

## MODELS OF ADAPTABILITY OF ORGANIZATIONS IN CONDITIONS OF RISK AND UNCERTAINTY

### PhD Thesis - Abstract

for obtaining the scientific title of Doctor at  
Polytechnic University of Timișoara  
in the doctoral field of ENGINEERING AND MANAGEMENT

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**May 2024**

The last 30 years have been characterized by massive technological progress. The World Wide Web was launched in 1990 [1, p. 9], connecting people and information across all continents which led to the development of new applications such as search engines for information, e-commerce, online banking and social media [2, p. 5]. Rapidly advancing technology made it possible to process data on ever smaller devices leading to the invention of the iPhone in 2007 and with it the arrival of the digital world in the pockets and backpacks of many people with the invention of the iPhone in 2007 at the latest [3]. In 2010, Industry 4.0 opened up for people and companies [4, p. 1126]. The Internet of Things connected people and machines, blockchain technology created new possibilities such as digital currencies, and 3D printers and 3D scanners found their way into industry [2, p. 5]. The year 2015 marked the start of the era of Smart Everything, the first smart cars found their way onto the roads and homes became smart [2, p. 5]. A first globally harmonized 5G standard was adopted in 2017 [5] and less than two years ago the first AI was introduced to society with ChatGPT [6]. From now on it should be possible for everyone to connect with artificial intelligence in real time. And so, the current age of Web 3.0 [1, p. 9] describes a new plethora of disruptions that can continuously represent a curse and a blessing, an opportunity and a risk. Additionally, many societal changes took place during this period of time. In Europe at the beginning of the millennium, countries seemed to be coming closer together than ever before and introduced a common currency in the form of the Euro in 2000 [7]. 20 years later, with Brexit and the UK's exit from the EU [8], the whole European construct seemed to be falling apart again. The global financial crisis in 2007 [9] showed that a globally interconnected economy can quickly face globally interconnected financial risks. And then in 2015, with the adoption of the UN Agenda for Sustainable Development [10], the question arose as to whether economic growth and financial prosperity could continue to be the main objectives of economic trade. This question not only found its way into political institutions, but also into companies, as can be seen, for example, in the phenomenon of Industry 5.0<sup>1</sup>. If that is not sufficient change in the last 30 years, the world is facing completely new challenges due to climate change or the sudden and rapid spread of a global pandemic. In the search for answers to challenges such as climate change, governments and institutions have been developing completely new frameworks for economic activity, such as the Green Deal in 2019 [12].

<sup>1</sup> Industry 5.0 „is an open and evolving concept” showing three main characteristics: Human-centricity, sustainability, resiliency [11, p. 283]

Nowadays rapid changes can be observed at ecological, health, social and economic levels. These changes, in turn, are being accelerated and intensified by the global interdependencies of capital and labor markets, interdependencies of technologies [13, p. 2] and also the interconnectedness of ecological cause and effect chains across all continents and political and economic borders. These turbulences have led to a decline in the lifespan of companies in recent decades where we have seen even large companies disappear from the market [14, p. 144].

Researchers have been noticing that the extent and speed of change have increased rapidly [15, p. 11], [16, p. 1] which some experts describe as a turbulent business environment [13]. Others have adopted the acronym VUCA [15] from the military and described the world in which companies operate as volatile -where change is frequent, unpredictable and occurs in high speed- [17, p. 262], [18, p. 87], uncertain – where actors do not know what will happen and the potential impact- [18, p. 87] , complex -where “an emergent whole behaves differently from the elements that constitute the system”- [18, p. 88] and ambiguous -where the basic rules of the game and the understanding of cause-effect relationships are unclear- [18, p. 88]. Further scientists describe ideas such as VUCA as outdated and developed the idea of “BANI -Brittle (“illusory strength”), Anxious (“every choice appears to be potentially disastrous”), Nonlinear (“cause and effect are seemingly disconnected or disproportionate”) and Incomprehensible (“we try to find answers but the answers don’t make sense”) [19].

Even if the adequacy of the descriptions of the rapidly changing business environments can be debated, all descriptions of the new environment result in a new need for companies, the need for adaptability. Johansen notes that you need to accept “confusions as part of the game...figure out how to engage with confusion, engage with that fear, and flip it into an opportunity” [15, p. 10]. Gupta adds that “ the most successful business strategies in today’s world are those that are flexible and adaptive” [20]. Also Munteanu et al underline that business organizations need “to constantly adapt to new conditions” [16, p. 1].

During his career at an internationally operating energy utility headquartered in Germany, the author observed how rapidly political, societal, market, and technological conditions have changed, challenging entire business models. Based on these observations, the author assumes that adaptability has taken on a new and crucial significance for company organizations. Consequently, in his research, he investigates the underlying patterns of these rapid changes and turbulences, exploring capabilities that companies need to develop and foster in order to thrive in this rapidly changing and turbulent business environments.

In **chapter 1 -Research objectives-** , the author shares his personal observations along with academic research about the rapid changing market environments. He combines these insights with his experience as a leading executive in an international corporation. From these considerations, he concludes that adaptability is an essential capability for companies today and derives two central questions for this research:

- Q 1: Which organizational capabilities are needed to thrive in turbulent market environments?
- Q2: The author explored a research gap in the question of organizational factors that can facilitate the development of organizational adaptability. Therefore, his thesis examines the question: What are the factors that help to cultivate these organizational capabilities?

**Chapter 2 -Foundational concepts-** provides a thorough literature review of adaptability and details the concepts that are fundamental to this thesis. These concepts and different perspectives are integrated into a coherent framework that forms a comprehensive model of adaptability. Additionally, this chapter answers the first of the two central research questions by examining which organizational capabilities are needed to thrive in turbulent market environments.

At the beginning, the "why" of adaptability is discussed, see figure 1. Santalainen emphasizes that companies should aim for long-term viability in turbulent and rapidly changing environments to preserve sustainable success [18]. This perspective provides a foundation for the discussion and emphasizes the importance of adaptability in the contemporary business world. Mendoza and Peláez, Kaur and Mehta deepen the understanding of adaptability by explaining why it is needed, presenting a model for it [21], as well as providing insights into adaptive and absorptive capabilities [22].

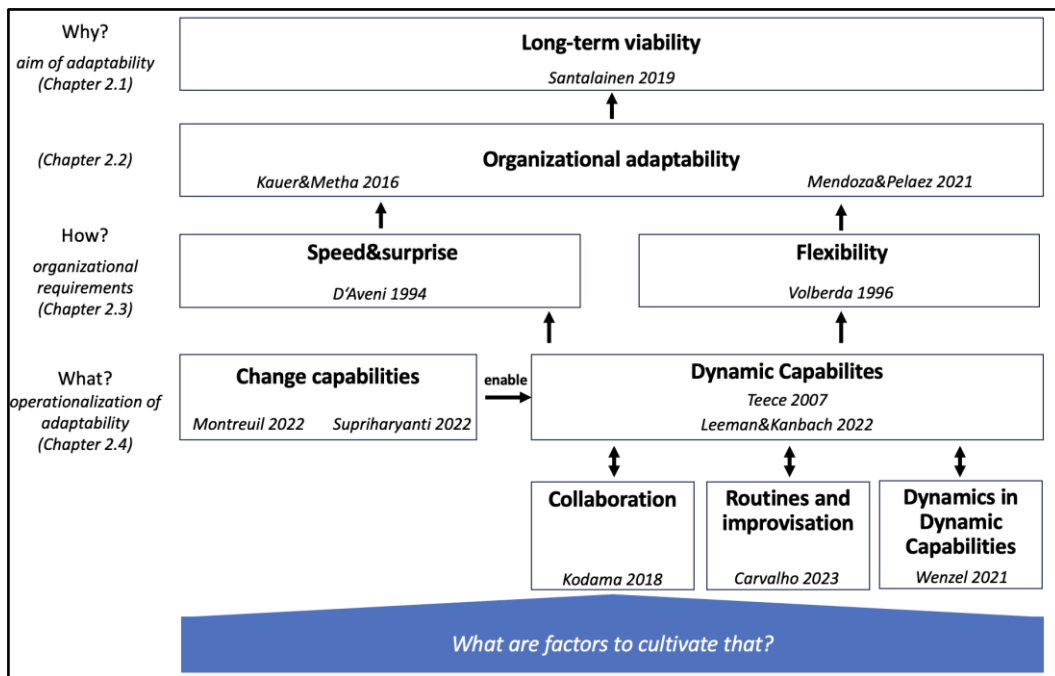


Figure 1 Adaptability: Foundational concepts and research gap (modified from [23, p. 3])

Within the how-section, see figure 1, the organizational requirements for adaptability are discussed. D'Aveni argues that organizations need to operate with speed and surprise in times of hypercompetition [24, p. 51] whereas Volberda, among others, builds on D'Aveni's perspective and develops the concept of flexibility to deal with a variety of changes [25].

The what-section, see figure 1, presents the operationalization of adaptability. Here, the importance of organizational change capabilities is emphasized. Montreuil and Supriharyanti describe these as dynamic organizational capabilities or "meta-capabilities" [26, p. 47] that allow organizations to facilitate permanent changes [27, pp. 1188–1189] in a highly dynamic environment. Teece introduces the concept of dynamic capabilities (DC), while Leeman & Kanbach further organize the DC concept into a taxonomy [28]. Kodama expands the DC concept with the idea of strategic collaboration [29]. Carvalho and Wenzel emphasize that dynamic capabilities can be based on stable routines and improvisation [30, p. 14] and

recommend considering the dynamics within the dynamic capabilities [31].

Finally, at the end of chapter 2, the researcher uncovers a research gap.

With regards to organizational change capabilities Supriharyanti and Sukoco state that “further research should conduct longitudinal research related to the process of building change capabilities that rest from one point in time to the next.” [26, p. 63]. Also Voica and Stanci see in their research on capabilities for organizational change in connection with the dynamic capabilities, value in future studies on “further routines that would lead to the enrichment of organizational change initiatives” [32, p. 51]. Talaja notes the lack of survey-based empirical work regarding the research on OCC [33, p. 12] stating that “future research could collect data from multiple respondents” resulting in qualitative analysis that “could potentially go beyond hypothesized relationships and discover underlying influences” [33, p. 13]. She further refers to a possible influencing role of organizational culture as an effective mediator for innovation and adaptability [33, p. 10]. Research in this context is however still in its early stages [27, p. 1192]. Mendoza and Palaez state in their research on organizational adaptability that “adaptability as an important construct” in today’s turbulent times “has not received the attention required” [21].

Thus, this work aims to identify the factors that facilitate the development of adaptability in company organizations operating in rapid changing environments, see figure 1. To deepen the understanding based on empirical research results, this study addresses the central research question by conducting a field study in a specific company context.

**Chapter 3 -Field research-** describes the research design that the author uses to explore answers to his central research question. The first subchapter presents a four-stage research methodology that serves to identify suitable objects for study. These objects will be those most likely to recognize the need for change and develop or reinvent ideas for successful adaptation.

Firstly, to identify market environments that are facing turbulence, this four-stage research methodology draws on the concept of megatrends. The German Zukunftsinstitut<sup>2</sup> defines megatrends “as complex main global change dynamics...the biggest drivers of change in business and society and are shaping our future..., ...multilayered and full of opposing streams...Global phenomena” [35] which name and describe complex change dynamics and affect all levels of society, thus influencing companies, institutions, and individuals [36]. Megatrends represent market environments characterized by turbulence, complexity, and rapid change. This work assumes that companies operating in megatrends must continually adapt to and effectively manage rapid changes to ensure their survival.

Secondly, the shaping parameters of the market in which the research object operates should not yet be fixed. The market should be characterized by rapid changes and uncertainty.

Thirdly, companies should operate in accelerating markets, which requires from companies to constantly sense their market environments which is about “identification and assessment of an opportunity” [37, p. 1396] and includes “scanning, creation, learning, and interpretive activities [38, p. 1322] and may eventually lead them to transform their sensing activities into actions that build up new or reconfigure existing “internal and external resources/competences” [37, p. 1395] in order to survive and thrive in rapidly changing market conditions. Finally, the research object should be a pure play company, focusing

<sup>2</sup> The German-Austrian Zukunftsinstitut consists of a team of researchers who conduct empirical and interdisciplinary research using evidence-based methods aimed at decoding long-term trends and exploring future developments through contextualized analyses [34].

exclusively on a particular activity or product since this means such a research object would be highly dependent on the development on its markets' trends which can mean immediate opportunities or threats to which a company needs to respond to. The adaptations, in turn, can have a direct and significant impact on the pure play company. In this context, this research assumes a relationship between a pure play company's ability to adapt and resulting success or failure. Therefore, the idea is that this will allow for clearer conclusions to be drawn about the approaches of the business organization under study in relation to adaptability. In the second subchapter, this four-stage research funnel is applied to find a suitable field research object and as a result identifies a carve-out of the major European utility, Eon, based in Germany. The carve-out, Eon Drive Infrastructure (EDRI) operates as a Charge Point Operator (CPO) in seven European countries. EDRI focuses on the construction and operation of charging stations for its business customers and currently operates more than 5.000 charging stations in Europe [39, p. 1]. It is affected by strong uncertainty regarding both the construction and operation of the charging stations and their long-term economic viability which requires, in addition to various other factors (f.e. financial resilience), above all adaptability.

The third subchapter presents a research design to be applied in the field. Three characteristics are central to this research design: Firstly, openness - it is assumed that the business actors involved will develop new ideas to successfully navigate their organization through today's dynamic environments. Secondly, the mixed-methods design, which includes qualitative research to reconstruct meanings or subjective perspectives [40, p. 21], followed by quantitative research to answer questions about causality, generalizability or magnitude of effect [41, p. 5]. Thirdly, the use of case study research, which is particularly useful for investigating complex organizational contexts [42, p. 10].

**Chapter 4 -Qualitative results from field research-** presents the results of the qualitative research and identifies organizational factors that can facilitate adaptability, thus providing initial answers to the central research question. This work summarizes the factors identified in the field using the term "organizational DNA", which is inspired by the idea of a "company DNA" from the CEO of the company studied. This "organizational DNA" consists of a purposefully orchestrated diversity of employees and the company's guiding principle "Love-Trust-Do", which anchors adaptability across the international company organization.

The first subchapter presents the identified types of diversity that are deliberately orchestrated by the company: Young and Senior, Domain expertise and management expertise, corporate experience and independent mindsets, entrepreneurial experience see table 1.

Table 1 Types of diversity identified [43, p. 12]

Quote from	Description of diversity sourcing (quote level)	Characteristic	Type of diversity
CEO	It's a couple of elements: Young and senior, you see that here. You've a couple of young people which are thriving, doing great things but you also need some more senior people, you know to have that balanced off. So, that is one key element you see over here is what you see in the mixture is young vs senior.	Age	Young and Senior
CFO	I think it's quite a mixture of also just people that have a very long standing experience, are very much experts in their area but also just a lot of young people who bring a lot of, kind of new ideas into it and are willing to also just go a new path and take new ways basically that which are not told in the past that you've done if you've already been working like in an organization for the last 15 years and I think that brings together I think quite a good mixture of people who really can push the business forward.	Age	
CEO	- He is very good in processes, he knows everything in processes - ..domain expert, he is the Wikipedia. If you wanna know anything about this business ask him, this is domain knowledge. -So, you walk around you will see a couple of people which are really domain experts because you can't operate in a market if you don't know anything about the market. If I wanna know:" Hey, how is the charger? I wanna be able to go walk to somebody and say:" Listen, how does the charger work?" So, you need domain expertise.	Domain Expertise	Domain expertise and management expertise
CEO	"You also need managers who know how to manage. So, that's another element which is very key for me where I find a balance into it. So, you have domain experts and you managers".	Management Expertise	
CFO	I think one thing is, I think it's a mix really of people who are from the mother company with a background in the mother company because finally a spin-off basically but also people coming from elsewhere, not having a kind of the mother company background.	Corporate network	Corporate Experience and Independent mindset and experience
CFO	And as we are generally an organisation who wants to be stand alone...it's also important to have people that don't have that background and don't kind of also may be feel tied to the mother company and also question why for instance we should favor the mother company over some other supplier at the end of the day.	Independent mindset and experience	
CEO	-...Although we are arms length we have an own company, we wanna use them, like for their customers...So, that corporate experience is very important because we are part of it, although we are arms length." - It's the real network into it but the other element is also very important, don't forget that. How do we keep the corporate far away from us...and that's why that corporate experience is so important because we couldn't do that if we didn't have that experience" - We call it arms length. So, it really needs to be arms length and loosely coupled with and protected the people"	Corporate network Corporate experience	
COO	-We need to know how a corporate function works - And I think, I fully agree, very important that we do that and separate ourselves from the corporate without losing the connection	Corporate Experience	
COO	- ...don't underestimate that factor. So, dealing with decision making in uncertain environment, dealing with the feeling of "it's our money that we are investing, it's my company" and the ownership and the feeling that is behind that. - ...especially in a scale-up that we are that you have somebody with that entrepreneurial experience. - There you have the entrepreneurship, to inspire people, to be able to stand in the spotlight and everyone wants to work with him and wants to follow because of his way of doing things...to connect to partners, to connect to customers. When customer conversations become very difficult we him in andhe breaks it open somehow. Because of his way of doing things and connecting to people...	Entrepreneurial Experience	Entrepreneurial Experience

This strategic orchestration of staff diversity can both support adaptability and lead to a company orchestration that is of value, rare, difficult to imitate and difficult to substitute [44, pp. 106–108].

The second subchapter presents another critical factor that supports the organization successfully adapt to its dynamic market environment: The company's guiding principle of Love-Trust-Do. This mantra consists of three core components that not only serve as a company slogan or cultural description, but also infuse all levels of the organization to foster flexibility and speed of adaptation. In the theory-generating expert interviews, this research uncovered an underlying understanding and concept for each of the three variables. These underlying concepts for Love-Trust- Do are presented in this subsection.

The combination of diversity and Love-Trust-Do ultimately creates a mechanism that not only enables short-term change, but rather a sustainable ability to transform “by mobilizing and making the most of its capabilities”[27, p. 1188].

**Chapter 5 -Quantitative results from field research-** transfers the findings on Love-Trust-Do into hypotheses that are analyzed using quantitative research methods. To this end, the

qualitative results of the field study were transferred into hypotheses that addressed the understanding of Love-Trust-Do and how Love-Trust-Do is lived in the company. In addition to these hypotheses, further information was collected, such as age, gender and position. This additional information was related to the hypotheses as independent variables.

The qualitative research resulted in the assumption that the concept of Love-Trust-Do is an enabler for the adaptability of the company organization. This assumption was examined as well in the quantitative part by five hypotheses:

- A\_1: At EDRI everyone scans the market environments and makes sure EDRI is aware of developments
- A\_2: If market changes require EDRI to adapt, it will effectively adapt with the needed speed
- A\_3: Love, Trust, Do help EDRI's to fast adapt to changing market conditions
- A\_4: The EDRI organization can act faster than competitors
- A\_5: The EDRI organization can adapt faster to changes than competitors

An employee survey was used to investigate how employees understand and live-up to the identified Love-Trust-Do principle. All hypotheses were evaluated through an employee survey and finally statistically analyzed. For the statistical analysis the work used Boxplot analysis, Bartlett's test and Pairwise t-tests for the categorical variables. For more than two groups it followed the ANOVA (analysis of variances) model to examine whether there are significant differences between the means of three or more independent groups based on a common continuous dependent variable. ANOVA uses F-tests to assess whether the means vary significantly between groups, with p-values to determine statistical significance. For continuous variables this analysis used multiple linear regression analysis where the P-values were considered as the following:

- **P-Value** < Alpha (0,05): Reject the null hypothesis
- Alpha (0,05) > **P-Value** < 1-Alpha: No reason to reject the null hypothesis
- 1-Alpha < **P-Value**: Sustain the null hypothesis (i.e. no relationship between studied variables)

The statistical analysis pursued two main objectives. Firstly, it analyzed the relationships between the variables to identify the most influential ones and reduce the number of variables for further testing accordingly. Secondly, it tested the hypotheses to determine which can be supported by the data.

The statistics for Love showed that the survey participants know and share the purpose of their organization (L\_3 and L\_4) and are committed to their work (L\_2) which in turn can be attributed to EDRI's definition of Love (L\_7), see figure 2. Additionally, it can be observed that the way EDRI defines and lives "Love" fosters an employee's commitment to her/his job (L\_7) which is closely connected with everyone's purpose where Love bases on (L\_6).

Observation no.	Variable (% agree in survey)	Estimate*	Coefficient of determination*	Variable (% agree in survey)
3	L_7 (The way EDRI defines and lives "Love" fosters an employee's commitment to her/his job; 64%)	(1,4) (0,77)	0,8052	L_2 (You are strongly committed to your job, 99%) L_6 (EDRI's definition of love is based on everyone's purpose; 56%)
3	L_6 (EDRI's definition of love is based on everyone's purpose; 56%)	(0,76)	0,76	L_7 (The way EDRI defines and lives "Love" fosters an employee's commitment to her/his job; 64%)
	L_5 (Everyone at EDRI loves the job they do; 78%)	(0,52)	0,4431	L_7 (The way EDRI defines and lives "Love" fosters an employee's commitment to her/his job; 64%)
1	L_4 (You share the purpose of your organization; 93%)	(0,9268)	0,9482	L_3 (You know the purpose of your organization; 99%)
1	L_3 (You know the purpose of your organization; 99%)	(1,027)	0,9482	L_4 (You share the purpose of your organization; 93%)
2	L_2 (You are strongly committed to your job; 99%)	(1,08)	0,5511	L_7 (The way EDRI defines and lives "Love" fosters an employee's commitment to her/his job; 64%)
	L_1 (You do your job because of a personal purpose; 78%)	(1,00)	0,5625	L_6 (EDRI's definition of love is based on everyone's purpose; 56%)

\*Coefficient of determination (Adjusted R-Squared): Measures „how well the model fits the data“ (Applied Linear Regression for Business Analytics with R, 2023, p. 36)  
\*Estimate: Represents the influence of each independent variable on the dependent variable

Figure 2 Summary of the main observations for Love

In summary, it can be concluded that the participants see EDRI's definition of Love as a central driver for their staff's love and commitment to their job.

The main finding for Trust is that it creates responsibility, see figure 3: It can be observed that, based on EDRI's definition of trust that includes trust in the coworkers' best purpose and efforts (T\_6) transparency can support trust (T\_11). EDRI's definition of trust (T\_6) significantly supports trust through transparency (T\_6) as demonstrated by their linear relationship. This transparency then supports responsibility (T\_12). The survey participants confirmed by 100% that „Trust creates responsibility“ (T\_12). Additionally, the results show that the participants' trust in their co-workers to act in best purpose and efforts (T\_1) supports the trust in co-workers to transparently share failures (T\_4) and that the participants' trust in their co-workers to judge best possible (T\_2) supports the trust in co-workers to produce the required results (T\_3), see figure 3.

Observation no.	Variable (% agree in survey)	Estimate*	Coefficient of determination*	Variable (% agree in survey)
2	T_4 (You trust in your co-workers to share failures to learn; 85%)	(0,9355)	0,8969	T_1 (You trust in your co-workers to act in best purpose and efforts, 93%)
3	T_3 (You trust in your co-workers to be able to produce required results, 72%)	(0,8667)	0,8937	T_2 (You trust in your co-workers to judge best possible; 85%)
1	T_12 (Trust creates responsibility; 100%)	(0,97561)	0,8782	T_11 (Trust is supported by transparency, 93%)
1	T_11 (Trust is supported by transparency, 93%)	(1,00)	0,8247	T_6 (EDRI's definition of trust consists of trust in co-workers to act in best purpose and efforts, 85%)
	T_1 (You trust in your co-workers to act in best purpose and efforts, 93%)	(0,036434)	0,8154	Ag Age
4	T_2 (You trust in your co-workers to judge best possible; 85%)	(0,036434)	0,7559	Ag Age
	T_10 (You trust in your co-workers because of their domain expertise; 92%)	(0,033817)	0,8207	Ag Age

\*Coefficient of determination (Adjusted R-Squared): Measures „how well the model fits the data“ (Applied Linear Regression for Business Analytics with R, 2023, p. 36)  
\*Estimate: Represents the influence of each independent variable on the dependent variable

Figure 3 Summary of the main observations for Trust



Finally, it could be found that the diversity factor age is an influencing factor for trust, see figure 3.

For Do, it could be observed that employees take responsibility to address opportunities (D\_2) and to lead their projects to success (D\_1), see figure 4. As a result, the participants believe that they decide and act fast (D\_3), supporting EDRI to generate the necessary speed of adaptation (D\_6), which they believe is even higher than the speed of the competition (D\_7).

Observation no.	Variable (% agree in survey)	Estimate*	Coefficient of determination*	Variable (% agree in survey)
1	D_1 (You take responsibility for the success of projects in your field of work; 100%)	(1,0976)	0,9267	D_2 (When you discover a new challenge or opportunity, you make sure the subject is taken care of, 100%)
1	D_2 (When you discover a new challenge or opportunity, you make sure the subject is taken care of, 100%)	(0,84906)	0,9267	D_1 (You take responsibility for the success of projects in your field of work, 100%)
2	D_3 (You decide and act fast; 100%)	(0,97561)	0,8782	D_2 (When you discover a new challenge or opportunity, you make sure the subject is taken care of, 100%)
2	D_4 (You act aligned with your management and co-workers; 100%)	(0,95122)	0,8975	D_2 (When you discover a new challenge or opportunity, you make sure the subject is taken care of, 100%)
	D_5 (EDRI stands out for its do-mentality; 93%)	(0,61538) (0,43590)	0,9766	D_6 (A result of EDRI's do-mentality is EDRI's enhanced speed, 85%) D_8 (EDRI's leaders are living EDRI's definition of do by example, 78%)
3	D_6 (A result of EDRI's do-mentality is EDRI's enhanced speed, 85%)	(0,90625)	0,9336	D_5 (EDRI stands out for its do-mentality; 93%)
3	D_7 (Compared to other companies of EDRI's size and in the same industry, decisions are made faster at EDRI; 78%)	(0,71875)	0,8132	D_5 (EDRI stands out for its do-mentality; 93%)
3	D_8 (EDRI's leaders are living EDRI's definition of do by example; 78%)	(0,96875)	0,9031	D_5 (EDRI stands out for its do-mentality; 93%)

\*Coefficient of determination (Adjusted R-Squared): Measures „how well the model fits the data“ (Applied Linear Regression for Business Analytics with R, 2023, p. 36)  
\*Estimate: Represents the influence of each independent variable on the dependent variable

Figure 4 Summary of the main observations for Do

Moreover, the interconnections between Love-Trust-Do were analyzed in the following subchapter. Trust was found to be a central element in employees' commitment to their work and their willingness to take ownership and action. The Do-element willingness to take responsibility for new subjects in case of newly discovered threats or opportunities, was also an important element in this context. Finally, this chapter presented the results of the statistical analysis on the assumptions of adaptability that emerged from the qualitative research and found that, in the eyes of the employees, EDRI actively scans its market environments and adapts to market changes with the necessary speed. The extent to which this speed of adaptation, generated by Love-Trust-Do, is perceived to be faster than the competition needs to be investigated further. Although there are indications that this is the case, the background for inverse correlation in the interaction of some variables needs to be further researched in detail.

**Chapter 6 -Connected results-** synthesizes the results of the qualitative and quantitative research. For Love it can be noted that EDRI's concept of Love fosters the employees' active engagement. For Trust, the interviewed experts highlighted their intend to empower EDRI's staff to take responsibility which could be confirmed by the survey participants in the quantitative part. With regards to the company's idea of Do it can be noted that the employees support EDRI's idea of a „Do-mentality“ and take responsibility for emerging challenges. As discussed in the literature review speed is a critical organizational aspect for adaptability. The field research shows that especially through the company's concepts of Trust and Do it can generate needed speed.

With regard to the operationalization of adaptability this chapter summarizes the qualitative and quantitative findings which show that adaptability is operationalized through active sensing, seizing and final adaptation. Although no formal sensing process could be identified, the interviews showed that the company encourages active sensing and the sharing of observations. Six out of seven experts surveyed in the individual interviews explained how the entire workforce closely monitors market developments. Both the top management and the management level below confirmed that this task is performed by all employees on the one hand and that it involves dialogue with network partners on the other, which in turn leads to hard-to-replicate corporate capabilities [29, p. 4]. Additionally, the research further examined these observations about sensing in the quantitative section. 100 % of the participants confirmed that “At EDRI everyone scans the market environments and makes sure EDRI is aware of developments”. Moreover, in the qualitative part, it was examined how the company converts this information into usable knowledge and how it designs answers (Mendoza & Peláez, 2021; Kaur & Mehta, 2016, p. 8) through established routines and as part of everyday activities [31] in which opportunities are seized in the context of strategic priorities [45, p. 119] and, if necessary through improvisation [30, p. 14]. So, based on the qualitative results it can be assumed that the Love-Trust-Do concept fosters adaptability. This assumption, that Love-Trust-Do are indeed factors that foster adaptability, could be confirmed in the quantitative part. The surveyed staff is convinced of EDRI's adaptability. Additionally, it can be noted that the staff believes in Love-Trust-Do as a central support for fast adaptation. Furthermore, the quantitative results indicate that EDRI, in view of its employees, can adapt faster than its competitors. However, some opposing dependencies in the statistical models still present an ambiguous picture that requires further research. In summary, the research confirms that Love-Trust-Do fosters EDRI's adaptability, see figure 5.

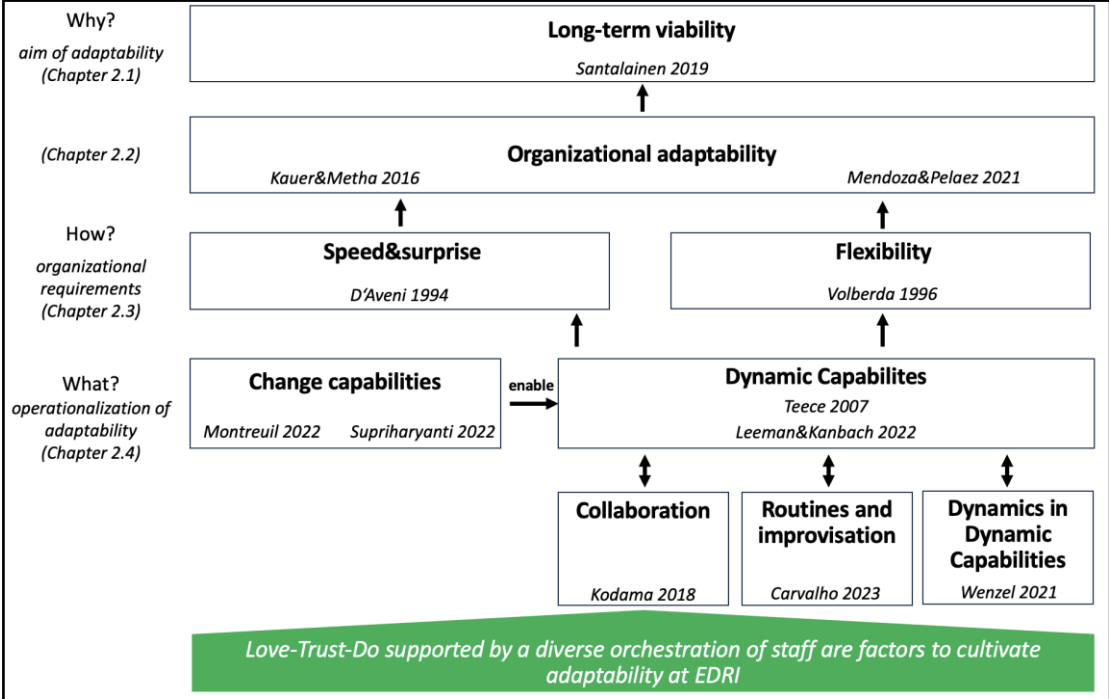


Figure 5 Factors to cultivate adaptability at EDRI

The synthesis of qualitative and quantitative results further indicates that EDRI not only achieves short-term adaptability through the factors analyzed, but rather builds up a sustainable adaptability [27, p. 1188].

The second chapter highlights a crucial factor for adaptability, the role of Trust.

A crucial role for empowering the staff, creating adaptability and speed can be assigned to the variable of Trust, see figure 6.

Even if argued from a differentiated perspective, Montreuil's analysis converges with the findings of this research with regard to the essential role that a climate of trust plays as the basis to manage all types of change [27, p. 1188]. This convergence underlines the validity of both findings with regards to the role of trust.

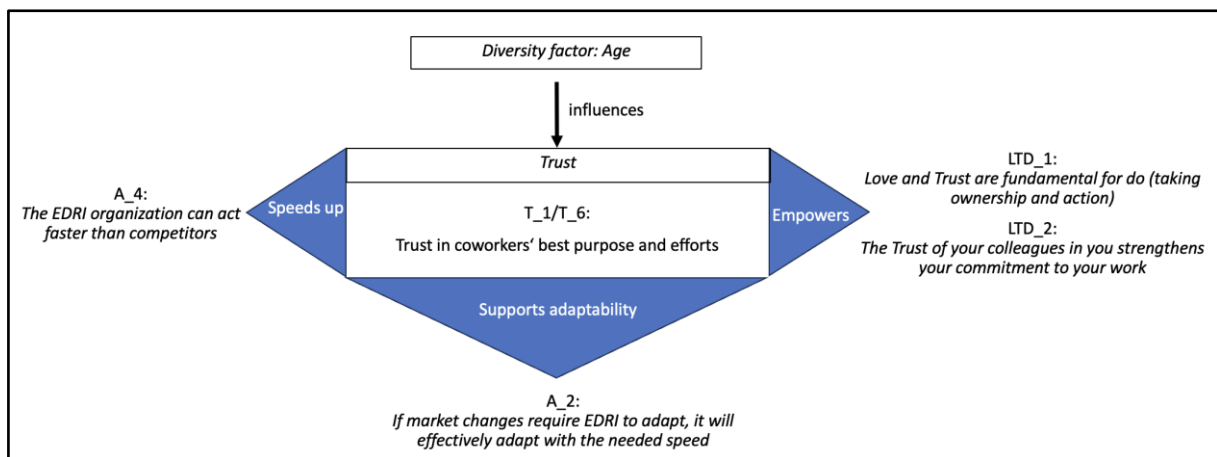


Figure 6 Trust, a key factor for speed and adaptation (from the perspective of EDRI's staff)

The quantitative results show that in the employees' point of view trust plays a significant role in taking ownership (LTD\_1; coefficient of determination of 0,9018 with Estimate of T\_6=0,7829) and decisively influences the employees' commitment (LTD\_2; coefficient of determination of 0,9513 with Estimate of T\_6=0,6382). It can therefore be indicated that in the view of EDRI's staff Trust empowers, see figure 6. Furthermore, a decisive influence of Trust on the perceived speed of action by the employees can also be observed, (see A\_4, figure 6). Even if the influence of some variables needs to be researched in more detail it can be stated that Trust has the strongest influence on the company's perceived speed of action, with a total Estimate of 0,52053. For completeness, it is worth noting that the variables T\_1 and T\_6 differ only in the way they assess Trust: While T\_6 asks whether EDRI's definition of Trust includes trust in co-workers to act in best purpose and efforts, T\_1 measures the respondents' actual trust in their co-workers' best purpose and efforts. Regarding the question on T\_6, 85% of the participants confirm their understanding of EDRI's idea of Trust, for T\_1, 93% of the participants express their trust in their co-workers. Furthermore, the analysis of the relationship between the two variables indicates a significant linear relationship. Therefore, it can be assumed that this form of Trust is not only understood as one of EDRI's core ideas of Trust but is also actively practiced. Ultimately, it can be observed that company's idea of Trust significantly influences the company's adaptability (A\_2; coefficient of determination of 0,8539 with Estimate of T\_6=0,63889). Finally, it was discovered that the diversity factor age has a significant influence on the company's idea of Trust.

**Chapter 7 -Discussion-** concludes by examining how adaptability can be measured in organizations and to what extent it can strengthen sustainable success. By discussing the impact of the identified factors, diversity and Love-Trust-Do, this chapter begins by looking at the factors' influence on risk management. Referring to the scholars Bockius and Gatzert the thesis notes that diversity is an important factor to improve the organizational risk culture through "diverse perspectives within the organization" [46, p. 10].

Further this chapter discusses that “adaptability is related to act in the future”[21] and past “is a problem for adapting because mental models, identity (culture) and consistence brakes the adaptation process” [21]. So, this work notices that this risk of relying too much on past experiences and thus hindering innovation is mitigated by the company’s purposeful orchestration of diversity, especially by hiring employees with "independent mindsets" (one of the diversity criteria) and also by the identified Love-Trust-Do mantra which unfolds its impact across the international organization and drives a culture in which employees take ownership, proactively seize opportunities, address risks in their dynamic working environment and so continuously transform their organization, rather than staying frightened, freezing and losing the game [15, p. 10]. Love-Trust-Do can not only be seen as a factor that fosters adaptability but can also enable the necessary speed of adaptation. On the one hand, this can help the company to seize opportunities quickly and, on the other, provide a lever for improving the organizational risk culture through increasing responsiveness to changing and emerging risks [46, p. 11]. Additionally, organizational risk culture requires accountability [46, p. 5] of employees which is also strengthened within the company through Love-Trust-Do. Finally with regards to risks management, the hypothesis can be raised that the company organization is constantly evolving through its diversity and Love-Trust-Do, thereby counteracting the risk of organizational inertia which is seen as a risk for maladaptation due to being bound to old structures and patterns [47, p. 43].

The thesis sees in the establishment of an effective opportunity and risk culture and the prevention of organizational inertia just two effects of the examined adaptability that can ensure the long-term viability of the company and notes that the effects of an adaptive company organization can be even more diverse. To illustrate and measure possible effects, the thesis uses a strategy map, see figure 7. In their research on agile strategy management using Balanced Scorecards, Wiraeus and Creelman argue that organizational culture is perhaps the strongest driver of change and that the Balanced Scorecard system itself can be part of an effective framework for promoting cultural change [48, p. 214]. So, this work incorporates this idea and examines EDRI’s strategy from the perspective of the strategy map by supporting EDRI in achieving its objectives through fostering its organizational adaptability. Figure 7 combines EDRI’s strategic objectives with the view on performance through adaptability.

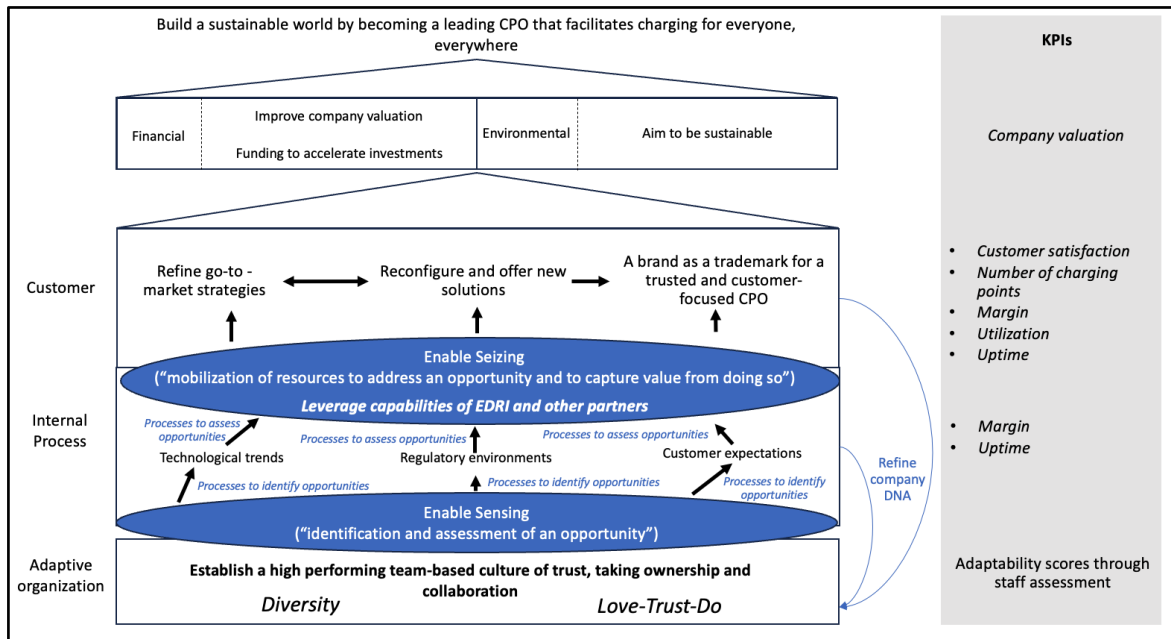


Figure 7 Strategy Map for EDRI with an "adaptive organization" perspective (modified and adjusted from [48, pp. 214, 246])

As EDRI can be characterized as an early-stage start-up company [49, p. 85], it can be observed that its goals are rather focused on revenue growth. The company has expanded its activities into new European markets, so it is crucial that the organization senses, seizes and transforms opportunities across borders. With regards to the DCs it can be noted that "literature shows that DCs have benefited firms by improving stock market returns" [47, p. 46]. Even if it is difficult, probably impossible, to scientifically prove direct cause-and-effect relationships between adaptability and company performance, this finding from Sunder indicates a correlation between the adaptability of the company and the increase in the company valuation which can be seen as one important objective for EDRI.

To ensure long-term viability through adaptability, it is important that the company adapts its activities at all levels, including a continuous refinement of its company-DNA (diversity and Love-Trust-Do). To measure the impact of the organization's adaptability, the KPIs used by EDRI can be compared in a baseline measurement with new measurements in future research, see figure 7.

**Chapter 8 -Conclusion, personal contribution, and future research-** summarizes the work and contributions made by the author and provides an outlook for possible future research.

This research developed a case study to identify factors crucial to fostering adaptability in organizations. With regards to possible future research it should be noted, however, that in addition to providing a valuable theoretical contribution, this work provides a single case field study with a limited sample for quantitative analysis. Consequently, this allows only limited conclusions about the generalizability of the phenomena investigated. Further in-depth research should, on the one hand, address the open questions arising from the statistics. These include:

- The examination of the hypothesis "Love and Trust are fundamental for do (taking ownership and action)" showed that in the interaction of the predictor variables L\_3 inversely influences the hypothesis, see chapter 5.4.1

- A similar observation was made with regards to the examination of the hypothesis "The EDRI organization can act faster than competitors" where the predictor variables L\_3 and T\_5 showed an inverse influence on the hypothesis, see chapter 5.5.4.
- Also with regards to the examination of hypothesis "The EDRI organization can adapt faster to changes than competitors" it could be observed that T\_1 and T\_10 inversely influenced the hypothesis, see chapter 5.5.5

The reasons behind these negatively influencing factors should be investigated in future research.

Furthermore, subsequent research in the company should validate the results of this study and examine the extent to which they apply to the entire company organization. A first step of such a future investigation could involve a comprehensive quantitative survey of the entire workforce to examine whether these inverse influences of the variables can also be confirmed throughout the company. If this is the case, subsequent qualitative research could be conducted, for example through additional in-depth interviews, in order to explore the causes and contexts of these influences in more detail. This could also include the question of subcultures regarding Love-Trust-Do in established country units and, above all, explore how the idea of Love-Trust-Do itself changes as the company grows.

Another vital research contribution would be to examine the transferability of these research results. Such a comparative study could build on the already confirmed hypotheses regarding the orchestration of diversity and the Love-Trust-Do concept in the research object. Future research could explore whether similar or divergent factors can be identified in the comparators and to what extent these identified factors generate performance through resulting adaptability.

To this end, the study design could be extended to a mixed-method multiple-case study design [50, pp. 116–121]. However, fundamental questions regarding the research design would first have to be answered. For example, the extent to which additional expert interviews are required in order to verify transferability, for example, other companies could use similar concepts to Love-Trust-Do but name them differently. Alternatively, a survey using standardized questionnaires could provide the required informative value. These considerations also have implications for the resources required.

In order to ensure comparability, criteria would first have to be defined to determine whether the companies can be compared with each other. Potential comparison factors could be the age of the company, the size of the company in terms of the number of employees and the number of charging stations managed, as well as the geographical coverage of different countries.

Following the internal validation of the research findings, another approach could involve identifying comparable companies that do not foster adaptability through the factors investigated. This comparative study could then analyze the long-term effects of adaptability, assessed with the help of the strategy map.

In the last sub-chapter of chapter 8 the thesis summarizes its key contributions:

1. **Research gap and theoretical foundation:** A comprehensive literature review was conducted to systematize and evaluate existing knowledge on the organizational capabilities required to succeed in turbulent market environments. This thorough analysis revealed a significant research gap, from which the author derived his research question. This research question specifically addresses the needed factors to facilitate capabilities organizations need to adapt to rapidly changing environments.
2. **Development and application of a research funnel:** The author developed a science-based research funnel that represents a methodological innovation. This funnel was specifically designed to identify relevant companies for field research that potentially develop approaches to adapt to dynamic markets. The application of this funnel allowed to pursue the research objectives in a targeted and efficient way and can serve as a model for future studies in similar research fields.
3. **Innovative combination and explorative application of proven methods:** A central scientific contribution of this work is the innovative combination and explorative application of proven qualitative and quantitative research methods. This combination of methods enabled a comprehensive investigation of the complex phenomenon of adaptability in a company organization. The qualitative research provided in-depth insights into the subjective perspectives and experiences of organizational members. Additionally, in collaboration with Prof. Negrea, Department of Mathematics at the University of Politehnica Timisoara, this work applied statistical methods to quantify and validate the findings from qualitative research. In summary, this methodological synergy enhanced the understanding of the factors that foster adaptability and their operational implementation in a real business environment.
4. **Empirical results from the combined research methodology:** Significant empirical results were achieved by applying the developed research funnel and the innovative combination of methods. These results are of practical benefit to the company studied, as they reveal specific approaches for fostering organizational adaptability. They also contribute to closing the previously identified research gap by providing new insights into the factors that drive adaptability in turbulent market environments. These results therefore not only support the strategic development of the company studied, but also enrich the academic discussion on organizational dynamics and the ability to sustainably adapt.
5. **Strategy map for measuring adaptability:** A strategy map was developed as a practical tool that can support researchers and company stakeholders to assess the effects of adaptability within the company. Processes can be identified across the various levels and connected with the strategic objectives of the organization.
6. **Impetus for future research:** Future research directions were developed from the results of the work. These include both theoretical and methodological suggestions that aim to further deepen the understanding of organizational adaptability and to test and refine the developed models and frameworks in other contexts. The proposed research questions open up new paths for the scientific examination of organizational adaptability and its influence on corporate success.

Finally, the researcher contributed to the scientific community with following publications:

### **Scientific papers published in ISI indexed journals**

1. Cultivating Design Thinking for Sustainable Business Transformation in a VUCA World: Insights from a German Case Study, Sustainability 2024  
<https://doi.org/10.3390/su16062447>
2. Unraveling Successful Company Organizations: A Research Design to Explore Strategies for Thriving Amid Market Turbulence, Administrative Sciences, 2023  
<https://doi.org/10.3390/admsci13090204>

### **Scientific papers published in volumes of scientific events (Proceedings) indexed BDI**

3. How to Improve with a Strategic Lead Management: The Go-to-Market of Innovative Energy Solutions—Case Energy Industry, Springer, Wiesbaden, 2021  
[http://dx.doi.org/10.1007/978-3-030-54292-4\\_25](http://dx.doi.org/10.1007/978-3-030-54292-4_25)
4. Strategisches Leadmanagement zur optimierten Vermarktung – Das Vorgehen von innogy bei innovativen Energielösungen, Springer, Wiesbaden, 2021  
[http://dx.doi.org/10.1007/978-3-658-31651-8\\_26](http://dx.doi.org/10.1007/978-3-658-31651-8_26)
5. Conference paper: VUCA and Its Impact on Business Organizations, SIM Conference 2021, Springer, Cham, 2024  
<https://doi.org/10.1007/978-3-031-47164-3>



## REFERENCES

- [1] R. Masera, 'Web 1.0, 2.0, 3.0; InfoSphere; Metaverse: An Overview. Monetary, Financial, Societal and Geopolitical Transformation Cusps'. Rochester, NY, Jan. 14, 2023. doi: 10.2139/ssrn.4337362.
- [2] M. Harwardt and A. M. Schmutte, 'Die Welt verändert sich rapide – „Industrie 4.0“ und die digitale Transformation', in *Führen und Managen in der digitalen Transformation: Trends, Best Practices und Herausforderungen*, M. Harwardt, P. F.-J. Niermann, A. M. Schmutte, and A. Steuernagel, Eds., Wiesbaden: Springer Fachmedien, 2020, pp. 3–15. doi: 10.1007/978-3-658-28670-5\_1.
- [3] Apple, 'Press release: Apple erfindet mit dem iPhone das Mobiltelefon neu', Apple Newsroom (Deutschland). Accessed: Feb. 20, 2024. [Online]. Available: <https://www.apple.com/de/newsroom/2007/01/09Apple-Reinvents-the-Phone-with-iPhone/>
- [4] B. Vogel-Heuser and K. Bengler, 'Von Industrie 4.0 zu Industrie 5.0 – Idee, Konzept und Wahrnehmung', *HMD*, vol. 60, no. 6, pp. 1124–1142, Dec. 2023, doi: 10.1365/s40702-023-01002-x.
- [5] 'Wissenswertes zu 5G', Informationszentrum-Mobilfunk. Accessed: Feb. 19, 2024. [Online]. Available: <https://www.informationszentrum-mobilfunk.de/informationszentrum-mobilfunk/technik/funktionsweise/5g/>
- [6] T. Jahn, 'ChatGPT: Was Sie über OpenAIs KI wissen sollten'. Accessed: Feb. 19, 2024. [Online]. Available: <https://www.handelsblatt.com/technik/it-internet/chatgpt-was-sie-ueber-openais-ki-wissen-sollten-/28941524.html>
- [7] Destatis, 'EU und Eurozone im Zeitverlauf - Statistisches Bundesamt'. Accessed: Feb. 19, 2024. [Online]. Available: [https://www.destatis.de/Europa/DE/Staat/EU-Staaten/\\_EU\\_EZ\\_Zeitverlauf.html](https://www.destatis.de/Europa/DE/Staat/EU-Staaten/_EU_EZ_Zeitverlauf.html)
- [8] European Council, 'Timeline - The EU-UK withdrawal agreement'. Accessed: Feb. 20, 2024. [Online]. Available: <https://www.consilium.europa.eu/en/policies/eu-relations-with-the-united-kingdom/the-eu-uk-withdrawal-agreement/timeline-eu-uk-withdrawal-agreement/>
- [9] J. Turner, 'Why did the global financial crisis of 2007-09 happen?', Economics Observatory. Accessed: Feb. 20, 2024. [Online]. Available: <https://www.economicsobservatory.com/why-did-the-global-financial-crisis-of-2007-09-happen>
- [10] United Nations, 'THE 17 GOALS | Sustainable Development'. Accessed: Dec. 04, 2023. [Online]. Available: <https://sdgs.un.org/goals#history>
- [11] LENG, Jiewu *et al.*, 'Industry 5.0 : Prospect and retrospect', *Journal of Manufacturing Systems*, no. 65, pp. 279–295, Oct. 2022, doi: DOI 10.1016/j.jmsy.2022.09.017.
- [12] European Union, 'The European Green Deal', An official website of the European Union. Accessed: Oct. 15, 2020. [Online]. Available: [https://ec.europa.eu/commission/presscorner/detail/e%20n/ip\\_19\\_6691](https://ec.europa.eu/commission/presscorner/detail/e%20n/ip_19_6691)
- [13] McKinsey Company, 'McKinsey Quartely: Strategy through turbulence: An interview with Don Sull', Dec. 2009, [Online]. Available: <https://www.mckinsey.com/~media/McKinsey/Featured%20Insights/Managing%20In%20Uncertainty/Strategy%20through%20turbulence%20An%20interview%20with%20Don%20Sull/Strategy%20through%20turbulence%20An%20interview%20with%20Don%20Sull.pdf>
- [14] S.-M. Seiderer and H.-J. Gergs, 'Erneuerungsfähige Unternehmen: Welche Kompetenzen zählen und wie sich Organisationen damit für die digitale Transformation rüsten', *Gr Interakt Org*, vol. 54, no. 2, pp. 143–153, Jun. 2023, doi: 10.1007/s11612-

023-00690-9.

- [15] B. Johansen and J. Euchner, 'Navigating the VUCA World', *Research-Technology Management*, vol. 56, no. 1, pp. 10–15, Jan. 2013, doi: 10.5437/08956308X5601003.
- [16] A.-I. Munteanu, N. Bibu, M. Nastase, N. Cristache, and C. Matis, 'Analysis of Practices to Increase the Workforce Agility and to Develop a Sustainable and Competitive Business', *Sustainability*, vol. 12, no. 9, Art. no. 9, Jan. 2020, doi: 10.3390/su12093545.
- [17] S. S. Nandram and P. K. Bindlish, Eds., *Managing VUCA Through Integrative Self-Management*. in Management for Professionals. Cham: Springer International Publishing, 2017. doi: 10.1007/978-3-319-52231-9.
- [18] T. Santalainen, 'Sustainable Strategizing: Extending Competitive Advantages to Viability Advantage', in *Rethinking Strategic Management*, T. Wunder, Ed., in CSR, Sustainability, Ethics & Governance. , Cham: Springer International Publishing, 2019, pp. 87–104. doi: 10.1007/978-3-030-06014-5\_5.
- [19] J. Cascio, 'Facing the Age of Chaos', Medium. Accessed: Feb. 20, 2024. [Online]. Available: <https://medium.com/@cascio/facing-the-age-of-chaos-b00687b1f51d>
- [20] G. Gupta, 'Strategic Planning is Dead', Kotter International Inc. Accessed: May 23, 2023. [Online]. Available: <https://www.kotterinc.com/strategic-planning-is-dead/>
- [21] J. M. Mendoza and M. A. M. Peláez, 'Organizational adaptability: A reflection based on ex-ante, in action and ex-post conditions', *Cuadernos de Administración*, vol. 34, Aug. 2021, doi: 10.11144/Javeriana.cao34.oarba.
- [22] V. Kaur and V. Mehta, 'Leveraging Knowledge Processes for Building Higher-Order Dynamic Capabilities An Empirical Evidence from It Sector in India', *JIMS8M: Jour. of Indian Manage. & Strat.*, vol. 21, no. 3, p. 37, 2016, doi: 10.5958/0973-9343.2016.00023.5.
- [23] M. Niehaus, K. Hansen, M. Mocan, and D. Barmayoun, 'Unraveling Successful Company Organizations: A Research Design to Explore Strategies for Thriving Amid Market Turbulence', *Administrative Sciences*, vol. 13, no. 9, Art. no. 9, Sep. 2023, doi: 10.3390/admsci13090204.
- [24] R. A. D'Aveni, 'Coping with hypercompetition: Utilizing the new 7S's framework', *AMP*, vol. 9, no. 3, pp. 45–57, Aug. 1995, doi: 10.5465/ame.1995.9509210281.
- [25] H. W. Volberda, 'Toward the Flexible Form: How to Remain Vital in Hypercompetitive Environments', *Organization Science*, vol. 7, no. 4, pp. 359–374, Aug. 1996, doi: 10.1287/orsc.7.4.359.
- [26] E. Supriharyanti and B. M. Sukoco, 'Organizational change capability: a systematic review and future research directions', *Management Research Review*, vol. 1, no. 46, pp. 46–126, 2022, doi: DOI 10.1108/MRR-01-2021-0039.
- [27] V.-L. Montreuil, 'Organizational change capability: a scoping literature review and agenda for future research', *Management Decision*, vol. 61, no. 5, pp. 1183–1206, Jan. 2022, doi: 10.1108/MD-01-2022-0051.
- [28] N. Leemann and D. K. Kanbach, 'Toward a taxonomy of dynamic capabilities – a systematic literature review', *Management Research Review*, vol. 45, no. 4, pp. 486–986, 2022.
- [29] M. Kodama, 'Collaborative Dynamic Capabilities: The Dynamic Capabilities View', in *Collaborative Dynamic Capabilities for Service Innovation: Creating a New Healthcare Ecosystem*, M. Kodama, Ed., Cham: Springer International Publishing, 2018, pp. 1–45. doi: 10.1007/978-3-319-77240-0\_1.
- [30] A. Carvalho, 'A Duality Model of Dynamic Capabilities: Combining Routines and Improvisation', *Administrative Sciences*, vol. 13, no. 3, Art. no. 3, Mar. 2023, doi: 10.3390/admsci13030084.
- [31] M. Wenzel, A. Danner-Schröder, and A. P. Spee, 'Dynamic Capabilities? Unleashing

- Their Dynamics through a Practice Perspective on Organizational Routines’, *Journal of Management Inquiry*, vol. 30, no. 4, pp. 395–406, Oct. 2021, doi: 10.1177/1056492620916549.
- [32] O. VOICA and S. Stancu, ‘Capabilities of Organizations in Change: A Dynamic Capability Framework’, *Economica*, vol. 1, Apr. 2022, doi: 10.53486/econ.2022.119.039.
- [33] A. Talaja, V. Škokić, and N. Mise, ‘Organizational change capability and ambidexterity: The mediating role of innovativeness and responsiveness’, *Cogent Business & Management*, vol. 10, no. 3, p. 2279380, Dec. 2023, doi: 10.1080/23311975.2023.2279380.
- [34] Zukunftsinstitut, ‘Zukunftsinstitut’. Accessed: Apr. 09, 2024. [Online]. Available: <https://www.zukunftsinstitut.de>
- [35] Zukunftsinstitut, ‘Die Megatrends’. Accessed: Jan. 12, 2024. [Online]. Available: <https://www.zukunftsinstitut.de/zukunftsthemen/megatrends>
- [36] Zukunftsinstitut, ‘Die Megatrend-Map’. Accessed: Jan. 12, 2024. [Online]. Available: <https://www.zukunftsinstitut.de/zukunftsthemen/die-megatrend-map>
- [37] D. J. Teece, ‘Dynamic Capabilities: Routines versus Entrepreneurial Action’, *Journal of Management Studies*, vol. 49, no. 8, pp. 1395–1401, 2012, doi: 10.1111/j.1467-6486.2012.01080.x.
- [38] D. J. Teece, ‘Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance’, *Strategic Management Journal*, vol. 28, no. 13, pp. 1319–1350, 2007, doi: 10.1002/smj.640.
- [39] EDRI, ‘EDRI Sales Flyer’. Oct. 2023.
- [40] C. Helfferich, *Die Qualität qualitativer Daten*. Wiesbaden: VS Verlag für Sozialwissenschaften, 2011. doi: 10.1007/978-3-531-92076-4.
- [41] E. Berman, ‘An Exploratory Sequential Mixed Methods Approach to Understanding Researchers’ Data Management Practices at UVM: Integrated Findings to Develop Research Data Services’, *University Libraries Faculty and Staff Publications*, Mar. 2017, doi: 10.7191/jeslib.2017.1104.
- [42] S. Magistretti, C. Dell’Era, C. Cautela, and J. Kotlar, ‘Design Thinking for Organizational Innovation at PepsiCo’, *California Management Review*, vol. 65, no. 3, pp. 5–26, May 2023, doi: 10.1177/00081256231170421.
- [43] M. Niehaus and M. Mocan, ‘Cultivating Design Thinking for Sustainable Business Transformation in a VUCA World: Insights from a German Case Study’, *Sustainability*, vol. 16, no. 6, Art. no. 6, Jan. 2024, doi: 10.3390/su16062447.
- [44] J. Barney, ‘Firm Resources and Sustained Competitive Advantage’, *Journal of Management*, vol. 17, no. 1, pp. 99–120, Mar. 1991, doi: 10.1177/014920639101700108.
- [45] N. Leemann, D. Kanbach, and S. Stubner, ‘Breaking the Paradigm of Sensing, Seizing, and Transforming – Evidence from Axel Springer’, *Journal of Business Strategies*, no. 38, pp. 95–124, 2021.
- [46] H. Bockius and N. Gatzert, ‘Organizational risk culture: A literature review on dimensions, assessment, value relevance, and improvement levers’, *European Management Journal*, Feb. 2023, doi: 10.1016/j.emj.2023.02.002.
- [47] M. V. Sunder, G. L.S., and R. R. Marathe, ‘Dynamic capabilities: A morphological analysis framework and agenda for future research’, *European Business Review*, vol. 31, no. 1, pp. 25–63, Jan. 2019, doi: 10.1108/EBR-03-2018-0060.
- [48] D. Wiraeus and J. Creelman, *Agile Strategy Management in the Digital Age: How Dynamic Balanced Scorecards Transform Decision Making, Speed and Effectiveness*. Cham: Springer International Publishing, 2019. doi: 10.1007/978-3-319-76309-5.

- [49] R. S. Kaplan and D. P. Norton, *The strategy-focused organization how balanced scorecard companies thrive in the new business environment*. Boston, Mass.: Harvard Business School, 2000.
- [50] J. W. Creswell and V. L. Plano Clark, *Designing and Conducting mixed Methods Research*, 3. Los Angeles: SAGE, 2017.