted of the first-order latent variables

4.3.4 Common method bias

As indicated in Table 15, all the VIF values were (far) lower than 3.3, meaning that the model was not contaminated by CMB (Kock, 2015).

	DEAC	DPC	NC	MT	TT	OP
DEAC		1.712	1.561	1.692	1.709	1.703
DPC	2.105		1.647	2.070	2.073	2.020
NC	2.215	2.223		2.269	2.292	2.118
MT	1.667	1.615	1.579		1.326	1.471
TT	1.452	1.381	1.354	1.159		1.369
OP	1.671	1.687	1.600	1.551	1.656	

Table 15: Common method bias

Figure 5 in Appendix 3 shows the complete measurement model in Smart PLS-SEM.

4.4. Results - Structural model

Hyp.	Relationship	Outcome	T-Value	P-Value	F^{2}*	Q^{2}**	CI (2.5%-97.5%)
1	DEAC -> DPC	Supported	8.346	0.000	0.436	0.280	(0.409-0.667)
2	DEAC -> NC	Supported	3.766	0.000	0.140	0.060	(0.151-0.472)
3	NC -> OP	Supported	2.633	0.008	0.070	0.040	(0.053-0.473)
4	DPC -> NC	Supported	6.097	0.000	0.378	0.170	(0.328-0.657)
5A	MT -> OP *(via DPC)*	Supported	2.326	0.020	0.041		(0.013-0.290)
	MT -> OP		4.312	0.000	0.112		(0.163-0.441)
5B	TT -> OP *(via DPC)*	Not Supported	1.210	0.226	0.012		(-0.244-0.053)
	TT -> OP		0.359	0.720	0.001		(-0.127-0.185)
6	DPC -> OP	Supported	2.067	0.039	0.040	0.040	(0.06-0.412)

- *R^{2} of the endogenous constructs (DPC = 0.304; NC = 0.526; OP = 0.429)*
- *Q^{2} of the endogenous constructs (DPC = 0.299; NC = 0.330; OP = 0.284)*

***** *Effect size impact indicator is according to Cohen (1988),*
F^{2} values: 0.35 (large), 0.15 (medium), and 0.02 (small)

****** *Predictive relevance (Q2) of the exogenous construct is according to Henseler (2009),*
Q^{2} values: 0.35 (large), 0.15 (medium), and 0.02 (small).

Table 16: Structural model assessment

The coefficient of determination (R^{2} Value) is considered to be the measure of predictive power (Hair, Hult, Ringle, 2017F). Based on the structural analyses, this study confirms that 30.4% (R^{2} = 0.304) of the variance for DPC can be explained by the model. This level of predictive accuracy is slightly below the threshold of 33% to be considered moderate and, therefore, has to be considered weaker (Chin 1998). The predictive accuracy of NC is considered to be moderate (Chin 1998) at 52.6% (R^{2} = 0.526; >33%; <67%). The predictive accuracy of OP is also considered to be moderate (Chin 1998) at 42.9% (R^{2} = 0.429).

This study used a blindfolding procedure to assess predictive power and calculated Stone-Geisser Q^2 values. The Q^2-values for the endogenous latent constructs that are above zero indicate predictive relevance (Hair, Hult, Ringle, 2017F). The blindfolding procedure (D = 7) indicates that the Q2-value for DPC is above zero (Q^2 = 0.299), the same applies to NC (Q^2 = 0.330) and OP (0.284). The Q^2 results once again confirm the predictive relevance of the model (Hair, Hult, Ringle, 2017F).

Accordingly, Hypothesis 1 is supported (T-value = 8.346, P-value = 0.000) with an F^2 value of 0.436, indicating that DEAC has, according to Cohen, a large predictive relevance effect (> 0.350) on DPC. The Q^2 effect size (Q^2 = 0.280) is similar, indicating a medium effect of DEAC on DPC (> 0.020; < 0.350; Hair, Hult, Ringle, 2017F). Hypothesis 2 is also supported (T-value = 3.766, P-value = 0.000) with an F^2 value of 0.140, indicating that DEAC has a less strong predictive relevance effect (< 0.150) on NC. The Q^2 effect size (Q^2 = 0.060) is similar, indicating a medium predictive relevance effect of DEAC on NC (> 0.020; < 0.350; Hair, Hult, Ringle, 2017F). Hypothesis 3 is also supported (T-value = 2.633, P-value = 0.008) with an F^2 value of 0.070, indicating that NC has a less strong predictive relevance effect (< 0.150) on OP. The Q^2 effect size (Q^2 = 0.040) is similar, indicating a less strong predictive relevance effect of DEAC on NC (> 0.020; < 0.350; Hair, Hult, Ringle, 2017F). Hypothesis 4 is supported (T-value = 6.097, P-value = 0.000) with an F^2 value of 0.378, indicating that DPC has a large predictive relevance effect (> 0.350) on NC. The Q^2 effect size (Q^2 = 0.170) is similar, indicating a moderate predictive relevance effect of DEAC on NC (> 0.020; < 0.350; Hair, Hult, Ringle, 2017F).

Hypothesis 5A is supported (T-value = 2.326, P-value = 0.020) with an F^2 value of 0.041, indicating a small predictive relevance effect (> 0.020; < 0.150) showing that MT has a moderating effect via DPC on OP. However, the analysis also showed that the direct effect of MT on OP is more significant (T-value = 4.312, P-value = 0.000) with an F^2 value of 0.112, indicating a small predictive relevance effect (> 0.020;< 0.150). However, Hypothesis 5B is not supported (T-value = 1.210, P-value = 0.226) with an F^2 value of 0.012, indicating no predictive relevance effect and showing that TT has no moderating effect via DPC on OP. Similarly, the analysis showed that the direct effect of TT on OP is less significant (T-value = 0.359, P-value = 0.720) with an F^2 value of 0.001, indicating no predictive relevance effect (< 0.020). Finally, Hypothesis 6 is supported (T-value = 2.067, P-value = 0.039) with an F^2 value of 0.040, indicating that DPC has a small predictive relevance effect (< 0.150) on OP. The Q^2 effect size is similar (Q^2 = 0.040), indicating a small predictive relevance effect of DPC on OP (< 0.150; Hair, Hult, Ringle, 2017F).

Figure 6 in Appendix 3 shows the complete structural model in Smart PLS-SEM.

5. Discussion

5.1 Discussion – Survey

As shown in Section 4.2, most of the respondents in this research are business or enterprise architects (44%). That the business or enterprise architects represent the majority of the sample group adds value because they are the experts in this working field, which was noticeable in the check question "Were you able to fill in this survey with an adequate understanding of all the concepts and questions?" Twenty-six percent strongly agreed with the question, 55% agreed, and only 19% somewhat agreed. In addition, the architects have considerable working experience as 70% of them have more than 20 years working experience. Seventy-six percent of the architects work for senior companies that are older than 20 years. The architects also work for several industries (four), and most of them are from the private sector, that is, 68%. Table 17 in Appendix 1 shows the additional details of the business or enterprise architects.

This primary research occurred at the same time as the COVID-19 pandemic. The pandemic made it more challenging to personally contact experts to fill in the survey. Nonetheless, the research reached the goal of 150 respondents from a broad and diverse sample group. According to the literature, to statistically analyze a particular category, a sample size of 30 respondents is required (Saunders, Lewis, & Thornhill, 2019I). The required sample size meant it was only possible to examine the finance and insurance industry, which had 31 respondents, and the outcome of this analysis was interesting. Two of the six hypotheses were supported: the enhancement of DEAC on DPC (T-value = 5.773 , P-value = 0.000) and the enhancement of DPC on NC (T-value = 6.482, P-value = 0.000). Table 18 in Appendix 1 shows the T-values, P-values, R^2, F^2, effect sizes, and confidence levels.

5.2 Discussion – Results

This research makes several contributions to the IT and IS management knowledge base. The PLS-SEM results, gathered from 142 respondents from 19 different industries in the Netherlands, implies that having DEAC will result in better DPC and NC.

First, this research contributes to the current literature gap by providing empirical evidence of DEAC's interaction with DPC as requested by Xiao et al. (2020) and Reuver et al. (2018). The enhancement effect of DEAC on DPC was strongly supported within this research. Consequently, the statements of Helfat et al. (2018) and Teece et al. (2017) appear to be correct. DEAC enhance DPC by making the organization more adaptable and prepared for the future with its digital platforms. Second, supported by the results, this research demonstrated that if a firm possesses DEAC, NC is enhanced. This outcome is in line with the statements of Abbas et al. (2019), Battistella et al. (2017), and Lütjen et al. (2019), who stated that networking relationships are dynamic because organizations purposefully seek business relationships to retain or increase their organizational performance. Third, this research pointed out that the enhancement effect of DEAC on NC is of added value because NC will positively affect organizational performance. Consequently, this research supports the claims of Abbas et al. (2019), Mu et al. (2017), Cisi et al. (2020), and Huanmei et al. (2015), who stated that networking leads to sustainable organizational performance and stronger strategic orientations. Fourth, the enhancement effect of DEAC on DPC is similar to the effect on NC by enriching organizational performance. In terms of the previous scholarship, this outcome is in line with Karzan et al. (2018), Witschel et al. (2019), and Parker et al. (2016), who stated that DPC creates a competitive advantage and a higher organizational performance. Fifth, NC resulting in organizational performance is of additional value because this research has demonstrated that having DPC lead to a higher NC. These findings validate Cenamor et al.'s (2019) statement that DPC allow companies to improve their ability to communicate with partners and Pesce et al.'s (2019) statement that the creation of value for each participant in a platform occurs through positive network effects. Sixth, the findings indicated that market turbulence will negatively affect DPC in obtaining organizational performance. However, the findings of the direct effect on organizational performance are more significant, as those findings means that not all the risks of market turbulence on organizational performance can be hedged. This is in line with Karimi et al.'s (2015) argument, which stated that many firms find it difficult to predict the market expectations because they believe, for instance, that their new products and services will significantly alter individuals' behavior and transform society. In reality, most of these products and services create faster, easier, and more flexible ways for consumers to do what they are already doing. Seventh, interestingly, the findings do not support the statements of Karimi et al. (2015) and Picard (2009), who stated that technological turbulence will challenge DPC obtaining or retaining organizational performance, as the moderating effect of technological turbulence was not supported in this research, nor was the direct effect of technological performance on organizational performance supported. This may be because the dataset mainly consisted of large and experienced companies, who are likely to have a sufficient IT budget, which allows them to continuously adapt to emerging technological developments.

5.3 Discussion – Limitations and Reflection

Although this research makes significant contributions to knowledge, it is constrained by content-related and methodological limitations. This research did not conduct methodological triangulation, as only the quantitative survey approach is used. The generalizability of the results cannot be ensured for all types of industries and firms. This research found that some of the findings for the finance and insurance industry were not generalizable. Furthermore, this research focused on mostly large and mature companies in the Netherlands.

In addition, the research group initially consisted of four members, but, unfortunately, we started with three researchers. Decreasing the size of the research group in an already short time frame made it more challenging to gather as many respondents as possible to increase the generalizability of the findings. In addition, the survey included one representative check question for the whole survey. Therefore, it is possible that the respondents filled in negative answers for construct(s) that may not have been used in this survey. This research only used 44 of the 78 questions from the conducted survey data. In hindsight, it would have been better to include a check question for each construct. Furthermore, despite the time pressure, we probably should have spent more time testing the survey. The survey was only tested by four people and the common complaint during the collection of the data was that the survey was too long, resulting in a completion percentage of only 41%. A shorter survey would perhaps have resulted in a larger sample group and, thus, the greater generalizability of the findings.

5.4 Conclusions

At the beginning of this research, the following RQ was formulated: How does DEAC relate to NC and DPC and leads an increased NC or DPC to competitive advantages, and how does MTT affect organizational performance?

This research has provided clarity through the empirical evidence of 142 respondents from 19 different industries in the Netherlands about the RQ. Affirming that NC and DPC are of added value for a firm's organizational performance, those capabilities will be enhanced when a firm possesses DEAC. In addition, when a firm possesses DPC it will increase NC and thus; again increasing its organizational performance indirect via NC. However, the market turbulence will negatively impact organizational performance via DPC. Although it is not possible to cover all market turbulence risks, it is crucial to minimize the impact and thus; be aware of DPC and continuously adapt to the changing business landscape. The findings of this study also indicate that technological turbulence (nor via DPC or direct on organizational performance) is not negatively affecting organizational performance.

5.5 Recommendations for practice

As digital platforms transform the way firms build a competitive advantage, companies will be increasingly required to manage or are already managing digital platforms. The worldwide emergence of digital platforms can be seen in the projected worldwide IT spending in 2019 of $3.74 trillion. Consequently, this study provides decision-makers with a potent source of value. The literature and outcomes have demonstrated that DEAC are an effective mechanism for aligning business and IT systems. DEAC are distinguishable from the (ordinary) short-term operational capabilities by focusing on the renewal of existing organizational capabilities as a means of competitive survival in the long term. This research focused mainly on the relationship between DEAC with DPC, and with NC. Investing in DEAC results in competitive advantages, as the outcomes of this study indicate that improving DPC and NC both result in higher organizational performance.

Finally, fostering DEAC within a company and, thereby, rapidly changing the business environment (through the three EA core capabilities: sensing, seizing, and transforming) is vital in today's commercial environment. One only has to consider the way in which the current COVID19 pandemic has changed the business environment and customer expectations of several industries.
For example, restaurants that had to close and were only allowed to sell food online or stage makers for events suddenly started making consumer furniture. Hence, DEAC should be positioned within the firm to use the EA sensing, EA seizing, and EA transforming capabilities to their fullest potential. To this end, Appendix 4 of this research includes a comprehensive survey, grounded in theory, which can be used as an assessment tool by decision-makers.

5.6 Recommendations for further research

Future research could complement the results of this study by replicating the results in other countries. In addition, it would be valuable to conduct this research model in other industries as this study discovered that the finance and insurance industries findings differ from the main findings. Therefore, it would be interesting to know how each industry scores using the model. Finally, this research mostly focused on large and older companies; thus, it would be valuable to investigate how smaller and start-up companies are engaging in this topic, that is, the so-called small- and medium-sized enterprises.

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Appendix 1

Table 3 shows the feedback of the testers and the changes made in the final survey.

Feedback testers	Changes in the survey
Tester had to read two times to understand some of the questions.	No changes.
Tester did not have information about competitors to answer the question about the business value of competitors.	Those respondents will answer, "Neither agree nor disagree, "so there is no problem.
Tester did not know what a state of flux means: "Concerns the extent to which technology in the industry is in a state of flux."	Changed the statement to: Concerns the extent to which technology in the industry is in a state of flux (the rate of technological change in an industry).
Tester had no comments, although the survey is quite long.	No changes.

Table 3: Feedback testers of the survey

Table 4 shows the literature statements of the constructs items.

Items	Choose the appropriate response for each item (1—strongly disagree, 7—strongly agree)
EAS[1]	We use our EA to identify new business opportunities or potential threats
EAS[2]	We review our EA services (e.g., providing content, EA standards, skills and knowledge) on a regular basis to ensure that they are in line with what our key (internal and external) stakeholders want
EAS[3]	We adequately evaluate the effect of changes in the baseline and target EA organization
EAS[4]	We devote sufficiently time enhancing our EA to improve business processes
EAS[5]	We develop greater reactive and proactive strength in the business domain using our EA
EAM[1]	We use our EA to draft potential solutions when we sense business opportunities or potential threats
EAM[2]	We use our EA to evaluate, prioritize and select potential solutions when we sense business opportunities or potential threats
EAM[3]	We use our EA to mobilize resources in line with a potential solution when we sense business opportunities or potential threats
EAM[4]	We use our EA to draw up a detailed plan to carry out a potential solution when we sense business opportunities or potential threats
EAM[5]	We use our EA to review and update our practices in line with renowned business and IT best practices when we sense business opportunities or potential threats
EAT[1]	Our EA enables us to successfully reconfigure business processes and the technology landscape to come up with new or more productive assets
EAT[2]	We successfully use our EA to adjust our business processes and the technology landscape in response to competitive strategic moves or market opportunities
EAT[3]	We successfully use our EA to engage in resource recombination to match our product-market areas and our assets better
EAT[4]	Our EA enables flexible adaptation of human resources, processes, or the technology landscape that leads to competitive advantage

EAT[5]	We successfully use our EA to create new or substantially changed ways of achieving our targets and objectives
EAT[6]	Our EA facilitates us to adjust for and respond to unexpected changes
DIGPLAT[1]	Our platform easily accesses data from our partners' IT systems
DIGPLAT[2]	Our platform provides seamless connection between our partners' IT systems and our IT systems (e.g., forecasting, production, manufacturing, shipment etc.)
DIGPLAT[3]	Our platform has the capability to exchange real-time information with our partners
DIGPLAT[4]	Our platform easily aggregates relevant information from our partners' databases (e.g., operating information, business customer performance, cost information etc.)
DIGPLAT[5]	Our platform is easily adapted to include new partners
DIGPLAT[6]	Our platform can be easily extended to accommodate new IT applications or functions
DIGPLAT[7]	Our platform employs standards that are accepted by most current and potential partners
DIGPLAT[8]	Our platform consists of modular software components, most of which can be reused in other business applications
NETWORK[1]	We analyze what we would like to achieve with which collaborators
NETWORK[2]	We rely on close individual relationships to secure personnel & financial resources
NETWORK[3]	We judge in advance which possible partners to talk to about building up relationships
NETWORK[4]	We appoint coordinators who are responsible for the relationships with our collaborators
NETWORK[5]	We discuss with collaborators regularly on how to support each other to achieve success
NETWORK[6]	We can deal flexibly with our collaborators
NETWORK[7]	We almost always solve problems constructively with our collaborators
MARKET[1]	Customer needs and preferences change rapidly
MARKET[2]	Product demands and preferences are uncertain
MARKET[3]	It is easy to predict the change in customer needs and preferences
MARKET[4]	Current market competitive conditions are unpredictable
TECHTURB[1]	It is difficult to forecast technology developments in our industry
TECHTURB[2]	The technology environment is uncertain
TECHTURB[3]	Technological development is predictable
TECHTURB[4]	The technology environment is complex
PERF[1]	During the last 2 or 3 years, we relatively perform much better than our main competitors in the same industry in: Increase market share
PERF[2]	During the last 2 or 3 years, we relatively perform much better than our main competitors in the same industry in: Increase customer satisfaction
PERF[3]	During the last 2 or 3 years, we relatively perform much better than our main competitors in the same industry in: Increase profit
PERF[4]	During the last 2 or 3 years, we relatively perform much better than our main competitors in the same industry in: Enhance business brand and image
PERF[5]	During the last 2 or 3 years, we relatively perform much better than our main competitors in the same industry in: Enhance customer loyalty

Table 4: Construct items including the statements mentioned in the survey

Table 9 shows how the data is distributed in the measurement model.

	Items	Missing	Mean	Median	Min	Max	Standard Dev.	Excess Kurtosis	Skewness
SENSING	EAS[1]	0.000	4.739	5.000	1.000	7.000	1.643	-0.248	-0.816
	EAS[2]	0.000	5.239	6.000	1.000	7.000	1.542	0.235	-1.002
	EAS[3]	0.000	4.859	5.000	1.000	7.000	1.660	-0.477	-0.717
	EAS[4]	0.000	4.570	5.000	1.000	7.000	1.684	-0.552	-0.543
	EAS[5]	0.000	4.859	5.000	1.000	7.000	1.630	-0.249	-0.737
MOBILIZING	EAM[1]	0.000	5.310	6.000	1.000	7.000	1.539	0.765	-1.200
	EAM[2]	0.000	5.289	6.000	1.000	7.000	1.412	0.966	-1.086
	EAM[3]	0.000	4.775	5.000	1.000	7.000	1.526	-0.242	-0.634
	EAM[4]	0.000	4.810	5.000	1.000	7.000	1.552	-0.099	-0.764
	EAM[5]	0.000	4.810	5.000	1.000	7.000	1.501	-0.203	-0.580
TRANSFORMING	EAT[1]	0.000	4.993	5.000	1.000	7.000	1.545	0.086	-0.961
	EAT[2]	0.000	5.056	5.000	1.000	7.000	1.457	0.495	-0.941
	EAT[3]	0.000	4.535	5.000	1.000	7.000	1.685	-0.599	-0.516
	EAT[4]	0.000	4.690	5.000	1.000	7.000	1.571	-0.258	-0.698
	EAT[5]	0.000	4.796	5.000	1.000	7.000	1.554	-0.078	-0.746
	EAT[6]	0.000	4.859	5.000	1.000	7.000	1.466	0.075	-0.770
PTF- INT	DIGPLAT[1]	0.000	4.634	5.000	1.000	7.000	1.612	-0.917	-0.387
	DIGPLAT[2]	0.000	4.514	5.000	1.000	7.000	1.573	-0.845	-0.311
	DIGPLAT[3]	0.000	4.690	5.000	1.000	7.000	1.741	-0.901	-0.526
	DIGPLAT[4]	0.000	4.430	5.000	1.000	7.000	1.750	-0.976	-0.304
PTF-REC	DIGPLAT[5]	0.000	4.606	5.000	1.000	7.000	1.682	-0.953	-0.427
	DIGPLAT[6]	0.000	4.866	5.000	1.000	7.000	1.562	-0.193	-0.784
	DIGPLAT[7]	0.000	5.239	6.000	1.000	7.000	1.501	0.222	-0.985
	DIGPLAT[8]	0.000	4.739	5.000	1.000	7.000	1.727	-0.556	-0.652
NETWORK CAP	NETWORK[1]	0.000	5.070	5.000	1.000	7.000	1.382	-0.066	-0.694
	NETWORK[2]	0.000	4.690	5.000	1.000	7.000	1.502	-0.255	-0.529
	NETWORK[3]	0.000	5.254	5.000	1.000	7.000	1.270	1.001	-0.885
	NETWORK[4]	0.000	5.254	6.000	1.000	7.000	1.426	0.043	-0.824
	NETWORK[5]	0.000	5.070	5.000	1.000	7.000	1.346	-0.059	-0.602
	NETWORK[7]	0.000	5.021	5.000	1.000	7.000	1.470	-0.241	-0.695
	NETWORK[6]	0.000	4.810	5.000	1.000	7.000	1.538	-0.431	-0.650
M-TURB	MARKET[1]	0.000	4.915	5.000	1.000	7.000	1.685	-0.754	-0.616
	MARKET[2]	0.000	4.415	5.000	1.000	7.000	1.704	-0.960	-0.264
	MARKET[3]	0.000	4.437	5.000	1.000	7.000	1.431	-0.767	-0.381
	MARKET[4]	0.000	4.528	5.000	1.000	7.000	1.639	-0.877	-0.279
T-TURB	TECHTURB[1]	0.000	3.951	4.000	1.000	7.000	1.616	-1.051	0.131
	TECHTURB[2]	0.000	3.944	4.000	1.000	7.000	1.656	-1.052	0.175
	TECHTURB[3]	0.000	4.521	5.000	1.000	7.000	1.398	-0.527	-0.568
	TECHTURB[4]	0.000	5.366	6.000	1.000	7.000	1.517	0.002	-0.884
ORG PERF	PERF[1]	0.000	4.887	5.000	1.000	7.000	1.251	-0.035	-0.439
	PERF[2]	0.000	5.127	5.000	1.000	7.000	1.238	0.470	-0.739
	PERF[3]	0.000	4.915	5.000	1.000	7.000	1.247	-0.177	-0.498
	PERF[4]	0.000	5.169	5.000	2.000	7.000	1.250	0.261	-0.850
	PERF[5]	0.000	5.007	5.000	1.000	7.000	1.184	0.228	-0.503

Table 9: Data distribution measurement model

Table 10 shows the outer loadings of the items in the measurement model.

	Items	SENS	TRA	MOB	PFI	PRF	NC	MT	TT	OP
SENSING	EAS[1]	0.791								
	EAS[2]	0.833								
	EAS[3]	0.808								
	EAS[4]	0.849								
	EAS[5]	0.862								
TRANSFORMING	EAT[1]		0.836							
	EAT[2]		0.865							
	EAT[3]		0.813							
	EAT[4]		0.838							
	EAT[5]		0.856							
	EAT[6]		0.803							
MOBILIZING	EAM[1]			0.843						
	EAM[2]			0.866						
	EAM[3]			0.835						
	EAM[4]			0.769						
	EAM[5]			0.847						
PTF-INT	DIGPLAT[1]				0.898					
	DIGPLAT[2]				0.912					
	DIGPLAT[3]				0.877					
	DIGPLAT[4]				0.879					
PTF-REC	DIGPLAT[5]					0.912				
	DIGPLAT[6]					0.929				
	DIGPLAT[7]					0.859				
	DIGPLAT[8]					0.850				
NETWORK CAP	NETWORK[1]						0.803			
	NETWORK[2]						0.653			
	NETWORK[3]						0.796			
	NETWORK[4]						0.818			
	NETWORK[5]						0.848			
	NETWORK[6]						0.818			
	NETWORK[7]						0.875			
M-TUB	MARKET[1]							0.885		
	MARKET[2]							0.892		
	MARKET[4]							0.756		
T-TUR	TECHTURB[1]								0.883	
	TECHTURB[2]								0.873	
	TECHTURB[4]								0.758	
ORG PERF	PERF[1]									0.838
	PERF[2]									0.880
	PERF[3]									0.839
	PERF[4]									0.795
	PERF[5]									0.838

M-TUR: Market Turbulence, NETWORK CAP: Network Capability, ORG PERF: Organizational Performance, PTF-INT: Platform Integration, PTF-REC: Platform Reconfiguration, T-TUR: Technological Turbulence

Table 10: Outer loadings measurement model

Table 11 shows to cross loadings in the measurement model to assess discriminant validity.

	Items	SENS	TRA	MOB	PFI	PRF	NC	MT	TT	OP
SENSING	EAS[1]	0.791	0.615	0.655	0.393	0.383	0.449	0.379	0.262	0.366
	EAS[2]	0.833	0.630	0.620	0.399	0.431	0.488	0.262	0.244	0.311
	EAS[3]	0.808	0.606	0.581	0.467	0.431	0.424	0.253	0.220	0.374
	EAS[4]	0.849	0.585	0.595	0.406	0.421	0.372	0.230	0.378	0.245
	EAS[5]	0.862	0.601	0.594	0.480	0.488	0.526	0.262	0.332	0.339
TRANSFORMING	EAT[1]	0.628	0.836	0.662	0.380	0.341	0.350	0.322	0.173	0.302
	EAT[2]	0.581	0.865	0.661	0.391	0.388	0.430	0.274	0.167	0.353
	EAT[3]	0.616	0.813	0.633	0.494	0.412	0.518	0.376	0.304	0.411
	EAT[4]	0.611	0.838	0.643	0.425	0.364	0.520	0.376	0.228	0.445
	EAT[5]	0.575	0.856	0.645	0.410	0.405	0.405	0.363	0.197	0.416
	EAT[6]	0.664	0.803	0.592	0.473	0.444	0.518	0.354	0.233	0.308
MOBILIZING	EAM[1]	0.614	0.606	0.843	0.349	0.377	0.396	0.107	0.122	0.255
	EAM[2]	0.624	0.639	0.866	0.390	0.361	0.444	0.172	0.152	0.269
	EAM[3]	0.632	0.673	0.835	0.394	0.389	0.510	0.290	0.244	0.381
	EAM[4]	0.506	0.531	0.769	0.269	0.255	0.310	0.217	0.179	0.224
	EAM[5]	0.669	0.721	0.847	0.391	0.361	0.432	0.289	0.205	0.342
PTF-INT	DIGPLAT[1]	0.494	0.457	0.413	0.898	0.798	0.583	0.337	0.225	0.505
	DIGPLAT[2]	0.488	0.530	0.425	0.912	0.743	0.561	0.336	0.299	0.502
	DIGPLAT[3]	0.422	0.431	0.371	0.877	0.738	0.552	0.298	0.291	0.345
	DIGPLAT[4]	0.439	0.408	0.336	0.879	0.725	0.609	0.316	0.247	0.433
PTF-REC	DIGPLAT[5]	0.453	0.435	0.332	0.817	0.912	0.614	0.283	0.232	0.433
	DIGPLAT[6]	0.502	0.452	0.413	0.753	0.929	0.612	0.218	0.204	0.376
	DIGPLAT[7]	0.386	0.367	0.385	0.699	0.859	0.563	0.239	0.203	0.416
	DIGPLAT[8]	0.505	0.411	0.369	0.720	0.850	0.536	0.387	0.293	0.454
NETWORK CAP	NETWORK[1]	0.446	0.493	0.410	0.459	0.463	0.803	0.255	0.177	0.388
	NETWORK[2]	0.284	0.364	0.276	0.350	0.380	0.653	0.174	0.064	0.329
	NETWORK[3]	0.382	0.361	0.424	0.510	0.520	0.796	0.119	0.083	0.331
	NETWORK[4]	0.405	0.353	0.382	0.515	0.515	0.818	0.235	0.188	0.389
	NETWORK[5]	0.484	0.478	0.441	0.597	0.599	0.848	0.331	0.229	0.502
	NETWORK[6]	0.486	0.529	0.453	0.555	0.575	0.818	0.338	0.295	0.468
	NETWORK[7]	0.532	0.470	0.437	0.600	0.592	0.875	0.374	0.359	0.510
M-TUB	MARKET[1]	0.286	0.391	0.231	0.403	0.346	0.348	0.885	0.401	0.501
	MARKET[2]	0.287	0.332	0.228	0.255	0.221	0.232	0.892	0.462	0.358
	MARKET[4]	0.283	0.309	0.198	0.217	0.202	0.247	0.756	0.424	0.313
T-TUR	TECHTURB[1]	0.336	0.252	0.172	0.296	0.260	0.198	0.523	0.883	0.315
	TECHTURB[2]	0.285	0.196	0.197	0.222	0.187	0.217	0.460	0.873	0.217
	TECHTURB[4]	0.243	0.193	0.181	0.217	0.198	0.245	0.268	0.758	0.281
ORG PERF	PERF[1]	0.322	0.329	0.282	0.418	0.387	0.437	0.477	0.295	0.838
	PERF[2]	0.361	0.387	0.299	0.481	0.426	0.475	0.445	0.329	0.880
	PERF[3]	0.268	0.364	0.240	0.413	0.321	0.388	0.383	0.302	0.839
	PERF[4]	0.348	0.380	0.352	0.383	0.405	0.423	0.288	0.229	0.795
	PERF[5]	0.353	0.413	0.327	0.401	0.434	0.477	0.388	0.226	0.838

M-TUR: Market Turbulence, NETWORK CAP: Network Capability, ORG PERF: Organizational Performance, PTF-INT: Platform Integration, PTF-REC: Platform Reconfiguration, T-TUR: Technological Turbulence

Table 71: Discriminant validity – Cross loadings

Table 17 shows the business or enterprise architects in more detail.

Work experience			Industry			Company age			Check-question		
0–5	2	3%	Private Sector	42	68%	0–5	6	10%	Strongly agree	16	26%
6–10	3	5%	Public Sector	18	29%	6–10	2	3%	Agree	34	55%
11–20	14	23%	NGO	1	2%	11–20	7	11%	Somewhat agree	12	19%
20–25	11	18%	Other	1	2%	20–25	4	6%			
>25	32	52%				> 25	43	69%			
	62	100%		62	100%		62	100%		62	100%

Table 17: Business or enterprise architect descriptives

Table 18 shows the structural model assessment for the finance and insurance industry. Only the relation between DEAC and DPC is (highly) supported, and the relation between DPC and NC.

Hyp.	Relationship	Outcome	T-Value	P-Value	F^{2}*	Q^{2}**	CI (2.5%-97.5%)
1	DEAC -> DPC	Supported	5.773	0.000	1.206	0,912	(0.393 - 0.897)
2	DEAC -> NC	Not Supported	1.663	0.096	0.105	0,019	(-0.032 - 0.432)
3	NC -> OP	Not Supported	0.356	0.721	0.009	0,000	(-1150 - 0.591)
4	DPC -> NC	Supported	6.482	0.000	1.543	0,490	(0.500 - 0.935)
5A	MT -> OP *(via DPC)*	Not Supported	0.317	0.751	0.010		(-0.497 - 0.507)
	MT -> OP		3.152	0.002	0.536		(0.124 - 0.883)
5B	TT -> OP *(via DPC)*	Not Supported	1.047	0.295	0.074		(-0.509 - 0.234)
	TT -> OP		1.574	0.116	0.122		(-0.097 - 0.587)
6	DPC -> OP	Not Supported	0.729	0.466	0.037	0,050	(-0.467 - 1277)

- *R^{2} of the endogenous constructs (DPC = 0.547; NC = 0.832; OP = 0.589)*
- *Q^{2} of the endogenous constructs (DPC = 0.477 ; NC = 0.580; OP = 0.421)*

** Effect size impact indicator is according to Cohen (1988),*
F^{2} values: 0.35 (large), 0.15 (medium), and 0.02 (small)

*** Predictive Relevance (Q2) of the exogenous construct is according to Henseler (2009),*
Q^{2} values: 0.35 (large), 0.15 (medium), and 0.02 (small).

Table 18: Results finance and insurance industry

Appendix 2

Table 19 shows the functions within the other functions subtotal.

Functions	***N***
Enterprise Architect	3
Finance Controller	2
Controller	2
Solution Architect	2
Marketing & Communication employee	1
Architect	1
Data Analyst	1
Digital Architect	1
Logistics coordinator	1
Director	1
Owner/Freelance	1
Domain Architect	1
VP - Innovation Hub	1
Communication	1
Lead IT Architect	1
CSR	1
Manager Enterprise Architecture	1
forefront staff	1
Marketing Manager	1
Project Manager IT	1
Presales Enterprise Architect	1
Specialist	1
Teaching assistant	1
Functional Application Manager	1
Teacher	1
GPC Manager	1
used to be enterprise architect	1
Group Controller	1
ZZP-er, i.e. all of the above	1
head of data and integration	1
Intern	1
Total	**36**

Table 19: Other functions in detail

Table 20 shows the organizations from the private sector in detail.

Company	*N*	Company	*N*
ABN AMRO	2	Klm	1
AholdDelhaize	1	Koninklijke BAM Groep	1
Amazon	1	KPN	1
Anonymous	22	Krish InfoCom B.V.	1
AppSolution Now	1	LeasePlan	1
AsIsToBe	1	L'Oréal	1
asr	1	Love Carpe Diem	1
Athlon International	1	Manufacturing Company	1
Atos	1	Mason IT	1
BCT	1	Medtronic	1
Bol.com	1	MN	2
Booz Allen Hamilton	1	MTP Services	1
Brink's Solutions Nederland	1	NA	1
BSPBSP	1	Nationale Nederlanden	2
Bunzl	1	NLMK Group	1
Capgemini	4	Nyenrode universiteit	1
Cegeka	1	OpenInc	1
Cellpoint Digital	1	Oracle	1
Daraz.pk	1	Profacit	1
de Volksbank	1	Rabobank	2
De Wilde Consulting BV	1	Robidus	1
DHL Global Forwarding	3	SAP SE	1
DOW Chemicals	1	Schiphol Group	1
Eneco	1	Softtek	1
EPAM	1	Sogeti Nederland	1
EY	1	Sopra Steria Benelux	1
Finalist	1	The Future Group	1
Fluor b	1	Timp-iT	1
Fujitsu	1	Ubachs Business Consultancy	1
GGN	1	Vermaat Groep	1
Imperial Brands	1	wahl clipper	1
ING	3	Worldline Group	1
Into Control	1	Zensung Pte Ktd	1
KBC	1	MSFT	1
Total (100)	**63**		**37**

Table 20: Organizations in the private sector

Table 21 shows the organizations from the Non-Governmental, Private-Public Partnerships, and Public Sector in detail.

Sector	Company	*N*
Non-Governmental Organization (NGO)	Slachtofferhulp Nederland	1
Non-Profit Organization (NPO)	Anonymous	1
Non-Profit Organization (NPO)	De Nederlandsche Bank	1
Non-Profit Organization (NPO)	GIK Institute	1
Non-Profit Organization (NPO)	Portbase B.V.	1
Other	Anonymous	1
Other	SunnyClouds	1
Private-Public Partnerships (PPP)	Anonymous	1
Private-Public Partnerships (PPP)	Normec Group	1
Private-Public Partnerships (PPP)	Private	1
Private-Public Partnerships (PPP)	Schimsalabim	1
Public Sector	Achmea	1
Public Sector	AKS Consulting	1
Public Sector	Anonymous	5
Public Sector	ASR Asset Managment	1
Public Sector	Company in financial sector	1
Public Sector	Education	1
Public Sector	Een zelfstandig bestuursorgaan (ZBO)	1
Public Sector	Enexis	2
Public Sector	Europol	1
Public Sector	Freelance	1
Public Sector	Gemeente Rotterdam	1
Public Sector	Gemeente Tilburg	1
Public Sector	Geodis	1
Public Sector	Justitiële informatiedienst	1
Public Sector	NN Group	1
Public Sector	PaIS/Centric	1
Public Sector	Port of Antwerp	1
Public Sector	Raad voor Rechtsbijstand	1
Public Sector	Rijkswaterstaat	2
Public Sector	Royal DSM NV	1
Public Sector	Sthree	1
Public Sector	The Open University Of the Netherlands	1
Public Sector	University of Applied Sciences Windesheim	1
Public Sector	Zorgdoc	1
Public Sector	Dienst Uitvoering Onderwijs (DUO)	1
Total		**42**

Table 21: Organizations in the other categories

Appendix 3

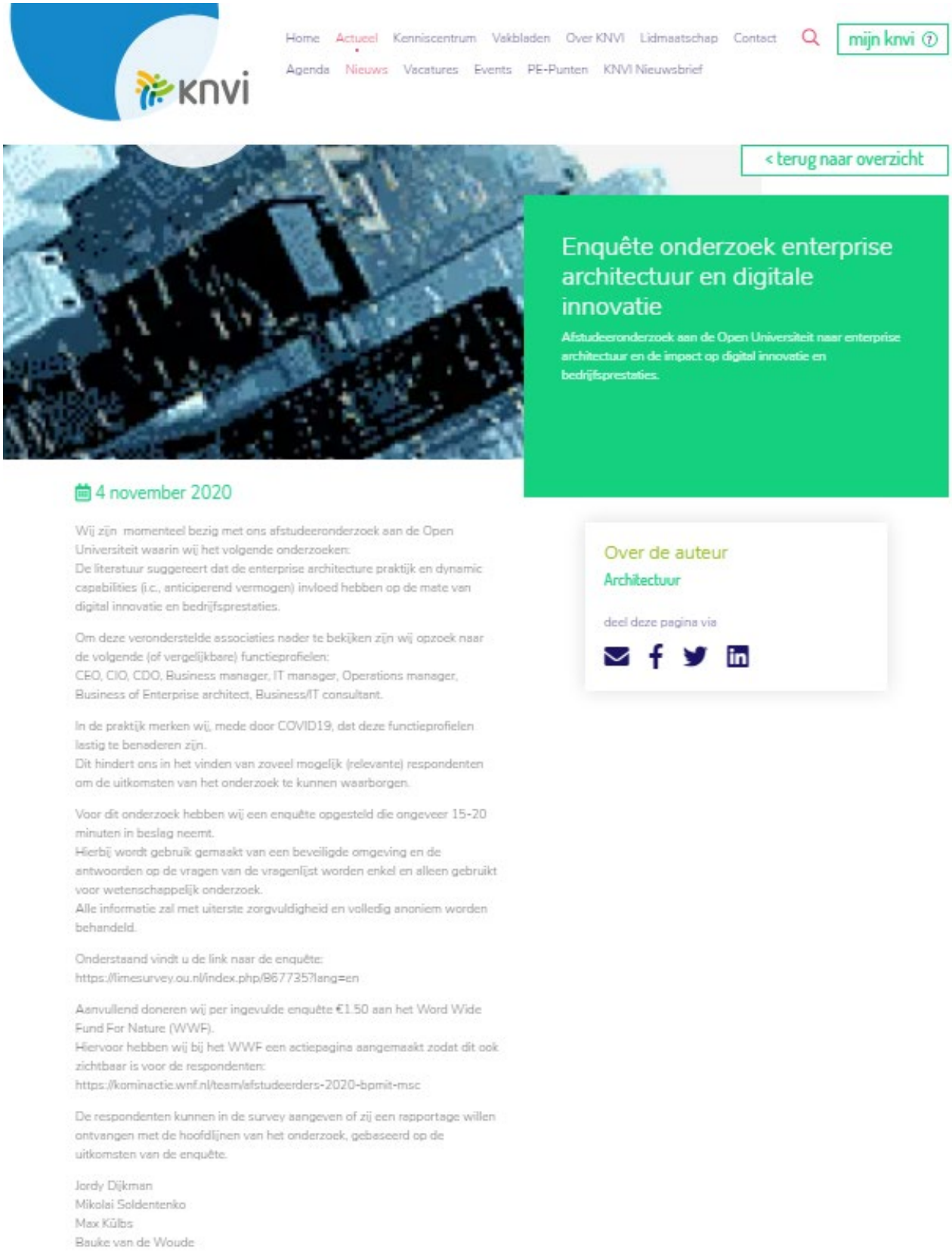
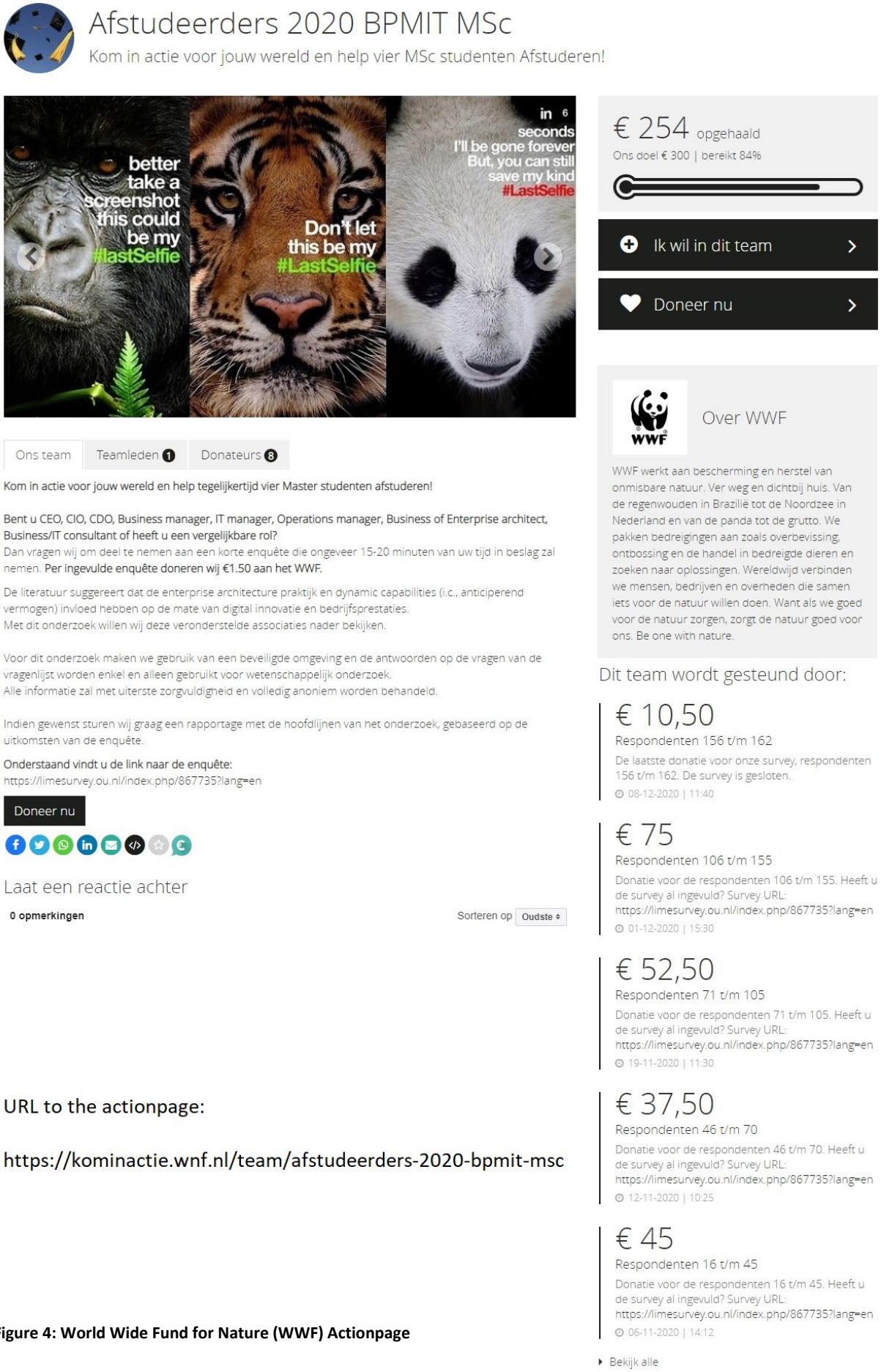


Figure 3: KNVI survey invite, URL: https://www.knvi.nl/nieuws/285383/Enqu%C3%AAte-onderzoek-enterprise-architectuur-en-digitale-innovatie



URL to the actionpage:

https://kominactie.wnf.nl/team/afstudeerders-2020-bpmit-msc

Figure 4: World Wide Fund for Nature (WWF) Actionpage

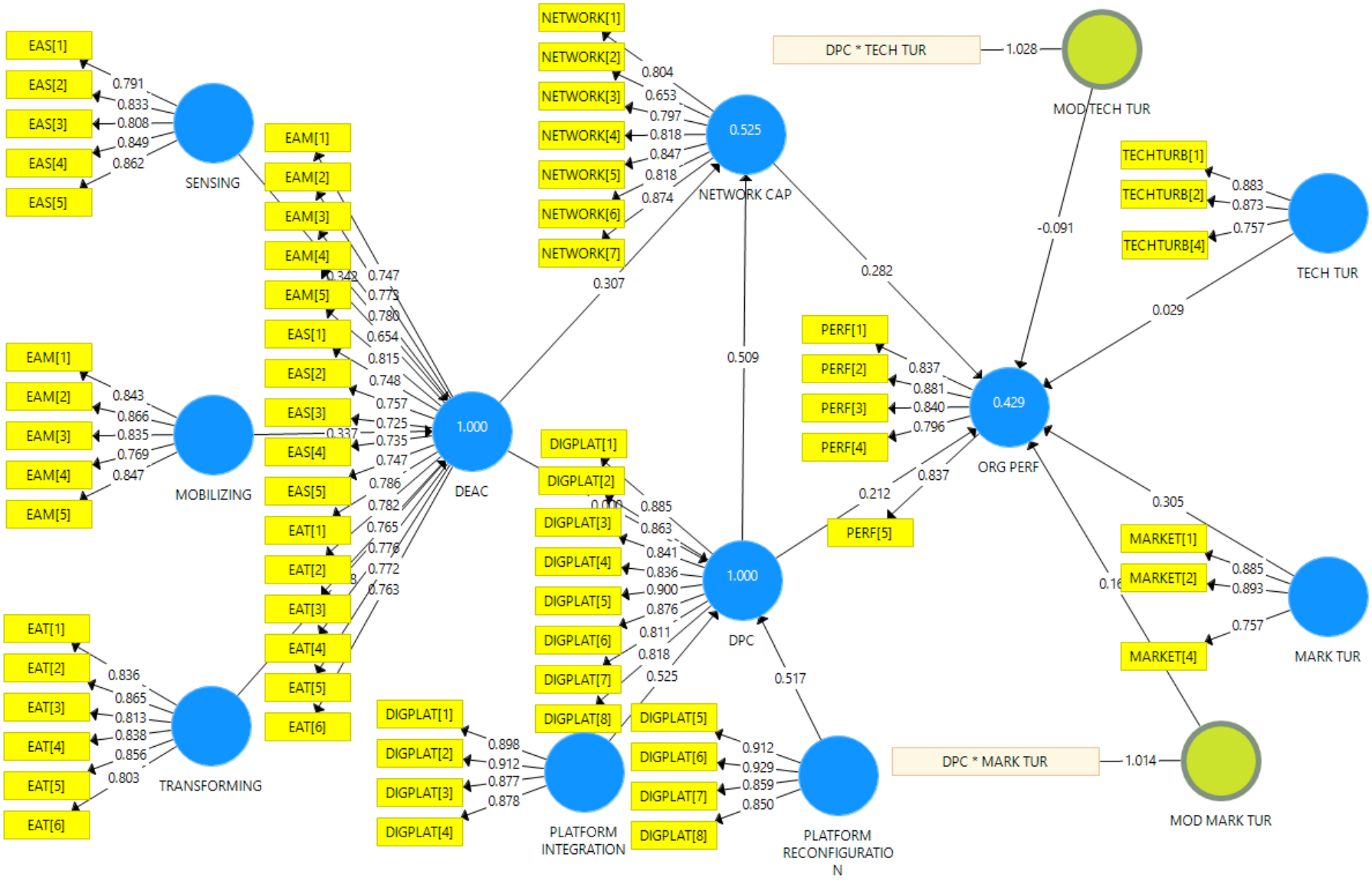


Figure 5: Measurement model in Smart PLS, Path analysis, R Square values for the constructs, regression coefficients in the outer model

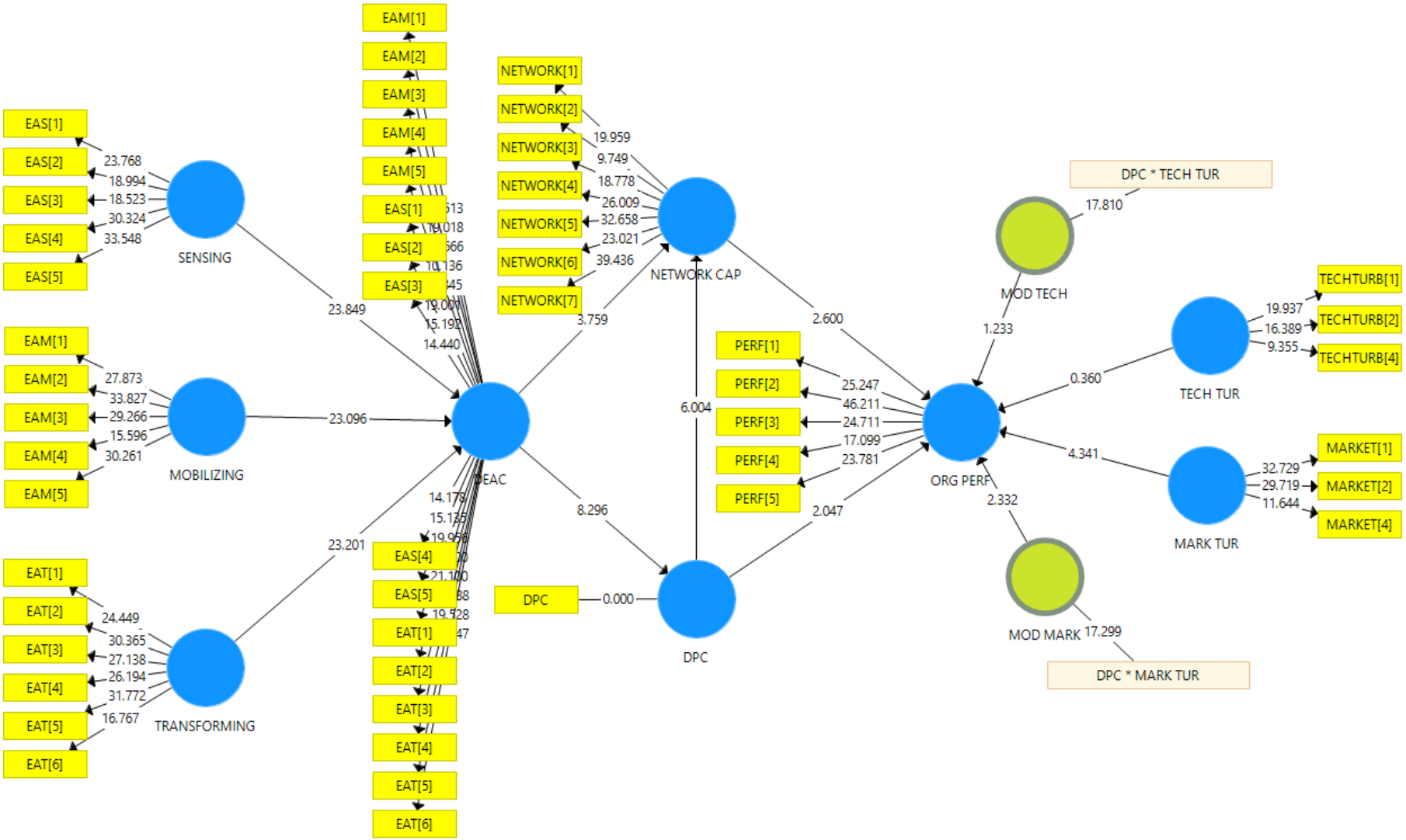


Figure 6: Structural model in Smart PLS, T-Value

Appendix 4

Dynamic Enterprise Architecture Capabilities and digital transformation

Introduction

Welcome to the survey on dynamic enterprise architecture capabilities and digital transformation.

This research is part of ongoing research of The Open University of the Netherlands on how Enterprise Architecture (EA) and EA-based capabilities contribute to organizational benefits, business value, and firm's overall digital transformation.

At the end of this survey, you can fill in your contact details.

Then, you will be the first to receive the findings of our research, with a list of managerial implications.

Confidentiality and anonymity

All obtained data will remain completely anonymous and confidential and will be used only for research purposes.

We analyze the data at an aggregate level, and we will not make any references to an individual or company. At all times, the data will remain accessible to only the researchers of the study and will not be distributed to third-parties.

At any given point, you can ask to revoke your participation in the study, and we will proceed to delete the provided information.

Key definitions

Enterprise Architecture:
We define an EA as the fundamental organization of an enterprise defining its current and desirable future state, along with the principles governing its design and development. Following this definition, an EA embodies all relevant components for describing an enterprise, including its operating model, organizational structure, business processes, data, applications, and technology. EA allows firms to add value across all business units, operations, human resources, and align strategic objectives with the particular use of digital technologies.

Dynamic enterprise architecture capabilities:
We define these capabilities as an organization's ability to leverage its EA for asset sharing and recomposing and renewal of organizational resources, together with guidance to proactively address the rapidly changing internal and external business environment and achieve the organization's desirable state. Dynamic enterprise architecture capabilities enable enterprise-wide digital transformations and provide an opportunity to build capabilities in parallel with implementing a new strategic direction.

Structure of the survey

The structure of the survey is as follows: After some background questions, we start with the survey items on EA capabilities and their use in practice.

This section follows by questions on how firms use digital (platform) capabilities and networking capabilities.

This survey continues with questions on operational digital capabilities and business model innovation. The final four parts of this survey concern questions about environmental aspects and organizational performance and business value.

The questions are measured by means of a 7 point Likert scale where 1 equals strongly disagree and 7 equals strongly agree.

Researchers

This research is led by four graduating researchers: Mikolai Soldatenko, Bauke van der Woude, Max Külbs and Jordy Dijkman.

This research is supervised by dr. Rogier van de Wetering, Associate Professor in Information Systems and Business Processes (rogier.vandewetering@ou.nl).

Many thanks for your time in participating in this research.

As a token of appreciation and to take action for our world, we will donate **€1.50** to the WWF for each completed survey.

You can follow the progress of donations made concerning this research here (https://kominactie.wnf.nl/team/afstudeerders-2020-bpmit-msc).

There are 26 questions in this survey.

Name

Please write your answer here:

Company name

Please write your answer here:

Please indicate the size-class of your company (Number of employees) *

 Choose one of the following answers
Please choose **only one** of the following:

- ◯ Less than 100 employees
- ◯ 101–300 employees
- ◯ 301–1000
- ◯ 1001–3000
- ◯ Over 3000 employees

Please select the category under which your organization falls *

 Choose one of the following answers
Please choose **only one** of the following:

- ◯ Private Sector
- ◯ Public Sector
- ◯ Private-Public Partnerships (PPP)
- ◯ Non-Governmental Organization (NGO)
- ◯ Non-Profit Organization (NPO)
- ◯ Other

In which industry does your organization operate (considering only the core business of your organization)? *

 Choose one of the following answers
Please choose **only one** of the following:

- ◯ Manufacturing
- ◯ Wholesale/retail
- ◯ Energy and utilities
- ◯ Telecommunications
- ◯ Finance and insurance
- ◯ Publishing/news
- ◯ Technology
- ◯ Consumer business/goods
- ◯ Basic Materials (Chemicals, paper, industrial metals & mining)
- ◯ Industrials (Construction & industrial goods)
- ◯ Oil & Gas
- ◯ Auto/car industry
- ◯ Pharmaceutical
- ◯ Legal
- ◯ Restaurants
- ◯ Transportation Agriculture
- ◯ Health Care
- ◯ Education
- ◯ Hotel industry
- ◯ National government
- ◯ Municipal governments
- ◯ Real estate
- ◯ Police
- ◯ Consulting Services
- ◯ Other [ ]

Please indicate the age of your company. *

 Choose one of the following answers
Please choose **only one** of the following:

- ◯ 0–5 years
- ◯ 6–10 years
- ◯ 11–20 years
- ◯ 20–25 years
- ◯ Over 25 years

Please indicate the amount of your working experience *

 Choose one of the following answers
Please choose **only one** of the following:

- ◯ 0–5 years
- ◯ 6–10 years
- ◯ 11–20 years
- ◯ 20–25 years
- ◯ Over 25 years

Please indicate your current function within the organization: *

 Choose one of the following answers
Please choose **only one** of the following:

- ◯ Chief executive officer (CEO)
- ◯ Chief information officer (CIO)
- ◯ Chief digital officer (CDO)
- ◯ Business manager
- ◯ IT manager
- ◯ Operations manager
- ◯ Innovation manager
- ◯ Business or enterprise architect
- ◯ Internal business / IT consultant
- ◯ External business / IT consultant
- ◯ Other

EA sensing capability

An EA sensing capability highlights the role of EA in firms' deliberate posture toward sensing and identifying new business opportunities or potential threats and developing a greater reactive and proactive strength in the business domain.

*To what extent do you agree with the following statements? **

Please choose the appropriate response for each item:

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Or Disagree	Somewhat Agree	Agree	Strongly Agree
We use our EA to identify new business opportunities or potential threats	◯	◯	◯	◯	◯	◯	◯
We review our EA services (e.g., providing content, EA standards, skills and knowledge) on a regular basis to ensure that they are in line with what our key (internal and external) stakeholders want	◯	◯	◯	◯	◯	◯	◯
We adequately evaluate the effect of changes in the baseline and target EA on the organization	◯	◯	◯	◯	◯	◯	◯

We devote sufficiently time enhancing our EA to improve business processes	◯	◯	◯	◯	◯	◯	◯
We develop greater reactive and proactive strength in the business domain using our EA	◯	◯	◯	◯	◯	◯	◯

EA mobilizing capability

An EA mobilizing capability refers to organizations' capability to use EA in the process of evaluating, prioritizing, and selecting potential solutions and mobilize firm resources in line with a potential solution

*To what extent do you agree with the following statements? **

Please choose the appropriate response for each item:

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Or Disagree	Somewhat Agree	Agree	Strongly Agree
We use our EA to draft potential solutions when we sense business opportunities or potential threats	◯	◯	◯	◯	◯	◯	◯
We use our EA to evaluate, prioritize and select potential solutions when we sense business opportunities or potential threats	◯	◯	◯	◯	◯	◯	◯
We use our EA to mobilize resources in line with a potential solution when we sense business opportunities or potential threats	◯	◯	◯	◯	◯	◯	◯

We use our EA to draw up a detailed plan to carry out a potential solution when we sense business opportunities or potential threats	◯	◯	◯	◯	◯	◯	◯

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Or Disagree	Somewhat Agree	Agree	Strongly Agree
We use our EA to review and update our practices in line with renowned business and IT best practices when we sense business opportunities or potential threats	◯	◯	◯	◯	◯	◯	◯

EA transforming capability

An EA transforming capability can be considered the ability to use the EA to successfully reconfigure business processes and the technology landscape, to engage in resource recombination and to adjust for and respond to unexpected changes

*To what extent do you agree with the following statements? **

Please choose the appropriate response for each item:

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Or Disagree	Somewhat Agree	Agree	Strongly Agree
Our EA enables us to successfully reconfigure business processes and the technology landscape to come up with new or more productive assets	◯	◯	◯	◯	◯	◯	◯
We successfully use our EA to adjust our business processes and the technology landscape in response to competitive strategic moves or market opportunities	◯	◯	◯	◯	◯	◯	◯

We successfully use our EA to engage in resource recombination to match our productmarket areas and our assets better	◯	◯	◯	◯	◯	◯	◯
Our EA enables flexible adaptation of human resources, processes, or the technology landscape that leads to competitive advantage	◯	◯	◯	◯	◯	◯	◯

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Or Disagree	Somewhat Agree	Agree	Strongly Agree
We successfully use our EA to create new or substantially changed ways of achieving our targets and objectives	◯	◯	◯	◯	◯	◯	◯
Our EA facilitates us to adjust for and respond to unexpected changes	◯	◯	◯	◯	◯	◯	◯

Digital platform capability

Digital platform capabilities refer to the digital information technology that supports information exchange activities with partners. This capability examines the firm's ability to achieve platform integration "through the timely and idiosyncratic exchange of information with its partners" and its ability to reconfigure platform resources "through modular designs and standardized interfaces in applications and processes"

*To what extent do you agree with the following statements? **

Please choose the appropriate response for each item:

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Or Disagree	Somewhat Agree	Agree	Strongly Agree
Our platform easily accesses data from our partners' IT systems	◯	◯	◯	◯	◯	◯	◯
Our platform provides seamless connection between our partners' IT systems and our IT systems (e.g., forecasting, production, manufacturing, shipment etc.)	◯	◯	◯	◯	◯	◯	◯
Our platform has the capability to exchange real-time information with our partners	◯	◯	◯	◯	◯	◯	◯

Our platform easily aggregates relevant information from our partners' databases (e.g., operating information, business customer performance, cost information etc.)	◯	◯	◯	◯	◯	◯	◯

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Or Disagree	Somewhat Agree	Agree	Strongly Agree
Our platform is easily adapted to include new partners	◯	◯	◯	◯	◯	◯	◯
Our platform can be easily extended to accommodate new IT applications or functions	◯	◯	◯	◯	◯	◯	◯
Our platform employs standards that are accepted by most current and potential partners	◯	◯	◯	◯	◯	◯	◯
Our platform consists of modular software components, most of which can be reused in other business applications	◯	◯	◯	◯	◯	◯	◯

Networking capability

A networking capability is the firm's ability to develop and use a network of actual and potential inter-organizational relationships to gain access to resources held by other actors and the focal firm's ability to develop these capabilities by integrating parts of the organization.

*In terms of networking capability, to what extent do you agree with the following statements? **

Please choose the appropriate response for each item:

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Or Disagree	Somewhat Agree	Agree	Strongly Agree
We analyze what we would like to achieve with which collaborators	◯	◯	◯	◯	◯	◯	◯
We rely on close individual relationships to secure personnel & financial resources	◯	◯	◯	◯	◯	◯	◯
We judge in advance which possible partners to talk to about building up relationships	◯	◯	◯	◯	◯	◯	◯
We appoint coordinators who are responsible for the relationships with our collaborators	◯	◯	◯	◯	◯	◯	◯

We discuss with collaborators regularly on how to support each other to achieve success	◯	◯	◯	◯	◯	◯	◯
We can deal flexibly with our collaborators	◯	◯	◯	◯	◯	◯	◯

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Or Disagree	Somewhat Agree	Agree	Strongly Agree
We almost always solve problems constructively with our collaborators	◯	◯	◯	◯	◯	◯	◯

Market turbulence

The extent to which the composition and preferences of customers tend to change over time.

Please choose the appropriate response for each item: * Please choose the appropriate response for each item:

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Or Disagree	Somewhat Agree	Agree	Strongly Agree
Customer needs and preferences change rapidly	◯	◯	◯	◯	◯	◯	◯
Product demands and preferences are uncertain	◯	◯	◯	◯	◯	◯	◯
It is easy to predict the change in customer needs and preferences	◯	◯	◯	◯	◯	◯	◯
Current market competitive conditions are unpredictable	◯	◯	◯	◯	◯	◯	◯

Technological turbulence

Concerns the extent to which technology in the industry is in a state of flux (the rate of technological change in an industry).

Please choose the appropriate response for each item:

*

Please choose the appropriate response for each item:

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Or Disagree	Somewhat Agree	Agree	Strongly Agree
It is difficult to forecast technology developments in our industry	◯	◯	◯	◯	◯	◯	◯
The technology environment is uncertain	◯	◯	◯	◯	◯	◯	◯
Technological development is predictable	◯	◯	◯	◯	◯	◯	◯
The technology environment is complex	◯	◯	◯	◯	◯	◯	◯

Organizational performance

Organizational performance refers to the degree to which a firm performs better than its key competitors.

Please choose the appropriate response for each item.

*During the last 2 or 3 years, we relatively perform much better than our main competitors in the same industry (for non-competing governmental agencies, you could also read competitors as 'other ministries or departments') in: **

Please choose the appropriate response for each item:

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree Or Disagree	Somewhat Agree	Agree	Strongly Agree
Increase market share	◯	◯	◯	◯	◯	◯	◯
Increase customer satisfaction	◯	◯	◯	◯	◯	◯	◯
Increase profit	◯	◯	◯	◯	◯	◯	◯
Enhance business brand and image	◯	◯	◯	◯	◯	◯	◯
Enhance customer loyalty	◯	◯	◯	◯	◯	◯	◯

Many thanks for your time in participating in this research.

08.12.2020 – 10:35

Submit your survey.
Thank you for completing this survey.