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Approaching VUCA Environment with Enterprise Agility in Government Organization

Case Business Finland and COVID-19

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ABSTRACT :

As we live in a VUCA world, many have experienced what crises can cause in business life. To be resilient and thrive in this increasingly volatile, uncertain, complex, and ambiguous world, top companies are gaining sustainable competitive advantages by embracing agility at scale. Those that fail to keep up with the rapid pace of change risk falling behind the competition. However, with crises come opportunities for change. Businesses of all sizes have never sensed so much pressure to make their business models fit changing requirements. This study aims to discover how a government organization embraced enterprise agility when the global pandemic (COVID-19) added another dimension to the already VUCA environment. Of particular interest is how the role of a public organization has affected a company's agility in such a dynamic environment and what kind of capabilities are essential for agility.

The study constructs a tentative theoretical framework based on existing research on a dynamic environment and enterprise agility considering the public context. The framework outlines the foundation for the exploratory qualitative case study on a single case from Business Finland, a Finnish government organization for innovation funding and trade, travel, and investment promotion. The primary data for the empirical study was collected by conducting semi-structured interviews with 12 knowledge representatives who were actively involved in Business Finland's operations during the COVID-19 outbreak but who worked in different units and regions, thus providing various lookouts on the same phenomenon.

The novelty of this study lies in the combination of dynamic environment and agility, and it contributes to both research fields. The findings show that Business Finland has embraced enterprise agile practices to respond to the volatility and uncertainty that followed the COVID-19 pandemic. Altogether six agility providers with several embedded practices emerged from the findings. A burning platform for change replaced the cultural aversion to risk-taking and highlighted empowered teams that worked within and across agencies to achieve rapid results. The findings indicate that these providers and practices did not only help Business Finland to navigate through the COVID-19 crisis but also pointed to more agile operating practices to be more resilient and agile in the future. It became evident that the driver behind various operating rules and practices that might have hindered government organizations' agility is more often a habit, not law. Given the high environmental velocity, the findings suggest that Business Finland should incorporate the Lean Startup mindset and practices that emerged during the crisis into its daily operations to prepare for future changes and potential shock waves. Moreover, the study confirmed the primary capabilities of agility, of which flexibility and responsiveness, in particular, became essential during the COVID-19 pandemic.

KEYWORDS: Enterprise Agility, Dynamic environment, VUCA, Government Organization, COVID-19

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1 Introduction

The fundamental issue in strategic management is how organizations can be resilient and achieve competitive advantage. This question becomes even more challenging to answer in a matter of dynamic and disruptive change in the VUCA (i.e., volatility, uncertainty, complexity, ambiguity) environment (Teece et al., 1998; Christensen & Overdorf, 2000). As a solution to the challenge has been presented, an organization's ability to adapt to change (Sherehiy et al., 2007; Bennet & Lemoine, 2014; Baran & Woznyj, 2020). In academic research, all three terms: "adaptability," "flexibility," and "agility," are applied to represent how an organization can cope with an unpredicted and dynamically changing environment (Sherehiy et al., 2007). Akin, Farahani, and Salmi (2015) and Crocker et al. (2018) consider organizational agility as the key to success in today's business. In the 21st century, agile practices are no longer a choice, but an organization's agility, i.e., the ability to respond quickly to environmental demands (Sharifi & Zhang, 1999), is an obligation for a company to be able to differentiate itself as a successful organization from those that are declining (Harraffin et al., 2015; Sharifi & Zhang, 1999). Academic curiosity in agility and flexibility has been increasing substantially (Christofi et al., 2021; Brozovic, 2018; Combe, 2012). Prior studies examine agility focusing on an organization's agile functions through a diverse academic discipline such as strategy and management (e.g., Xing et al., 2020) and operations and supply chain management (e.g., Fayezi et al., 2016; Akhtar et al., 2018). Even though agile principles were initially designed to implement in small, single-team projects (Boehm & Turner, 2005) and are argued to be more complex to apply effectively in larger projects (Dybå & Dingsøy, 2009), their apparency and shown potential have contributed their attractiveness also outside this context. Indeed, researchers have recently been particularly interested in large companies and projects (Christofi et al., 2021; Paasivaara et al., 2014).

Although, a few studies on business strategy focus on adaptation to VUCA environment (e.g., Teece et al., 2016; Junni et al., 2015; Nadkarni & Narayanan, 2007b), environmental conditions in previous empirical studies have, in some extent, remained weak or assumed, or focused only on one form of crisis, explicitly economic crisis (Fainshmidt et al.,

2017; Lee et al., 2009; Chung et al., 2008). Previous studies also recognize that the insight of enterprise-wide agile transformations outside software industries is limited (Kettunen et al., 2019). Similarly, there is a lack of studies that focus on diverse types of firms within this research area. The focus is mainly on large MNEs (Christofi et al., 2021), while very little work has been presented from the government context (Eggers & O’Leary, 2017). On the one hand, government corporations are argued to be more rigid, but on the other hand, a growing number of government organizations are looking for ways to exploit the opportunities from agile methodology (Mazzucato & Kattel, 2020; O’Leary et al., 2017; Barrocca et al., 2019). Therefore, this study answers the call of Christofi et al. (2021) and approaches the subject from the perspective of a government organization during a global pandemic. The context of this study is timely unique, and there has not been much research around it. Additionally, this study responds the call of Dikert et al. (2016), who states that more research conducted with proper methods on large-scale agile transformations is acutely needed. Based on the conducted review, only six research papers were identified, despite the significant practitioner interest in the topic (Dikert et al., 2016).

The purpose of this study is to tap into this research opportunity by answering the following research question:

How does a government organization embrace enterprise agility in VUCA environment?

More specifically, this study aims to explore the role of agility in the context of large organizations, commonly entitled enterprise agility, in the literature (Sherehiy et al., 2007). The aim is to determine how the sudden changes in the VUCA environment affected government organizations and how organizations responded to the disruptive change with enterprise agility. To research the relationship between agility and a dynamic, high-velocity environment, a further understanding of their relations and embraced practices is needed. The aforementioned is done by first creating a theoretical framework by reviewing existing research on enterprise agility and the VUCA environment and then studying how a large government organization has applied enterprise

agility to respond to the global crisis. The framework forms a basis for the exploratory qualitative case study on a single case from a Finnish government organization for innovation funding and trade, travel, and investment promotion. The case company Business Finland's 713 experts work in 42 offices globally and 16 regional offices around Finland. Business Finland is part of the Team Finland network. By accelerating companies' sustainable growth, Business Finland aims to generate prosperity and well-being for the Finnish society (Business Finland, 2022a). The research is carried out by using a qualitative research method. As the objective is to gain information on Business Finland's responses and agility, qualitative data is needed to understand the whole context fully (Sandelowski, 2004; Saunders et al., 2019). The data is collected through semi-structured interviews as primary data and from existing sources as secondary data. For example, Business Finland's internal and external evaluations and analyses are utilized here to make needed in-depth analyses (Piekkari et al., 2009).

This study contributes to the literature in three ways. First, the main theoretical contribution of this study is the empirical framework that adds the government organization context to prior research on enterprise agility. Using the aspects of an existing conceptual framework (Sharifi et al., 2001), new traits and features (OECD, 2015; Baran & Woznyj, 2020) are combined to leverage an understanding of how government organizations embrace enterprise agility in VUCA environment. Second, the study completes agility literature and contributes to fulfill the existing research gap by examining the role of agility outside the software industry during a global crisis (Christofi et al., 2021; Kettunen et al., 2019). Finally, the current study extends the revealed government organization features by OECD (2015) and introduced government organization's agile practices embraced during a crisis that contribute to the existing literature on the breadth and depth of the empirical findings.

This thesis is divided into five sections. The study starts with an introduction, which reviews the contextual background and purpose of the research. In addition, the section outlines research questions and research structure. The second section of the thesis

delves into the theory of the study and concentrates on previous literature from the areas of agility and dynamic environment. The third section of the study describes the research methodology, data collection, and data analysis methods, while the fourth part gathers the results from the empirical part. Finally, the findings are discussed, in the last section. The chapter brings together the synthesis and key finding and highlights the theoretical and managerial implications, as well as the limitations of the study and suggestions for future research.

2 Theoretical background

2.1 Meeting the challenge of dynamic change

The VUCA acronym stands for volatility, uncertainty, complexity, and ambiguity. The term has been understood to reflect an increasingly unstable and rapidly changing business world (Nandram & Bindlish, 2017; Bennet & Lemoine, 2014). Although that acronym took hold after the 9/11, 2001 terrorist attacks, the term was first introduced by the U.S. Army War College to explain more volatile, uncertain, complex, and ambiguous, multidimensional world that followed the Cold War (Nandram & Bindlish, 2017). Strategic business leaders then used the term to describe the chaotic, turbulent, and tumultuous environment that has eventually come the “new normal” (Bennet & Lemoine, 2014). Prior evidence from the financial crisis of 2008 – 2009 showed us how various business models became outdated when companies faced dynamic environments similar to those encountered by the military (Chung et al., 2008; Lee et al., 2009; Fainshmidt et al., 2017). In response to disruption, organizations must frequently scan and scout the VUCA environment, to increase consciousness to sense and seize on opportunities and threats (Cousins, 2018).

However, limited knowledge about nature, fundamental patterns, and interdependencies has made it challenging to foresee the future. It is no longer sufficient to follow the industrialization tradition of viewing companies as technical machines and governing and structuring them accordingly (Nandram & Bindlish, 2017; Cousins, 2018). Instead, the key factors with continuous change are the structures that support goals and the organizational culture. The VUCA model challenges the mindset of organizations and leadership into a direction that emphasizes empathy and a people-centered approach. A vital role is given to the meaning and purpose given to the activity: in organizations with a clear vision, the employees have a better understanding of their job description, and they develop their skills on their initiative. The culture of change in organizations is influenced by, among other things, the ways of working that support culture, the values

of the organization, management practices, interaction, and a shared vision for the future (Baran & Woxnyj, 2021).

In the organizational context, resilience refers to the ability to survive and evolve during various changes, either large or small (Olsson, 2014). Changes in circumstances require companies to innovate and develop their operations and strategy to respond to the new situation (Teece et al., 2016). Supposing that leaders misinterpret circumstances or the surrounding environment and prepare for the wrong challenge, there is a considerable risk that leaders set course and resources in the wrong direction and thus fail to address the genuine dilemma (Bennett & Lemoine, 2014). Therefore, examining differences between volatility, uncertainty, complexity, and ambiguity is justified. Bennett and Lemoine (2014) have summarized the several types of VUCA challenges and responses introduced below in the figure 1. In these four fields, the VUCA elements are classified according to the predictability of the results and the availability of data. In the figure, the left edge depicts the extent to which the activity results are predictable. On the other hand, the bottom edge describes the amount of information available.

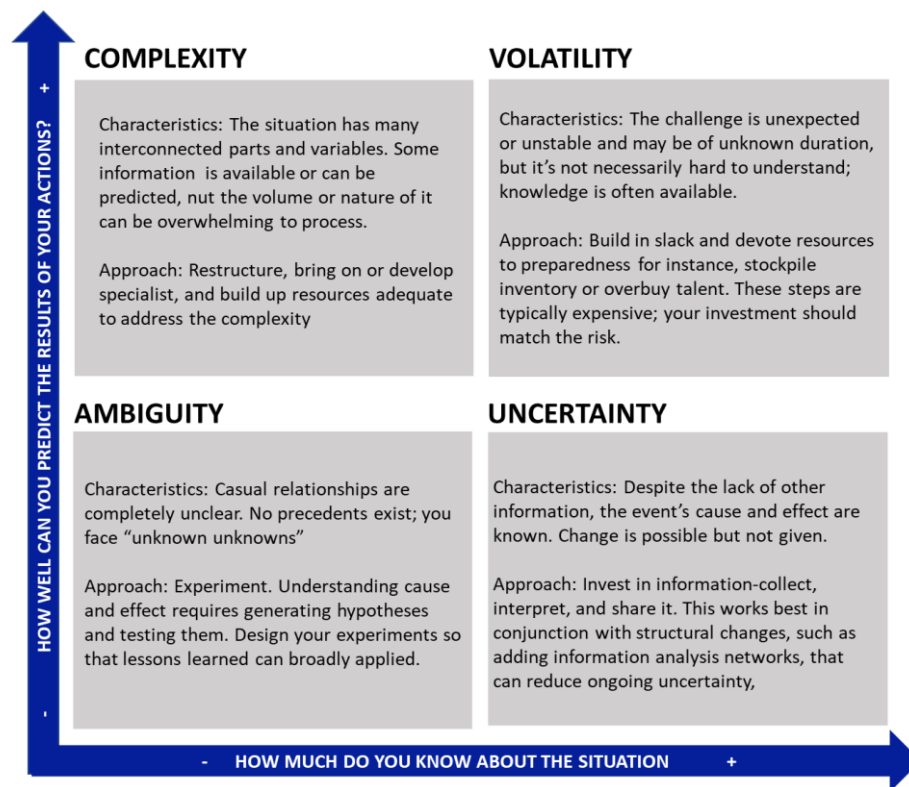


Figure 1. VUCA challenges and responses (Bennett & Lemoine, 2014).

Volatility describes the nature of the change and the speed of the forces and dynamics that influence on the change. The more volatile the surrounding world is, the faster things change. Volatility is defined in the literature as a relatively unstable or unexpected change of unknown duration. However, a volatile situation is not necessarily challenging to understand as volatility does not essentially embrace complex structure, a critical knowledge gap, or uncertainty on the consequences of critical events. The key to coping with volatility is understanding the opportunities and threats inherent in the situation. The past experiences and best practices no longer offer solid indicators for identifying solutions for the current state or future (Bennett & Lemoine, 2014). Further, high volatility highlights the risk for outdated information, too slow responses, and risk-aversion (Sinha & Sinha, 2020). Bennett and Lemoine (2014) suggest that the best method to prepare is to dedicate resources toward embracing agility when volatile change occurs. Further support is given by Baran and Woznyj (2020) that more generally asserts that agility can create opportunities for flexible operations when volatility rises.

Uncertainty refers to a lack of predictability in issues and actions (Bennet & Lemoine, 2014). The challenge of uncertainty is that the cause and effect of the event are known, but the ultimate effects or significance of the change remain unknown. There exists a risk for incomplete information and resort to work to what worked in the past (Sinha & Sinha, 2020). Compared to volatility, a situation where changes occur rapidly, and at varying magnitudes, uncertainty does not include volatility. Change is possible but not given. Because uncertainty occurs due to a lack of proper knowledge, dealing with it is as simple as gathering information. Investment in this area comprises strategies for gathering, interpreting, and disseminating information. Uncertainty may be fundamentally addressed by allocating greater resources to boundary-spanning activities, such as expanding outside existing networks, data sources, and analytical processes to receive evidence from new partners and examine it in new ways. Many sources, both inside and outside the company, contribute to establishing information networks (Bennett & Lemoine, 2014).

Complexity, the third component of VUCA, is characterized by many interrelated parts. Complexity involves the multiplication of forces of change, the confusion of things, and the lack of a cause-and-effect relationship making it challenging to assess how different things relate to each other. The activity results can be predicted to some extent, and information may be available, but there are challenges. Complexity may cause analysis paralysis, and organizations may choose short-term fixes and quick wins over correctly understanding and defining organizations' challenges (Sinha & Sinha, 2020). Although useful in volatile conditions, storing resources is ineffective if a company does not efficiently deploy them in a complex context. Correspondingly, developing added information networks, as an organization should do in uncertain conditions, risks increasing information overload, driving organizations to 'freeze', and making no choices. Conversely, the most straightforward approach to deal with complexity is to clarify the circumstances by adopting a structure that reflects surroundings (Bennett & Lemoine, 2014). The literature has reliably shown that organizations that adapt to "match" with external dynamics, operate significantly better than organizations that preserve prior structures and processes when confronted with a changing business environment. Different models, such as CYNEFIN, have been introduced to allow the organization to identify the nature of the operating environment or situation and then choose the suitable operating model to march the external dynamics (Snowden & Boone, 2007). Organizations should be designed to work with and benefit from environmental complexity rather than against it (Bennett & Lemoine, 2014).

The last component of the VUCA, *ambiguity*, refers to the perception of reality and the possibility of misunderstandings. Causal relationships are uncertain, and previous examples do not exist (Bennett & Lemoine, 2014). There is a fine line between uncertainty and ambiguity components. Whereas stating uncertainty, the relevant information is taken as "missing," ambiguity refers to the particular state of existence when there is a total absence of a comprehensible message. Thus, ambiguity is frequently taken as a side effect of information overload (Sinha & Sinha, 2020). New requirements for the operation and management of organizations can cause conflicts and challenge personal values.

In order to avoid the failure to understand the significance of the event or not appropriate actions, experimentation and hypotheses testing have been suggested as tools to navigate ambiguous situations (Bennett & Lemoine, 2014).

The ultimate dilemma is to take the VUCA world and change the threatening nature into one that is not only threatening but also full of opportunities (Teece et al., 1998; Cousins 2018; Baran & Woznyj, 2021). Organizations may use the VUCA lens to uncover and evaluate solutions to current difficulties. Furthermore, VUCA will drive leaders to learn from their mistakes and to bounce back with greater resilience and the ability to improve continually (Abidi & Joshi, 2019). Businesses confronted with the VUCA impact will also have the chance to develop strategies that combine efficiency, creativity, and control to survive the worst-case scenario (Bennet & Lemoine, 2014). Baran and Woznyj (2021) argue that three sets of actions are dominant for the any team's or organization's excellence amidst VUCA environment (see figure 2).

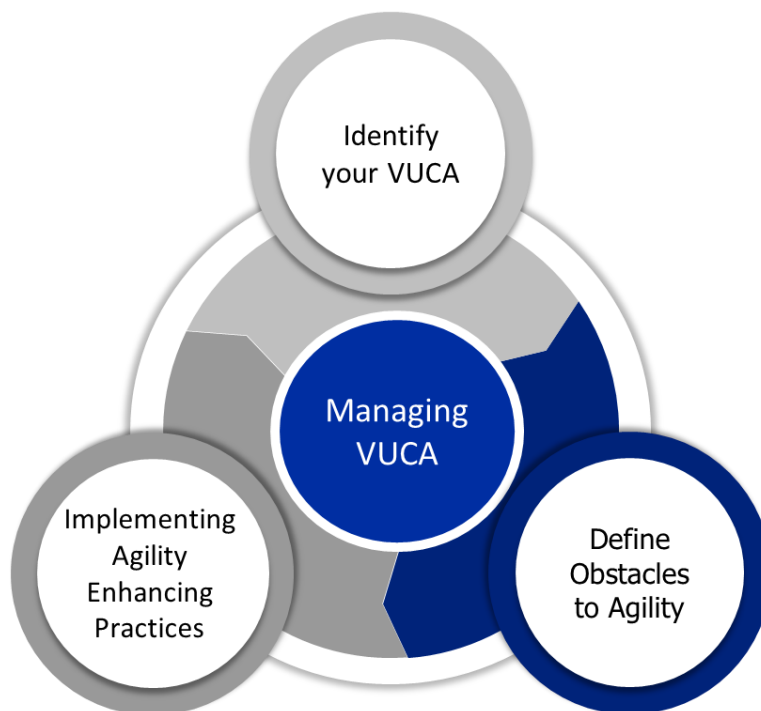


Figure 2. Managing VUCA through three interrelated sets of actions (Baran & Woznyj, 2020).

The first action, “Identify your VUCA,” highlights that recognizing the VUCA present in the environment is essential because this allows a leader to get a shared sense of what threats and opportunities they face, giving rise to applicable proceedings needed. Along with recognizing the VUCA within and outside of an organization, major obstacles to agility should be assessed on a regular basis, as the emerging research increasingly suggests that as a way of coping with the volatility. In their research, Baran and Woznyj (2021) identify six obstacles that are instrumental and might prevent organization’s capability to cope with the drivers of a VUCA environment. These obstacles included inertia of the status quo, time and organizational design barriers, unresponsiveness to customer needs, growing pains, slow communication and bureaucracy, and outdated processes. Further, it has conclusively been shown that building on deep customer focus, knowledge sharing and teamwork, interactive improvement and learning, strategic alignment, fostering agile behavior, leadership and role modeling, and managing talent are suggested practices for managing VUCA and overcoming the identified obstacles (Baran & Woznyj, 2021; Sherehiy et al., 2007).

2.1.1 Environmental velocity as a multidimensional concept

Closely related to volatility, environmental velocity has been introduced in the academic literature to denote the rate and speed of dynamic environments changes. Environmental velocity has become a widely recognized concept to express the state of an organization’s environment (e.g., McCarthy et al., 2010; Bourgeois & Eisenhardt, 1988; Judge & Miller, 1991; Oliver & Roos, 2005). Management literature recognized the concept first time in 1988 as Bourgeois and Eisenhardt conducted a study of strategic decision making in the microcomputer industry. Bourgeois and Eisenhardt (1988) use the term high-velocity environment to refer to “rapid and discontinuous change in demand, competitors, technology and/or regulation, such that information is often inaccurate, unavailable, or obsolete”. Previous research has indicated that in a high-velocity environment advance is linked to rapid, formal strategic decision-making practices (Eisenhardt, 1989; Judge & Miller, 1991), high levels of team and process integration (Smith et al., 1994), agile

organizational adaptation and fast product development (Eisenhardt & Tabrizi, 1995) and more the application of heuristic reasoning (Oliver & Roos, 2005). Organizations that can change and synchronize their activities to match the environment velocity will compete over those that cannot (McCarthy et al., 2010). From the perspective that the environment is a source of information that managers use to preserve or revise their organizations, scholars have demonstrated that velocity affects how executives analyze their environments (Nadkarni & Barr, 2008; Nadkarni & Narayanan, 2007a), further underlining the effects of environmental dynamism on key organizational partners (Dess & Beard, 1984).

Several scholars have studied environmental velocity using singular categorical explanation “low,” “moderate,” or “high” velocity (e.g., Bourgeois & Eisenhardt, 1988; Eisenhardt, 1989; Eisenhardt & Tabrizi, 1995; Judge & Miller, 1991; Nadkarni & Narayanan, 2007a, b). However, a review of major studies revealed that the singular categorization fails to recognize that environmental velocity is a vector quantity mutually definite by two attributes both the rate and the direction of change and that organizational environments have multiple dimensions (demand, competitors, technology, and regulation), all of which can be coupled with a specific rate and direction of change (McCarthy et al., 2010). The rate of change, also referred to as pace, speed, clock rate, or frequency of change, is generally accepted as the amount of change in a dimension of the environment during a certain timeframe while the direction of change is argued to vary corresponding to the degree of continuity or discontinuity (Nadkarni & Narayanan, 2007; Oliver & Roos, 2005; Smith et al., 1994). Bourgeois and Eisenhardt (1988) state that continuous change is a continuation of previous progress (e.g., continuously quicker computer technology). In contrast, discontinuous change is corresponding to a change in the direction (e.g., photography's transition from film to digital). Inflection points in trajectories that indicate a change in a dimension over time may therefore be used to illustrate discontinuities (e.g., technology price-performance curves or demand curves for specific products).

McCarthy et al. (2010) establish a frame to describe the relationship between velocity dimensions, remarking that each of them may be affected by various velocities. They characterize “velocity homology” as a degree where velocity dimensions have similar rates and directions of change and “velocity coupling” as a degree where the velocities of different dimensions affect one another. This multidimensional analysis of environmental velocity suggests four “velocity regimes” - simple, divergent, conflicted, and integrated – in terms of velocity homology and velocity coupling patterns. These findings have important implications for organizations as they show that an organization should not be compelled to be constantly quick or slow in order to meet the industry demands. The major contribution with the frame is that organizations should not strive to be evenly rapid or slow-going in response to VUCA environment. Each velocity regimes call for organizations to preserve distinct forms of time-based fit (i.e., the synchronization of various organizational rates) and time-based coordination (i.e., addressing the interconnections between organizational paces).

Obtaining both rate and direction of environmental velocity, the study poses McCarthy et al. (2019) classification of four environmental velocity types: "Irregular velocity," "Turbulent velocity," "Uniform velocity" and "Express velocity" (see figure 3) to delve into each environmental velocity type and further explain how these would require distinct strategic renewal practices. Effective strategic renewal demands guiding and empowering personnel to seek the right mix of exploration and exploitation required to thrive in their organization's industry (McCarthy et al., 2019). Whereas exploration involves search, risk-taking, experimentation, and discovery activities, exploitation utilizes enhancement, optimization, and constant improvement practices. As means to for strategic renewal, management control mechanisms are utilized to counterpoise and settle two critical organizational learning manners: “exploration” and “exploitation” (McCarthy & Gordon, 2011; Raisch et al., 2009).

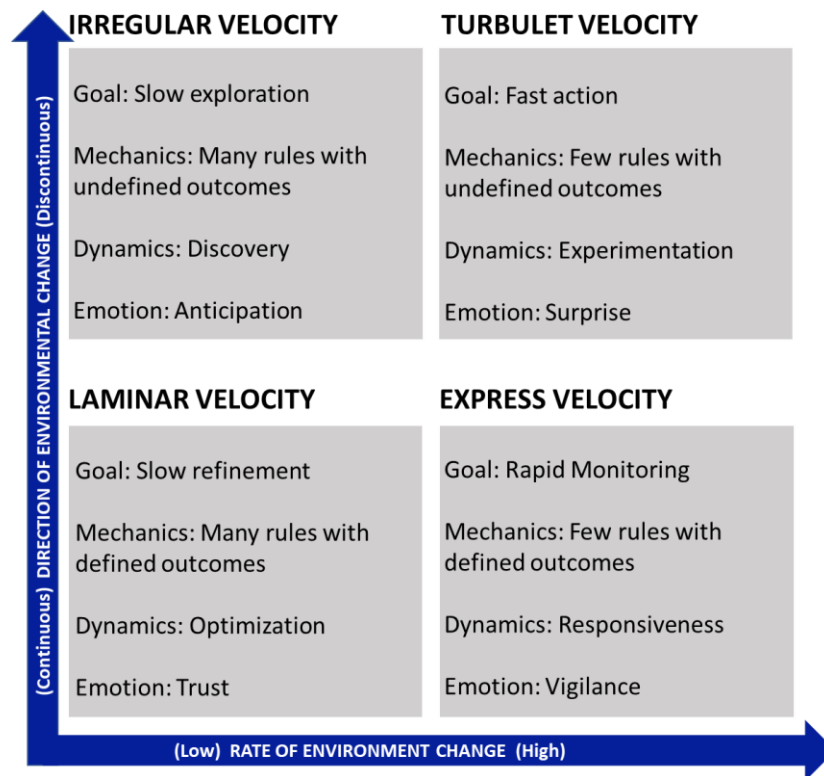


Figure 3. Environmental velocity types (McCarthy et al., 2019).

Irregular velocity takes place when the direction of environmental change is discontinuous, and the rate of environmental change is low. McCarthy et al. (2019) describe this as irregular as “the direction of the environmental change follows different paths gradually over time”. From a strategic renewal perspective, the rate and direction of irregular velocity are suitable for slow exploration. Low rate of change match exploration practices e.g., experimenting and willingness to take risks, which are essential for strategic development that correspond to environment’s discontinuous changes. These practices and the consequent effects should be implemented gradually to meet the modest change pace related to the velocity type.

Turbulent velocity appears when environmental change is rapidly shifting over time so that the direction of environmental change is discontinuous, and the rate of environmental change is high. Effective strategic renewal in a turbulent velocity type is expected to appear presumably when an organization dynamically deploy rapid exploration

(McCarthy et al., 2019). In turbulent settings, there is less time for moves that allow organization to respond effectively (e.g., resource allocation and decision-making) accordingly organizations must strive to provide industry-changing strategies as rapidly as possible, rather than developing strategies or value propositions that improve or expand existing strategies (Siggelkow & Rivkin, 2005).

Laminar velocity refers to continuous and slow change that is expected. The environmental velocity dimensions change in the same direction slowly over time, resulting in a relatively ordered and streamlined industry dynamics. McCarthy et al., (2019) denote that laminar velocity types are expected to favor slow exploitation in terms of strategic renewal. With slow exploitation, existing strategies are fine-tuned over time to ensure that strategic shifts are in align with the rate and direction of environmental change. Such an approach incorporates to generate a slow, frequent dynamic of strategic rule optimization in pursuit of an evidently noted accomplishment: "a win or draw".

Lastly, when the direction of environmental change is continuous, and the rate of environmental change is rapid, *express velocity* occurs. As the environmental velocity dimensions are evolving in the same direction, instead of being an initiative-taking frontrunner, this approach is calls for monitoring industry changes and being a fast follower. Rapid exploitation would ensure that strategic renewal initiatives are appropriate with the velocity settings (McCarthy et al., 2019). A responsiveness underlies the organizational capability of sensing, perceiving, and anticipating environmental changes (Sharifi & Zhang, 1999).

2.1.2 COVID-19 pandemic outbreak

The global shock wave following the occurrence of the coronavirus (COVID-19) outbreak has been the highest disruptive event in the world's recent history. In March 2020, the World Health Organization (WHO) declared COVID-19 as a global pandemic and overnight, businesses and institutes were closing, cities were locking down and personal

protective equipment and necessities were in short supply (Shepherd, 2020; WHO, 2020). Organizations meeting the consequences found themselves managing challenging and unprecedented demands (Worley & Jules, 2020). Despite, the substantial number of literatures on disruptive trends and crisis (Baran & Woznyj, 2021; Chung et al., 2008; Fainshmidt et al., 2017; Lee et al., 2014) one criticism towards much of literature is that it tends to overlook to possibility of global pandemic, such as COVID-19.

The appearance of COVID-19 has brought uncertainty about the future and an understanding that the pandemic is nowhere near over. The economic circumstances are in great volatility. The complexity and ambiguity of the pandemic and its consequences are challenging health care systems worldwide and leading to political transformations. Considering all of this, COVID-19 is a powerful example of VUCA outbreak where the rate of environmental change is high, and the direction of the environmental change is discontinuous. To survive and succeed in this more VUCA environment, leading companies gained substantial benefits by embracing agility at scale- at the person, team, and organization level (Ganguly et al., 2009). Organizations with agile practices rooted in their operating models have proven to manage the impact of the COVID-19 crisis better than their peers (Handscorn et al., 2020). Although the pandemic has portrayed a variety of scenarios with drastic, unfavorable outcomes, it has also provided an unexpected opportunity to shift paradigms, potentially leading to a move from an unsustainable pre-pandemic world to a long-term, resilient, and sustainable global practices (Ritchie, 2004; Romagosa, 2020).

2.2 Agility

In a high-velocity environment, in which markets appear, crash, split and develop, the key determinant for organizations success is agility, the ability to remain nimble, adjust the organization's strategic direction, and create value even though the surrounding environment would change (Weber & Tarba, 2014). It has conclusively been shown that the base for agility originated in the manufacturing industry, where adaptation to supply

chain changes required flexibility and nimbleness. The concept raised considerable academic attention, especially in the early 1990s when dynamic and evolving market conditions forced organizations to look for innovative ways to adapt swiftly to unexpected external changes (Sharifi & Zhang, 1999; Yusuf et al., 1999). There are many different definitions of agility, and they often describe speed, responsiveness, flexibility, cost-effectiveness, and quality with slightly different emphases (Ganguly et al., 2009). Ganguly et al. (2009) and Nafei (2016) bring together definitions of agility from different researchers, summarized in the table 1. Some of the definitions are more recent, while some are older but still well suited to today's operating environment requirements. The emphasis of the different definitions differs slightly and at the same time leaves room for strategic emphasis on organizations and an individual agile approach.

Table 1. Review of agile definitions (Ganguly et al., 2009; Nafei, 2016).

Researcher(es)	Definition
Iacocca & Lehigh (1991)	A concept that changes rapidly, promptly, and accordingly to customers' requirements
Goldman et al. (1995)	Organization's ability to operate profitably in a competitive environment where customer requirements are constantly changing
Cho et al. (1996)	Ability to survive and thrive in a competitive environment and amid unpredictable changes by responding quickly and efficiently to market changes
Fliendner & Vokurka (1997)	Ability to provide market products and services that meet customer requirements by taking into account costs, quality, lead times, and production volumes
Sharifi & Zhang (1999)	Responding to change in the right way and identifying and reaping the benefits of transformation
Yusuf et al. (1999)	Reorganizing and consolidating resources and managing data to deliver customer-centric products and services in a changing competitive environment.
Menor et al. (2001)	The ability to manage operations in a coordinated manner in terms of quality, delivery, flexibility, and cost
Sambamurthy et al. (2003)	Ability to quickly innovate and design old and new processes to take advantage of an unpredictable and dynamic competitive environment
Raschke & David (2005)	Ability to dynamically modify processes to adapt to environmental requirements and needs
Mathiyankalan et al. (2005)	Ability to identify changes (opportunities and threats) in the environment and modify resources, processes, and strategies to meet customer and stakeholder requirements
Janssen (2010)	Ability to react quickly and efficiently to even radically changing environment
Park (2011)	A combination of technology, human resources, skilled leadership, and information that enables the ability to respond to rapid changes in the environment while meeting customer needs on time
Mahrabi et al. (2013)	Ability to make fast, agile, active, and easy-to-carry moves that allow for quick thinking
Nafei (2016)	Ability to achieve goals by developing products that are enabled through human resource and organizational development, which in turn enables operations in a changing operating environment

While a variety of definitions of the term agility have been suggested, this paper will use the definition of Sharifi and Zhang (1999) as it resonates well with studied context and ideology that agility is a crucial ability in the radical turning of the business environment into a turbulent place of competition and struggle for success. Agility embodies a multitude of concepts to explain how organizations can successfully deal with dynamic environments. Among applications, the three concepts of “flexible organization”, “adaptive organization”, and “agile enterprise” are the furthestmost applied and widespread (Sherehiy et al., 2007). Surprisingly, there still seems to be much of misperception and ambiguity regarding the definitions and elements of the concepts. This limitation sounds counter-intuitive as generally accepted definitions for these concepts are lacking, and some authors might use them synonymously while others make a sharp distinction between them.

In the literature, the term organizational flexibility is used to refer organizational methods to cope with VUCA environment (Volberda, 1996; De Toni & Tonchia, 1998). Various diverse classifications for organizational flexibility have occurred but the greatest academic attention is given to the classification that observes numerical, functional, and financial form of flexibility (Javidan & Dastmalchian, 1993). The numerical flexibility refers to the ability to adjust the resources and working hours in response to changes in demand and output. On the practical level e.g., part-time, temporary, short-term contracts or changing the distribution of working hours provide this form of flexibility. Following, functional flexibility is associated workforce skills and ability adjust the contents of the tasks in such a way that it is possible to carry out the changed workload. For their part, the practices, e.g., individual pay systems, performance-based pay, and profit-sharing plans, introduce financial flexibility. Additionally, the dominant number of the literature recognized labor market flexibility as a form of flexibility to complement the aforementioned (Javidan & Dastmalchian, 1993; Dastmalchian & Blyton, 1998; Kalleberg, 2001).

While flexible organizations emphasize the capability to adjust and react to the changes (Volberda, 1996; De Toni & Tonchia, 1998), scholars remark that “adaptivity” examines organization’s ability to adapt to changes in terms of its form, structure, and formalization (Dooley, 1997; Hage & Aiken, 1969; Hage & Dewar, 1973). Organizational research contingency theory, from which the theory of adaptive organization has emerged, propose that despite that the surrounding circumstances affect an organization’s operating models, there is not one collective manner to manage or organize (Hatch, 1997; Donaldson, 2001; Vecchio, 2006). Donaldson (2001) argues that that fitting the organization’s features to contingencies aligned with circumstances an organization can increase its effectiveness. Here a literature proposes that the most studied disciplines regarding the contingencies that shape the organization are the environment, organizational size, and organizational strategy (Sherehiy et al., 2007). Considering the VUCA dynamics, the contingency theory reinforces the idea of organic organizational design in which everyone knows their roles and communication is open, decisions are made collaboratively, the hierarchy level is low, and teams operate cross-functionally (Lawrence & Lorsch, 1967; Hatch, 1997; Vecchio, 2006).

However, there is no one-size-fits-all strategy for creating an agile firm; a firm can grow increasingly agile but never fully agile (Alzoubi et al., 2011; Teece et al., 2016). These results are consistent with those of other studies and suggest that agility is about an ongoing process that is more about becoming than being (Alzoubi et al., 2011; Doz & Kosonen, 2008; Worley, 2014). Organizational agility is viewed as a core competency, competitiveness, and differentiator that demands strategic thinking, an innovative mindset, change exploitation, and a continual ability to adapt and take initiative. Agility accordingly emerges as a business imperative for existence rather than choice (Harrat et al., 2015). Teece et al. (2016) challenges the view by argues that seeking agility through constant change is not beneficial to an organization because change is costly and, if poorly implemented, change can lead to inefficiency. More significantly, organizations should recognize when and how much agility is if when pursuing it cost-efficiently. As well, while the advantages of agility are acknowledged, agility may also cause adverse

implications and hamper organization operations. In fact, the prerequisite for “stability” can be ignored (Pulakos et al., 2019) as a resilient organization requires both stability and adaptivity. A foundation of organizational stability is what allows people feel confident, secure, and positive in VUCA environment, which, in turn, allows them to stay calm, act rationally, and adapt successfully as the circumstances varies.

Yusuf et al., (1999) present that formulating a strategic architecture that shows an organization-wide map of core competencies may enable rapid changes in focus and afford reconfiguration of the company when an opportunity arises. The table 2 lists attributes and practices that comprise the agile organization.

Table 2. Attributes and practices of agile organization (Yusuf et al., 1999).

Decision domain	Related attributes
Integration	Concurrent execution of activities Enterprise integration Information accessible to employees
Competence	Multi-venturing capabilities Developed business practice difficult to copy
Team building	Empowered individuals working in teams Cross functional teams Team across company borders Decentralized decision making
Technology	Technology awareness Leadership in the use of current technology Skill and knowledge enhancing technologies
Quality	Quality over product life Products with substantial value addition First time right design Short development cycle time
Change	Continuous improvement Culture of change
Partnership	Strategic relationship with customers Close relationship with suppliers
Market	New product introduction Customer driven innovations Customer satisfaction Response to market changes
Education	Learning organization Multi-skilled and flexible people Workforce skill upgrade Continuous training and development
Welfare	Employee satisfaction

Sharifi et al., (2001) present a conceptual model (see figure 4) to describe the relationship between the four main aspects of agile manufacturing: (1) agility drivers, (2) strategic abilities, (3) agility providers, and (4) agility capabilities. The proposed concept is

considered the most holistic and straightforward among the agility literature (Sherehiy et al., 2007). The agility drivers illustrate the features of the external business environment in terms of rate and direction of the changes and, according to the scholars, would drive the organization to rethink its current strategy, acknowledge the need to embrace agility at scale, and implement a strategy to address agility (Sherehiy et al., 2007). Strategic abilities such as responsiveness, competency, quickness, and flexibility are the primary attributes of an agile organization that successfully deals with changes (Sharifi & Zhang, 1999). The agility capabilities could be reached through agility providers.

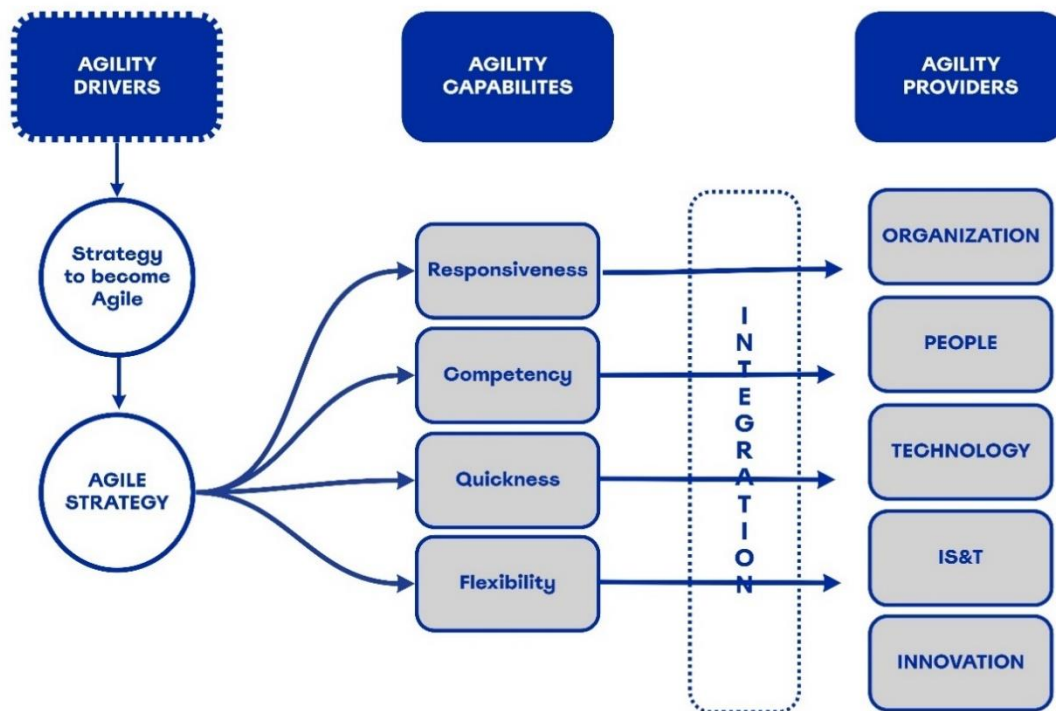


Figure 4. Agility concept (Sharifi et al., 2001).

Evaluating the organization's agility level necessitates a detailed definition and explanation regarding agility attributes. It is worth remarking that, particularly in a modern VUCA environment, organizations must vary in references to the capabilities used to gain and sustain agility. However, some general attributes can still be differentiated. Specific categories for each of the significant agility capabilities proposed by Sharifi and Zhang (1999) are presented in the table 3. Here, *responsiveness* is defined as the ability to recognize

changes and react quickly to them, reactively or proactively, and rebound. *Competency* is considered an extensive set of abilities that cause productivity, efficiency, and effectiveness of an organization's actions. *Flexibility* is an ability to process various products and reach diverse objectives with the same structures. *Quickness* is taken as an ability to carry out tasks and operations in the shortest possible time.

Table 3. Agility capabilities (Sharifi & Zhang, 1999).

Agility capabilities	
Responsiveness	Sensing, perceiving, and anticipating changes Immediate reaction to changes by effecting them into system Recovery from change
Competency	Strategic vision Appropriate technology (hard and soft) Sufficient technological ability Product/services quality Cost effectiveness High rate of new products introduction Change management Knowledgeable, competent, an empowered people Operations efficiency and effectiveness (leanness) Cooperation internal and external Integration
Flexibility	Product volume flexibility Product model/configuration flexibility Organization and organizational issues flexibility People flexibility
Quickness	Quick new products time to market Products and services delivery quickness and timeliness Fast operation time

2.2.1 Enterprise agility concept

As first recognized by Nagel (1991) at the Iacocca Institute, enterprise agility is perceived as a critical business driver for all modern organizations seeking to survive and thrive in a volatile business environment. The current VUCA market dynamic forces drive the

need for enterprise agility beyond. While a variety of similar definitions of the term agile enterprise have been suggested (Mathiyakalan, 2005; Sherehiy et al., 2007; Gunasekaran; 1999; Mundra et al., 2018) there appears to be some agreement that enterprise agility possess an organization's ability to sense dynamic changes and react promptly by reorganizing resources, capabilities, and strategies in an efficient and effective manner (Tseng & Lin, 2011). Enterprise agility views agility beyond software, viewing it as a comprehensive 'transformation of organizations' that includes business, operations, and cultural component (Sherehiy et al., 2007). In accordance, this study considers enterprise agile as a comprehensive implementation of agile values, principles, techniques, structure, roles, and methods across the entire spectrum of organizational activities.

Although previous research has identified the most relevant attributes of agility, developing an enterprise agility framework has proved challenging due to the multidimensionality and the context. The studied literature has identified two key pathways for investigating enterprise agility based on the degree to which an organization reacts to unforeseen external changes (Sherehiy et al., 2007). The first pathway, also called as passive perspective, focuses on internal capabilities, indicating that the perception of unpredicted change has been translated into a number of feasible dimensions through which an organization can embrace its enterprise agility. Hence, to enhance agility, an organization should first define the essential agile dimensions and then rearrange or combine existing assets and talents inherent in various operations to achieve such dimensions, leading to greater competitiveness (Yang & Liu 2012). Yusuf et al. (1999) support the perspective by stating that agility refers to successfully exploring competitive strategies such as speed, quality, flexibility, creativity, proactivity, and profitability through the combined use and reconfiguration of existing resources and established technologies. The second key pathway is built on the external viewpoint, as it examines enterprise agility as a competence that recognizes environmental changes and responds quickly. As a result, the major features for this strategy to boost enterprise agility are sensing and responding, that seem to be reinforced also in the earlier theoretical and empirical evidence (Yang & Liu 2012; Dove, 2001).

Enterprise agility emphasizes the capability to respond to external change and the ability to respond to unexpected changes (Ganguly et al., 2009). In accordance, there has been evidence that the capability to respond to external, dynamic change is a critical enabler of an organization's ability to embrace agility in a VUCA world (Goranson, 1999). Mathiyakalan et al. (2005) expand on the perception of being able to sense and respond, defining enterprise agility as an organization's ability to sense changes, trends, and changes embedded in its business environment and then adapt quickly by reshaping its strategy and resources. To be adaptable, organizations must: (1) promote inquiry, learning, experimentation, and divergent thinking; (2) improve external and internal connections; and (3) develop diversity, specialization, differentiation, and integration (Dooley, 1997). The table 4 below summarizes the characteristics of a flexible, adaptable, and agile organization.

Table 4. Characteristics of agile enterprise: organization and workforce (Sherehiy et al., 2007).

Organization	Characteristics of agile enterprise
Authority	Decentralized knowledge and control Fewer power differentials (Fewer titles, levels, status dimensions, etc.) Less adherence to authority and control Loyalty and commitment to project or group Authority tied to tasks Authority change when tasks change Wide span of control
Rules and procedures	Few rules and procedures Low level of formal regulation (In respect to job description, work schedules) Fluid role definitions Informally organized
Coordination	Informal and personal coordination Delegation of tasks and decision making Network communication Goal-directed
Structure	Flat, horizontal, matrix, networked or virtual structure Teamwork, cross-functional linkages Loose boundaries among function and units
HRM management practices	Employee empowerment and involvement Job rotation and enrichment Autonomy in decision making Information and knowledge access Teamwork Multifunctional teams Multiple skills trainings Workforce development and training Differentiation and diversity development
Agile workforce Proactivity	Anticipation of problems related to change Solution of change related problems' Personal initiative
Adaptivity	Interpersonal and cultural adaptability Spontaneous collaboration Learning new tasks and responsibilities Professional flexibility
Resiliency	Positive attitude to changes, to new ideas, technology Tolerance to uncertain and unexpected situation Coping with stress

2.2.2 Enterprise agility providers

Six critical factors are addressed to create base for enterprise agility: organizational structure, processes, people, technology, governance, and customer (Mundra et al., 2018). The similar components are also more widely identified and cited in the literature. There is a shared emphasis on flexibility and speed as primary attributes of an agile enterprise. However, an organization must take all six components into consideration to be truly agile (Sherehiy et al., 2007; Tseng & Lin, 2011; Sharifi et al., 2001; Sharifi & Zhang, 1999; Mundra et al., 2018).

The *structure* of an organization does not only explain the shape and form of an organization but also determines how flexible and adaptable it can be in responding to changing circumstances. The structure must enable teams to deliver and sustain all agile capabilities. A flexible and lean structure that allows and empowers a team to sense, respond and adapt to change will significantly support agility. At best, an accurate structure can be the most significant enabler for enhancing enterprise agility (Mundra et al., 2018; Tseng & Lin, 2011; Sherehiy et al., 2007). Further, the structure can influence and determine the speed of the decision-making, the effectiveness of the feedback loops, the level of collaboration between people within and across the teams, alignment of teams toward delivering valuable outcomes, and the extent to which an enterprise can scale and descale rapidly (Mundra et al., 2018). Agile organizations can usually maintain a top-level structure while replacing most of the fixed ladder with a flexible and scalable team networks (Rigby et al., 2016).

Processes are central in every organization, counting agile despite the misconception that agility means no processes or that processes are unimportant. The key is that processes are designed and revised as needed based on the organization's goals and people in such an organization, not the other way around (Mundra et al., 2018; Tseng & Lin, 2011). Agile organizations make decisions and act in rapid cycles strongly linked to innovative and productive operating processes. Whether used as design thinking, lean, agile development, or distinct kinds of agile methodologies, the implementation and

continuous rapid iteration of thinking, doing, and learning improves the organization's capability to operate in an agile manner (Rigby et al., 2016). This resonates well with other relevant agile practices such as rigidity, task prioritization, delivery speed or management of dependencies and blockers that are endorsed to be followed. Also, to be considered are barriers to communication and collaboration, visibility, and transparency of the process (Mundra et al., 2018).

People are at the core of the agile enterprise. The enablers for knowledge-based results are grounded on inborn human characteristics: creativity, innovation, learnability, passion, teamwork, and collaboration. The underlying capabilities of agility are effective and sustainable only when all people, not just leaders, can unlock and utilize their potential to create and deliver valuable outcomes to satisfy customers (Mundra et al., 2018; Tseng & Lin, 2011). Successful organizations have thrived with leaderships that contribute to empowered employees and teamwork. Rather than rulebooks, processes, or ladders, cultural norms can be encouraged through fostering peer behavior and an atmosphere of trust. Investments in an inspiring culture have fostered people processes that enable the entrepreneurship and competence development required for agility. Furthermore, under an agile approach, talent development entails acquiring new skills through a variety of experiences. Agile companies encourage and expect people to shift between roles and teams on a frequent basis (both horizontally and vertically), based on their personal growth objectives (Sherehiy et al., 2007; Rigby et al., 2016).

It has become imperative for organizations to integrate *technology* as a part of their strategic objectives in the digital decade (Sherehiy et al., 2007; Sharifi et al., 2001; Tseng & Lin, 2011). A fundamental rethinking of the organizational model for many organizations necessitates a reconsideration of the technologies that enable products and processes, as well as the technical performs that strengthen swiftness and flexibility. Familiarizing a modular-based software architecture allows teams to employ technology delivered by other teams successfully. Adaptation can further reduce handovers and interdependencies, which otherwise hinder operational cycles (Rigby et al., 2016). Thus, the role of technology has shifted rapidly from a supportive function to the core function that drives

the creation and sustains of the competitive edge. Responsiveness to change, continuous delivery capabilities, DevOps capability, ability to modify architecture, cooperation with business and alignment to business results, maturity of development methods, and alignment with technology partners on ways of working are all practices to consider (Mundra et al., 2018).

Mundra et al. (2018) describes that *governance* is about aligning the organization's resources and capabilities with its highest-priority objectives and initiatives to deliver maximum value outcomes for the stakeholders at the enterprise level. The attention of governance must move from being on process and compliance to focusing on inclusiveness and delivering valuable outcomes. While team-level governance is founded on the fundamental concepts of clarity, transparency, and rapid feedback, company-level governance is about balancing the paradoxes of order and freedom, short-term and long-term, and effectiveness and efficiency. Governance is also required at the portfolio and program levels to assure that the strategic objectives are accurately interpreted into team-level objectives and that the teams operate together to achieve the strategic objectives. Governance in an organization also mirrors the mindset and behavior of directors, and accordingly, it has a considerable influence on the culture, and consequently the agility, of the organization (Sherehiy et al., 2007). Decision-making must be collaborative and include teams solely responsible for achieving results. Akin, the metrics must facilitate decision-making by not just assessing progress toward targets but also pointing to variables that can impact the results (Mundra et al., 2018).

Finally, it is vital to understand the relationship between agility and *customers* (Tseng & Lin, 2011; Sherehiy et al., 2007; Mundra et al., 2018). For the reasons stated previously, it is evident that agility is required to serve customers. Equally crucial, the capabilities driving agility must be effective in serving customers. An enterprise that fails to get ahead and respond to a change in customer preferences is more likely to drop its value quickly. While the other five key enterprise components (organization structure, process, people, technology, and governance) can improve agility, the customer component can

help the organization raise the efficacy of the capabilities underlying agility. For example, closer connection with the customers will improve the efficiency of the organization's responsiveness capability (Mundra et al., 2018).

2.2.3 Role of agility in public organization context

Public organizations are not immune to the state of constant change in the current VUCA environment (Hämäläinen et al., 2012; Barrocca et al., 2019). Among others, numerous stakeholders, potentially conflicting objectives with compromises, shared power, and public accountability, make the environment particularly complex. Government organizations are expected to operate with multiple distinct types of individuals and organizations, and they cannot favor customer groups except it is connected to their mission. Due to their role and manifold stakeholders, organizations are also susceptible to criticism by policymaking, social media, and citizens. Moreover, government organizations have more difficulties attracting competent and educated workforces with defined salaries. Nevertheless, the most compelling attraction is related to the purpose of work and the ability to have a more significant impact on society (Van der Voet et al., 2015; Hämäläinen et al., 2012). Surprisingly, compared to the private sector, government organizations have stated to encounter more VUCA changes. In addition to the environmental issues, government organizations are implicated to face numerous issues through economic market trends, changing demographics, globalization, and the risk of potential large-scale catastrophes (Winter, 2012; McHugh et al., 2001; Piening, 2013; Pablo et al., 2007; OECD, 2015). Given these various challenges, government organizations must be strategically responsive and quick with decisions. This means that government organizations must be aware of threats and be prepared to take advantage of emerging opportunities, collaborate to make challenging decisions, and stick to them. Government organizations must also be able to mobilize all political parties to facilitate the creation of shared agendas to implement policy implementation, budgetary issues, and human and technological resources (OECD, 2015).

The emergence of agile organizations in the public sector is being driven by the need to confront, adapt to, and embrace the rapid changes affecting the sector and how it serves its stakeholders (O'Leary et al., 2017; Eggers & O'Leary, 2017). Similar to previous industrial revolutions, the role of government is expected to be fundamentally evolved. Governments are becoming platforms for coordinating public-private networks and delivering next-generation public services (Hämäläinen et al., 2012). It is generally presumed that bureaucratic and rigid public-sector organizations do not have lack the speed and nimbleness to keep pace in a rapidly changing world. Some argue that government organizations are too large and complex to apply agile practice and long-term planning faces challenges that call for rapid adaptation to environmental changes and unexpected organizational demands (Mazzucato & Kattel, 2020). However, such explanations tend to overlook the fact that government organizations have applied agile practices efficiently in a variety of situations – most notably during times of crisis (Hämäläinen et al., 2012).

The VUCA environment shakes government organizations, particularly the established bureaucratic traits and routines. The difficulty of hierarchical planning and logical decision-making in coping with complex societal problems is not new to public governance scholars (Lindblom & Cohen, 1979). Bureaucracy creates jobs that are narrowly defined and highly specialized. Organizations' willingness to take risks is dwindling and work processes constrained, making the organization less responsive to environmental changes. Organizations are moving toward increasing workplace democracy, decentralization, task orientation, and autonomous units (McHugh et al., 2001; Piening, 2013). There is a consensus among researchers that several organizational practices that have evolved up against the growing complexity and uncertainty of the socio-economic environment could be applicable in private and public environments (Barrocca et al., 2019; Hämäläinen et al., 2012; OECD; 2015).

Lindblom (1959) argues that rather than logical, extensive analysis, evident policy-making processes are distinguished by gradual analysis and decision making or "muddling through." Although muddling through processes has proven to be more successful than

hierarchical planning when it comes to complicated policy issues, it has its own set of flaws in the continuously varying policy environment. When major changes in society or the environment involve more fundamental policy direction adjustments, a focus on incremental changes may lead to sub-optimization and path dependence (Lindblom & Cohen, 1979). When embracing agile practices to the public sector context, OECD (2015) distinguishes four features of public policy actions and decisions that must be considered. First, government policy initiatives are fundamentally political decisions, and political primacies major when aligning governmental priorities. Second, government organizations do not represent a single monolithic structure, but networks of large organizations. Therefore, the coordination of a shared policy agenda, with agreed objectives and activities together with multiple organization provide challenges. Third, with government organizations, policy implementation involves mixture of wider policy tools, such as budgets, human resources, and technology which are all governed by guidelines and regulations and an institutional framework. Moreover, government organizations cope with manifold high-risk awareness. In addition to risks that comes with public sector features, there are various overall risks that threaten economic and consequently risks from the private sector are frequently institutionalized and absorbed by government organizations (e.g., the support of the private banks during the economic crisis). Finally, governments are eventually accountable to the public, and successful transformation and cultural change request intervention from both the public sector and the public in general. This feature differentiates between public policy and large corporate decision-making, where the margin of error is much higher.

Nonetheless, agility can be seen enhancing the efficiency of the public sector by enriching government organization's ability to seize opportunities and attain goals. To embrace agility, Winter (2012) suggests that government organizations should collaborate across boundaries (both inside and outside the organization), reflect their impact, foster an experimental culture with multidisciplinary teams that can keep up with the pace and act in agile manner. Given the internal and external factors at play, it may be unrealistic for government organizations to be perceived as completely agile, but by adopting some

agile traits, government organizations could approach changes as opportunities rather than pitfalls (O’Leary et al., 2017; Eggers & O’Leary, 2017). Variety of “tools” already exists and the current trend in the public sector is increasing. Alternative service delivery models, such as the market-type instruments, the co-creation and co-production, have been already investigated (OECD, 2011).

2.3 Theoretical framework: Approaching VUCA environment with Enterprise Agility in the public context

The literature review discussed research regarding dynamic VUCA environment and enterprise agility. The following conceptual framework, in the figure 5, summarizes the concepts discussed in this chapter and acts as a guide in the following research steps to gain a profound understanding of enterprise agility in the uncertain, high-velocity environment.

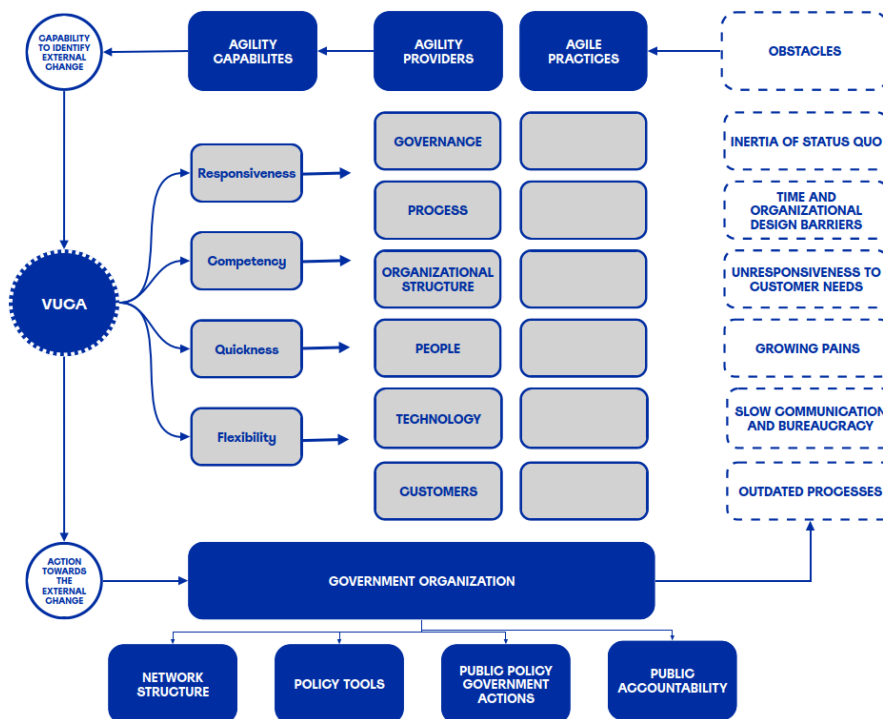


Figure 5. Theoretical framework.

3 Methodology

3.1 Research approach

Empirical research is based on theoretical research methods that have been refined over time. When intending a research study, the methodological fit is a critical overarching criterion for ensuring the research's quality (Edmondson & McManus, 2007). The methodological approach taken in this study can be described through the research onion framework. Saunders et al., (2019) proposed the research onion (see figure 6) to explain the various stages of writing a dissertation. The research onion provides an extensive representation of the six layers or stages to be accomplished to formulate an effective methodology. The research methodology begins with the fundamental philosophy definition, then moves on to selecting approaches, methods, strategies, and the setting of time horizons, all of which guide the study design, including the key techniques and processes for data collection and analysis.

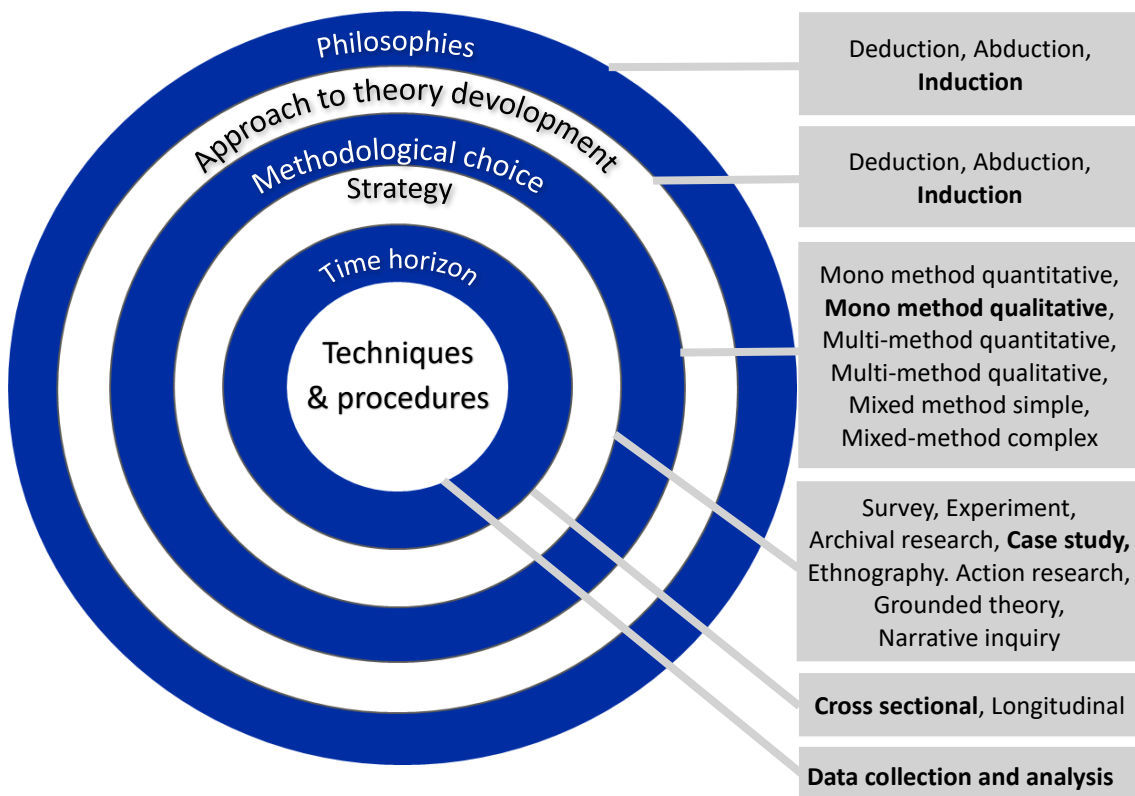


Figure 6. Research onion (Saunders et al., 2019).

The observation of the research onion begins with the outer layer of the figure, where research philosophies outline the way, the researcher views the surrounded world. From a historical point of view, two classical or mainstream may be distinguished – positivist and interpretivist, and three relatively recent – pragmatist, critical realist, and postmodernism, positions of scientific research philosophy (Saunders et al., 2019). This study adapts interpretivism as a research philosophy as interpretive research aims to create new, richer understandings and interpretations of social circumstances. The selected view emphasizes people's thoughts and ideas as it is essential to draw a holistic interpretation of the participant and their actions, thoughts, and meanings. Accordingly, this philosophy emphasizes qualitative analysis and tries to discover what some people think and do, what kinds of challenges they confront, and how they deal with them. The major concerns of interpretivism are linked with the subjective nature of the approach and the researcher's own prejudice (Edmondson & McManus, 2007).

Saunders et al. (2019) present three options deduction, abduction, and induction to theory development. The deductive approach develops the hypothesis or hypotheses upon a pre-existing theory and then formulates the research approach to test it (Silverman, 2013), while the inductive approach allows the researcher to create a theory rather than adopt a pre-existing one as in the deductive. In an abductive inference, known premises are used to generate testable conclusions. Here, inductive reasoning offers the most suitable approach to the study since the study moves from the specific to the general and applies empirical material to the study (see figure 7). Further, aligned with the definition the study aims to build on top of the previous research and contribute to prior literature by perceiving certain circumstances through qualitative interviews (Gioia et al., 2012).

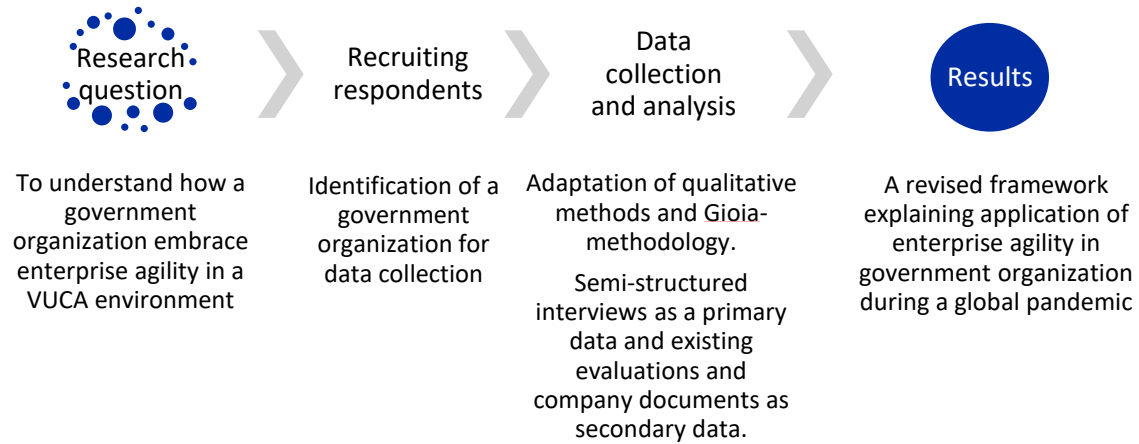


Figure 7. Induction approach adapted to the study (Saunders et al., 2019).

Regarding methodological choices, mono-method qualitative study methodology is employed in this study. As the objective is to gain information on enterprise agility and *how* government organization apply agile practices in a VUCA environment, qualitative data is needed. Qualitative methods are used to provide a profound understanding of concepts, opinions, or experiences. Additionally, qualitative research is the most appropriate approach here as there is little prior knowledge of phenomena. Qualitative research allows the study to generate new insights, explore causal relationships in real-life scenarios, and information based on people's experiences (Sandelowski, 2004; Saunders et al., 2019; Edmondson & McManus, 2007).

Further, the research onion suggests various strategies to conduct the work. This work takes the form of a single explanatory case study due to the possibility of making the needed in-depth analysis. The strategy is chosen based on the data required for the study and the study's purpose. A case study research strategy is frequently used to explore new theories, issues, or management occurrences. Piekkari et al. (2009) argue that a single case study provides more richness and depth than a multiple case study. Since the study aims to understand the research objective better, a single case study is justified. Regarding the time horizon, the study is carried out to investigate agility at one point in time, making it a cross-sectional study (Saunders et al., 2019).

3.2 The case company

The case company Business Finland is a Finnish public-sector organization offering innovation funding and internationalization services as well as promoting tourism and investments in Finland. The organization employs 713 experts in 42 locations worldwide and 16 locations in Finland (Business Finland, 2022a). Business Finland, which belongs to the Ministry of Economic Affairs and Employment administrative branch, began operations at the beginning of 2018, when the operations of its predecessor organizations, Innovation Finance Center Tekes and Finpro Oy, were merged. The establishment of Business Finland aimed to simplify business services, internationalize the innovation system, support increasing the exports of SMEs, and support regional services with a robust national player. The consolidation was also strongly influenced by the more comprehensive Team Finland network development¹ (Halme et al., 2021).

The administrative structure of the Business Finland is formed around two bodies: a government *Innovation Funding Agency Business Finland* and a government corporation *Business Finland Oy* controlled by the agency. The Funding Agency and the corporation forms together a functional entity that is managed with a common strategy. The Agency's performance agreement also applies to Business Finland Oy. A corporation as itself is a group consisting of Business Finland Oy, FinChi Innovation Center Company Ltd in China, USA Inc -business company operating in the USA and Finpro Finland Oy, which currently has no actual operations. The Funding Agency on the other hand also manages of the capital investment company Business Finland Venture Capital (BFVC) Oy (Business Finland, 2022a). Business Finland makes innovative use of the unique features of the agency and company form to achieve the desired benefits. The Agency acts as an interface towards policy guidance and provides well-established procedures to ensure the responsible use of public money while the special-purpose company meets companies' needs in the customer interface and aims to be a dynamic and attractive employer to

¹ Team Finland Kärkihanke 1: Team Finland -verkoston vahvistaminen yhteistyötä tiivistämällä. Toimintasuunnitelma strategisen hallitusohjelman kärkihankkeiden ja reformien toimeenpanemiseksi. Hallituksen julkaisusarja 13/2015.

top professionals. The scope of this study is limited to examination of Business Finland Oy and Funding Agency Business Finland.

Business Finland is a key public player in research, development, and innovation financing and the promotion of internationalization of exports and companies, foreign investment, and foreign tourism. Business Finland's core tasks are defined by law (Act on Innovation Funding Agency Business Finland and a limited liability Company called Business Finland 1146/2017), in addition to which the work is guided in particular by a performance agreement and other guidelines to be concluded with the Ministry of Economic Affairs and Employment (Finlex, 2017). The role of Business Finland's strategy is to guide the company's day-to-day work to direct its investments to the most impactful and productive ways of operating. Business Finland's strategy was updated during 2020 to reflect the changing operating environment: business is no longer just a matter of economic growth and competitiveness, but also of enhancing sustainability and resilience. As a result, economic growth, sustainability, and competitiveness became the core areas of the strategy (Business Finland, 2022b).

During 2020, Business Finland's organization structure, presented in the figure 8, was also renewed. With a new structure clarity and greater customer orientation were pursued. A new management team was appointed, and a new customer management unit was established same time while an internationalization service unit was strengthened. The organization under the new strategy was confirmed by the Business Finland Board of Directors in late 2020 and taken into action on 1st of January 2021 (Halme et al., 2021).

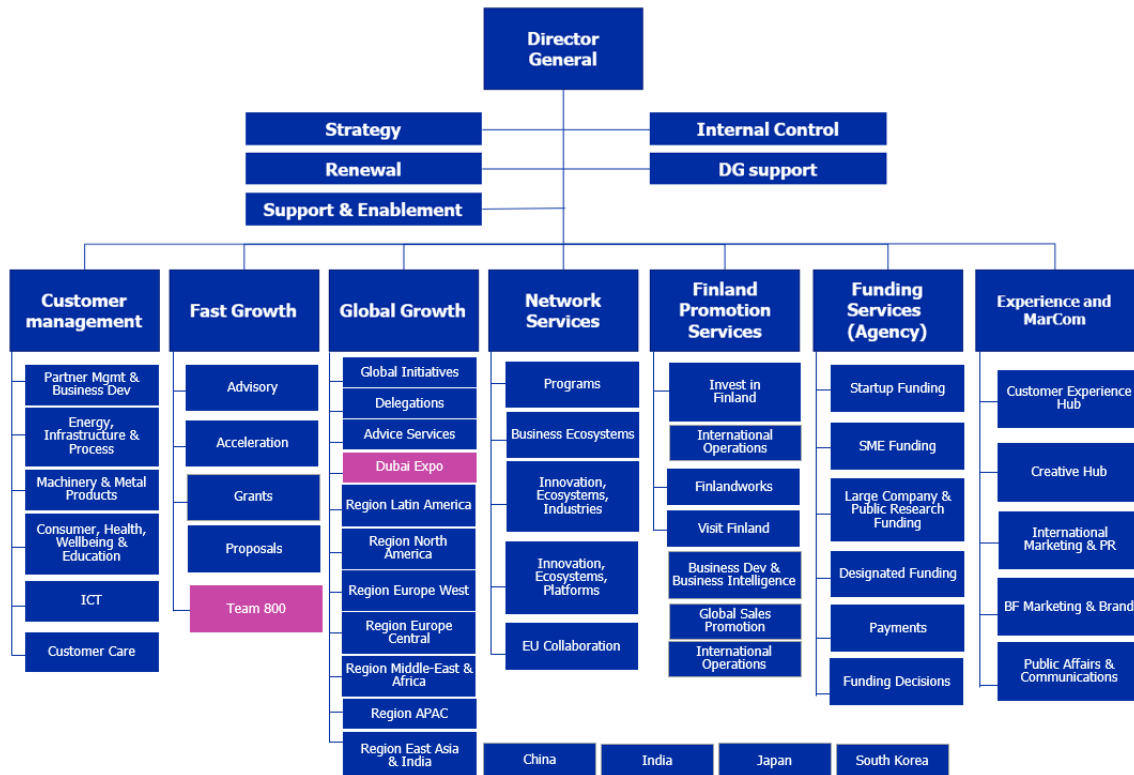


Figure 8. Business Finland's current organizational structure.

3.3 Data collection

Multiple data collection methods were used to ensure rich data foundations and enable exploration (Yin, 2009; Eisenhardt, 1989). Primary data was collected through semi-structured interviews. The interviews were utilized to uncover not only organizational changes, but also fundamental organizational culture shifts and standpoints that cannot be discovered with mere surveys. Further, semi-structured interviews allowed the interviewer to follow interesting themes that may stand up during the interview (Saunders et al., 2019). Interviews were iterative by nature, implicating that data from previous interviews were considered when conducting further interviews. The interview's open-ended questions allowed for the gathering of comprehensive information regarding the subject (Eriksson & Kovalainen, 2008), as well as casual and conversational interviewing style. All of the interviews were conducted through Microsoft Teams within three weeks between February and March 2022. The validity of the research was reinforced by video recording all interviews (Hirsjärvi & Hurme, 2008). The same themes were discussed in

each interview; however, the order of the questions may have differed depending on the responses of each interviewee (see Appendix 1). The interviews were conducted in Finnish as it was the native language of all the interviewees, so besides the content, the interview style allowed to capture feelings and emphases.

A total of 12 interviews were conducted. The interviewees were selected based on their relevance and contribution to the studied phenomenon to increase research quality and objectivity. All organizational levels, from the executive leadership team to advisors, were considered to gain diverse perceptions on organizational capabilities, the response process, and impacts. The background of the candidates and their history in the organization were also considered in the selection criteria. Among the interviewees were selected persons with a strong Business Finland background from Tekes or Finpro and those who joined Business Finland more recently during the COVID-19 pandemic. Thus, there was a possibility of getting deeper into the issue and finding casualties that had occurred and might not otherwise be recognized. A complete list of interviewees profile and durations of interviews is attached in the Appendix 2. Due to sensitive information provided, interviewees were told that their answers would be kept anonymous and that quotes would be used so that they cannot be link to the respondents. It was also agreed that certain information provided by the interviewee will not be published in study if the data was shared only to gain a greater understanding of the situation. The interviewer's responsibility was to ensure that the conversation did not veer off track in search of truthful information other than the arising themes.

Besides primary data, secondary data sources were used in this study. This is supported by Yin (2009), who argues that various data sources increase the reliability of a case study and enhance the holistic view of substance. Particularly for this aim, secondary data counting annual reviews, financial statements, company evaluations, organizational strategy, and official website, were encountered.

3.4 Data analysis

The study's exploratory nature follows the inductive line in empirical data collection and analysis. As data collection and analysis are interlinked and closely related, observation notes, covering observations on body language and emphases, were written down during the interviews. Following the interview, the data analysis proceeded to transcribing process. All interview recordings were transcribed to text format right after each interview as it is proposed that the qualitative data analysis should be carried out promptly following the primary data collection (Farquhar, 2014; Eriksson & Kovalainen, 2008). Observation notes written down during interviews were combined with transcripts during the transcribing process. Here, interviewee scenes were also shaped to comprehend the interviewee's perspective further. The interview transcripts totaled 145 document pages.

Structuring and categorizing complex qualitative data are critical actions for identifying and concluding schemes (Saunders et al., 2019). Therefore, it is justified to analyze extensive data set in a systemic manner, empiric data were coded into themes and dimensions by using Gioia methodology. The foundation of the first-order concepts was built by recognizing common and frequent phrases, words, and terminology of the respondents. The second stage looked more closely at the first-order concepts to see any connections or patterns between them as the second-order themes originate from the researcher's theoretically based interpretations and the participants' words at a higher level of abstraction (Gioia et al., 2012; Charmaz, 2001). Finally, the last stage was to create aggregate dimensions that represented a higher coding abstraction level (Gioia et al., 2012). After that, the answers to the research questions were systematically compared to the presented theoretical framework.

3.5 The assessment of the quality of the data

The validity and reliability of the conducted study are emphasized to ensure the quality of the research. Internal validity, construct validity, external validity, and reliability are the four main criteria recognized to assess the rigor of field research (Gibbert et al., 2008;

Yin, 2009). The reliability of a study is determined by the extent to which data collection procedures produce consistent results (Yin, 2009). Previous literature has acknowledged four threats to reliability (Robson, 2002). The first deals with participant error. Participant error refers to interviewees' partial responses because of the interview's circumstances. The second, participant bias, befalls when Interviewees' responses are influenced by what they believe there are expected to answer, while the last two observer's errors and bias involve different outcomes as a result of different interviewers and their questioning styles. Here, the feelings and perceptions of the interviewer have an impact on how the results are interpreted.

To avoid these reliability intimidations and increase the reliability of the study, the participants were contacted by email with the exact accompaniment text and theory links. Participants were able to affect the time of the interview, and they were encouraged to give honest responses as the anonymity was ensured. All interviews were recorded, and the data collection process was reliable, not only by using the same interview guide but also by using the same communication channel. The semi-structured interview also helped the observer in avoiding misconceptions. Further, the research process is reported in a methodology section, and the analysis is linked with references to theory to achieve reliability and transparency.

Validity as such refers to the ability of an indicator to measure the intended actions (Edmondson & McManus, 2007). In this sense, validity considers the data's accuracy, which can be threatened in multiple ways. Construct validity refers to the quality of the conceptualization or operationalization of the relevant concept. To improve the construct validity, the study highlights a transparent chain of evidence that allows the reader to comprehend the whole research process from the initial research question to implications. Further, multiple data sources were applied to gain diverse perspectives, and rise discussions. The assumptions and findings were follow discussed with representatives from the case company to ensure that the data was accurate (Yin, 2009; Eisenhardt & Graebner, 2007). Nevertheless, according to Yin (2009), the greatest validity challenge

comes with explanatory studies aiming to observe causal relationships. Internal validity is directly addressed in such evaluations. To tackle this, the theoretical framework was drawn from multiple previous studies (Eisenhardt, 1989).

The problem of determining whether the findings of a case study are generalizable is addressed by external validity. Single case studies, in general, are criticized for being a poor foundation for generalizations (Yin, 2009). Hence this study adopts analytical generalizability instead of statistical generalization, highlighting empirical observations to theory (Gibbert et al., 2008). To enhance researchers' sampling choices clear rationale for the case study selection and sample details on the case study context are provided.

4 Findings

4.1 Agility driver

The operating environment in January 2020 was marked by great uncertainty and volatility caused by the COVID-19 pandemic. On an organizational level, this meant significant changes in both operating environment and internal operations. On March 2020, Finnish Government decided that a significant part of the initial corona fundings will be granted through Business Finland. When the participants were asked to describe the operating environment and Business Finland's responses, the majority commented that Business Finland had certainly not been prepared for the global pandemic and the resulting economic freeze. However, when the unexpected situation came into play, interviewees agreed that the organization succeeded to react to the disruptive change with agility, despite the fact that the general experience of Business Finland's agility before COVID-19 outbreak was twofold.

"I would argue that we are like exceptionally agile." (Interviewee 1.)

"Business Finland is far from agile. if you put 1—10 on a scale, then number two and number one if 1—5." (Interviewee 2.)

"Whether it is about Business Finland or its predecessors Tekes and Finpro, agility is not necessarily the very first attribute that comes to mind when talking about, for example, our internal work before the COVID-19." (Interviewee 4.)

"I feel like we have always been quite agile, change-friendly, and development-oriented. However, we may have had such a problem in between that we always start looking for new things with real enthusiasm, but pretty soon they are a little left out." (Interviewee 12.)

"From an organizational perspective, this [agility] is also a twofold thing. That is, this team Corona and Team 800² show that there is need and ability for agility ... but then we have those established practices where this type of agility is not shown in the same way at all." (Interviewee 8.)

² Team 800 is a temporary project organization founded for the purpose of managing the BF funding services for customers' business development in disruptive circumstances, established during the corona pandemic.

“The first tranche of 30 million was announced on television on Monday, March 16 at 5 p.m. The funding application opened online on Wednesday night and the first decision proposals was made already on Thursday, if it is not agile then what is it” (Interviewee 2.)

By Wednesday of the following week, all the money had been spent, and on Friday, Parliament decided on additional funding of € 670 million. Later, additional funding was received in two tranches for another 280 million, bringing the total to 980 million. During the spring and early summer, Business Finland received about 30,000 funding applications. This meant that the old ways of doing things in the organization were not suffice.

“This was a really interesting situation, because we normally make just under 7,000 decisions in one year, which means that the number of applications was equivalent to three years.” (Interviewee 1.)

The agility of action in a crisis cannot be denied and interviewees’ experiences of agile response in a crisis are indeed supported by an external evaluation commissioned from Business Finland, which states that Business Finland has been particularly active in participating in “national corona work” and has shown particular agility and flexibility in this work (Halme et al., 2021).

4.2 Agility providers and practices

Six agility enablers stand out from the interviews. Each enabler not only helped the company to navigate through the COVID-19, but also show the principles on the road ahead to more resilient operating model that can withstand the new normal. the way to a more agile operating model that can be more resilient in the new normal. Most of all, these enablers evidence past resilience as well as a level of future readiness.

4.2.1 Governance – A common goal and clear communication

A common view amongst interviewees was that a shared north star embodied across the organization allow people to feel personally and emotionally invested during a crisis. On an organizational level, this relates to a common goal and clear communication. For

example, one interviewee said: “to succeed we need to be clear about the state of mind that we are striving for now”. As the below quotes elaborate further, in front of a specific task, Business Finland did particularly well as the actionable strategic guidance was clear. Rapid, cross organizational exchange of information played a significant role, as the need for information increased in- and out-side of the organization.

“I never remember seeing us before, as if everyone realizes at the moment that there is such a big place now that we now have to organize these jobs of our own teams so that we can free people for the corona funding work. And what was phenomenal was that there were so many people from there, in vastly distinct roles, who signed up.” (Interviewee 6.)

“For example, in the case of the Team800 project organization, it really was in the beginning that the management team met every day from Monday to Sunday, sometimes twice a day, and maintained that status information. HR, marketing, and communications were also present. It looked at the challenges that arose and how the project progressed...joint meetings were also organized for the staff to inform them about current issues and to resolve acute problems or policies.” (Interviewee 6.)

Further a flexible resource allocation, speaks out about Business Finland’s agility during a COVID-19 outbreak. Business Finland did not only recruited tens of new employees from outside Business Finland to response, but also involved experienced BFER, through job rotations and other rearrangements.

“It was not delivered according to organizational boundaries or by unit, but everyone who was able to nail the work was caught. And I think the fact that people who had some experience or people who had no experience were willing to take that job. And the fact that these trainees and retirees were willing to return spoke of such an agility-related trait, and a desire to serve customers in a situation that requires such stretching and exceptionality.” (Interviewee 5.)

Noteworthy regarding governance, the collaboration with guiding ministry and other authorities intensified. The findings show that, in addition to the organization's governance model, meaning and communication, it must be clear and agile, the well working governance and actionable strategic guidance is needed with external authorities. Closer co-operation, especially on the compliance side, has been perceived promoting agility, and it is hoped to continue to be close in the future. However, there were some negative

comments about ambiguity regarding the division of responsibilities between different authorities.

“It may not have been so clear and straightforward that what role each cooperation forum played, that is, who controls, when, what and in what way” (Interviewee 3.)

“[Other large governmental organization] was pretty stuck. They had no idea how they communicated all this. Similarly, [Other large governmental organization] and others. The model or the person being asked was not really thought through by anyone - who is it that takes responsibility for them and answers the questions that arise.” (Interviewee 7.)

Altogether, three interviewees highlighted the challenges in co-operation with the authorities at the beginning of the crisis as the clear accountable roles were lacking. One Interviewee brought out that as the chain of command and the responsible authorities were not clear, updating up-to-date information required on the individual level an unreasonable amount of work. Another considered that Ministry of Economic Affairs and Employment did not properly discuss with Business Finland what should be done, and this contributed to the challenges at the customer interface. The majority of participants agreed still with the statement that clear communication with customers was challenging because the situation was new to everyone, and Business Finland did not have experience in working with the new customer companies operating in the domestic market and new customers also did not have experience in working with public innovation actors such as Business Finland. Similar findings can be found from a report published by the National Audit Office of Finland. The report shows that the division of labor between the various authorities came into force from an administrative point of view in a very short time. The simultaneity of the forms of support led to some extent overlapping subsidies and problems of interpretation of how other subsidies should be taken into account on particularly on funding decisions (VTV, 2021).

4.2.2

4.2.3 Process -Rapid decision making and learning loops

The most effective processes were those that occurred in rapid cycles of thinking, doing and learning. Business Finland's capability to innovate and develop process in an agile manner during a global pandemic was boosted by this integration of Lean startup ideology where attention was given also to learning and measurement. As one interviewee put it in a crisis Business Finland shifted the fundamental mindset from doing the things right, to doing the right things.

“A tunnel-like tracking model was developed to distinguish how many customers were approaching us, how many applications were coming in, how many applications were in the service, how many applications had been moved to the processing stage? At the decision stage we were able to recognize all the time those bottlenecks. The process image was like online and that is what we went through in March like daily. It did not take long to set it up, and it helped us a lot when we saw, for example, that we have ten decision makers, and if we got five more, we would be able to get rid of the bottlenecks.” (Interviewee 2.)

“... then the fact that it had such a quick feedback loop all the time among the employees. If it started to look like the pace of the project handler was slowing down then there was a quick regression; we called, asked, and reckoned out what the situation was about and why.” (Interviewee 6.)

Findings display that when the basic processes and legal knowledge of what is possible and what is not exist, rapid process reform is possible. In this way, the time required for decision-making was also reduced as it was possible to identify the critical stages of the process and decision-making. Closer examination of the results reveals also that, part of the redesigned processes / practices have been able to be implemented for wider use within the organization, which has contributed to Business Finland's enterprise agility more widely.

“...and then the other thing is that yes, we have a completely different, better way of approach to orientation and counseling than before. The spring two years ago showed with those individuals who had some experience from funding services, that when volumes grew, competences may not be at the level assumed. Here, as managers, we have to take full responsibility for this, as we had not taken care of the orientation and support for new employees. We, as superiors, must take full responsibility for this as we were poorly cared for in that orientation and support,

and this has been much better handled since then through coaching, clinic activities and peer support. It is not taken too lightly, but it is much more intense. Now we know how to approach orientation much more intensively and we have expanded for example our clinic's activities and peer support activities.” (Interviewee 5.)

“After all, virtual activities like virtual sales events, so you don't have to be a very skilled magician or clairvoyant to be able to say that these will never completely disappear, but these will be left side by side.” (Interviewee 7.)

“At a fast pace, we also had to build surveying, tracking, and rewarding models for how workers are rewarded to be able to finish this kind of tight on schedule, fast-paced project.” (Interviewee 6.)

Another pattern that emerged when discussing on new processes was remote work, and its impact on its internal and external processes. The interviews revealed that with the national remote work recommendation, all of Business Finland's operations changed remote overnight. The teams have surprised their managers with their problem-solving skills and the fact that even larger projects have been successfully completed completely remotely. Latest final report from TOKIO 2021 METSÄ PAVILION, reveal that Covid-19 restrictions and worsening situation in Japan affected the project so, that nobody could travel from Finland to Japan during the whole project (including companies). Due to travel restrictions that prevented traveling from Finland to Japan, new ways of event carry outs were developed. Hybrid equipment and practices were developed so that events in Metsä Pavilion could be organized during the pandemic in hybrid mode (Business Finland, 2022c). Similar examples also appeared in interviews.

“Germany was a good example of that when the market went down, and we had 3 people on our German team tumble straight thinking about what we're going to do now when our biggest sales event of the year went down and all the smaller ones on that side. So, they set off very quickly to build a speed date like a virtual system for the tourism industry to match international buyer e.g., tour operators with sellers here in Finland to trade over Teams” (Interviewee 7.)

“Although the rest of the world was locked down, we still had a large base of Finnish companies in the local ground, enabling us to work with a large group of companies within the market. And we started, soon after, organizing and acting through so-called in-country delegations.” (Interviewee 9.)

The findings highlighted also here the Importance of clear accountable roles and information transparency. As already discussed above daily discussions within the Team800

and other cross organizational crisis teams were essential for the development of information transparency on the organizational level about the COVID-19 crisis and its consequences. However, it was suggested that, whereas Business Finland is obliged to perform its basic statutory tasks also in times of crisis, operational processes should be also examined more critically so that there will not be bottlenecks. During COVID-19 outbreak, surprisingly many of the interviewees felt that, when the organizational focus shifted heavily to the fundings operations, other activities relied too much on the assumption that the old processes would function without any problems remotely.

“...leveling the information, however, requires other means than counting on one appearing at the coffee machine.” (Interviewee 5.)

“The workload was heavy, and things were done hard, but there were also those bottlenecks that it wasn't really known where it would go in the process.” (Interviewee 12.)

“... when everything was pulled from such a physical into a digital customer experience then I felt completely alone. I was alone per how those services are produced? How is the quality of its service guaranteed? ... for this I would have longed for blocks and transparency about what others are doing.” (Interviewee 10.)

4.2.4 People – Culture that empowers

Especially during the corona years, doing good things together for Finland has become a key theme among the personnel. In particular, the freedom and mandate to think about how the surrounding situation affects one's own role and how it should appear in one's own work was felt to contribute to agility through enhanced trust between personnel and leadership team. These findings are aligned with Business Finland's internal surveys which reveal that meaningful work assignments and possibility to influence own work and working environment are valued as first and fourth most meaningful factors at work among BFers (Business Finland, 2022a).

“...with the rotation of work and new tasks, people were more innovative and capable to recognize talents they had not even been able to bring out before. Through this, perhaps we were also able to expand our own expertise a little bit” (Interviewee 7.)

As elaborated by interviewee above, establishment of an empowered culture, enabled the organization to seize the opportunities posed by the COVID-19 pandemic. On the other hand, when talking about roles and workload more, interviewees brought up also resilience and well-being at work as a crucial factor for an empowering work culture. While one interviewee argued that the well-being and resilience of the personnel have been addressed at least well enough during the COVID-19, the others saw that reliance related topics had not been considered at the level they required.

“I would not say that we would not have tried to support change, but the pace of change both within the organization and in the environment have been so great that I somehow feel at least inadequate that we have not been able to support our staff adequately when all these development projects are underway. The employee’s perspective has not been featured enough here and we could have been more proactive, I think...in my opinion, it can also be recognized that plan B managed to do. Those contingency plans were actually managed to do at a fairly brisk pace in 2020, as they were in early 2021, but then in my opinion, there was such fatigue that towards the end the teams could not really cope anymore.” (Interviewee 6.)

“The level of ambition was sometimes quite hard, which was then reflected in the fact that when the crisis was on and the volumes got really high, maybe we should have been much more sensitive to what people can actually do.” (Interviewee 4.)

Taking into account the change history of Business Finland and the underlying major organizational and strategy reforms, as the crisis continued, from the personnel's point of view, the question of how long the crisis mindset can be maintained became critical.

“There is quite a bit of fatigue for change here and then at the same time there is a requirement to be very agile, and ready to do new things in a new way, so it from an individual perspective it is really challenging and energy consuming sometimes” (Interviewee 3.)

The findings call for leaders who empower employees and provide them the opportunity to develop their own self-management. Leaders are expected to act as architects or coaches who not forgetting clear accountability, allow their employees to seek new opportunities. In Business Finland, the COVID-19 pandemic forced a shift away from strict hierarchies towards trusting relationships. Where under normal circumstances the employees have been, so to speak, for the managers, now in the crisis the manager was

genuinely present for the employees. This is kind of servant leadership style with right mindset support the longer-term trend towards agile enterprise.

“The importance of self-management has grown just as it takes on new dimensions and, in fact, especially in expert work, what those people achieve is almost entirely dependent on how people can, know, want and get excited to work and develop... at the same time, it also emphasizes the role of the managers and leaders in the sense that almost all of us always have that important and interesting thing to do many times over the number of hours worked per day. Therefore, someone must be there discussing that only the most important of all that is on the agenda is done first.” (Interviewee 3.)

Taken together, agility and resiliency are indeed necessary attributes, but they must be tempered with humanity. The below excerpt shows how at worst, synchronization can impair empowerment.

“The team does it with a big heart and gets things done and then we start micromanagement and have a different opinion or want to go back to the old way of doing things - start holding referral conversations, I did not agree, how you like that? That's if what eats team empowerment. i.e., then, first the mandate is given you, but then suddenly we want to return to the old. Asynchronous.” (Interviewee 11.)

4.2.5 Organizational structure – Network of empowered teams

One significant factor that arose from the interview data was, that request for flexible and flatter organizational structures proven to be successful during the COVID-19. On such occasion, the team affect at the core of the structure, and team-based working—a fundamental principle of agile methodology—values over the structural hierarchy with regard to velocity, accuracy, decision making, and employees’ fulfilment. On a practical level in Business Finland, the launch and management of Team800 was considered a great success as it fulfilled agile thinking on large scale. Colleagues were invited to support one another and learn new skills in order to help others achieve results fast. This fostered huge cross-functional collaboration, promoting positive feelings of support and achievement. Teams were small and multidisciplinary, self-managing, and completely empowered. The team worked closely with both external and internal stakeholders and

the focus was on building employees' soft skills such as self-organizing, growth mindsets, adaptability, and capability to work collaboratively.

"The team had a clear mandate and permission to create common practices at the level required. In addition, there was also a low hierarchy, in which case work was done for its purpose without such unnecessary layering." (Interviewee 8.)

Simultaneous, large structural changes in the organization and the abrupt shift to remote working due to COVID-19 challenged the traditional approach to team management. Virtual whiteboards, instant messaging, and online meeting tools have been a great asset to collaborative exercises, and they generally encourage participation. However, they required teams to reconsider prevailing norms and shared guidelines. Especially new rules for communicating were created. Similarly, many kinds of activities were needed to create seamless access to colleagues and track and develop spontaneous ideas and innovation. To tackle the challenges new virtual tools, online coffee breaks and chats were created. Further around the organization different dedicated teams with cross functional linkages were established.

"...the websites were absolutely essential, and their update cycle changed completely during the crisis. To that end, we built a direct connection from the counseling team to those who update the website so that the feedback went as quickly as possible without intermediaries." (Interviewee 5.)

"...we had established pretty quickly with this kind of dedicated power team to take care of then again the customer work i.e., the dedicated team and self-selecting"(Interviewee 4.)

"What was really good was the Team 800 risk management team that we set up with and that we worked closely with and that automatically took about 10% of the cases to be dealt with in more detail." (Interviewee 12.)

Although flexible, scalable, and flatter organizational structures were identified as significant agility providers, multiple interviewees mention that the poor commitment to agile principle and cross-functional linkages was challenging and hindered the implementation of empowered networks outside Team 800.

"We may have a bit of that silo mentality in a lot of things we do so that the thing over there is agile, but it doesn't talk to anyone about it, or the thing is agile, but no one knows anything about it ... My experience is that the at the organizational

level is really hard sting things into action. And the same problem existed before the organizational change. Now we have the service areas, but they don't talk to each other properly.” (Interviewee 2.)

Interestingly, one of the most significant findings for the whole study turn out to be the team’s ability to co-create and the mandate represents more than just the expert’s own opinion. When the COVID-19 outbreak, the employees had been given a clear mandate, power, and through it a responsibility to represent a larger entity than just their own current opinion. Through this, the passage of the change in the matrix was also possible.

“I have noticed that if someone comes to express their opinion, it does not mean here in Business Finland that they are committed to that change or that they represent a broader perspective than their own current opinion. That is, if we are talking about such agile development and co-creature, then what is one of the main principles of such agile development is that you represent your line organization and a strong customer perspective and the perspective of your entire unit. That is, if I am invited to a co create workshop and I am a representative, then the expectation is that I have been appointed as a representative of the entire service area to represent the opinion of the entire X service area. In that case, I will tell you that I am going to a workshop like this, I will collect feedback, I will give feedback on the whole service area and then I will come back and remember to tell you what I have said and what I am committed to for all of us. I feel that this is the first time that I have a mandate to represent the opinion of the whole service area, even if it is said so it does not happen in practice.” (Interviewee 11.)

4.2.6 Technology – Match with need

The pandemic has dramatically increased the speed at which digital is fundamentally changing business. Decent basic technological capabilities and previous opportunities for partial remote working enabled Business Finland to quickly secure access to remote working in all regions globally when pandemic hit. Supporting systems and tools, such e.g., Microsoft Teams, ensured that the organization had the right tools to support an agile way of working in the first phase.

“Fortunately, the first wave of digitalization was taken care of, i.e., although we did not have or we do not have much software robotics or artificial intelligence in use yet, we still had an electronic interface with customers and electrified operating processes on our own.” (Interviewee 1.)

It appears from the interviews that the technological agility was particularly evident through well working IT infrastructure and architecture evolution. Especially the rapid start for corona funding was quite a challenge for the Business Finland's information systems and it required collaboration and customer centricity. Backlog improvements, sprint development, a day-to-day status stand ups, frequent customer and user feedbacks allow the organization to make quick decisions and immediately respond to environmental dynamics.

"There were about 600 phone calls a day and I didn't even count the number of emails, but there were a lot of them. We realized there that this advising service needed to be undertaken and yes it does talk about our virtuous readiness that before the processes existed, we had the capability where the implementation of all this remotely was possible carry out." (Interviewee 5.)

"It is an ongoing project where the system is being renewed piece by piece. The change process was made easier because the information system that is used both to apply for funding, and to process funding applications is based on small and freely upgradeable components. The system users are used to that there is only small continuous changes, not any massive deployments." (Interviewee 1.)

"We knew it [service provider] and we also knew our own abilities and the skills of the staff. The dialogical connection was good, we were always aware of where we were going. The information was shared closely, and it was understood at what stage the different processes were at. Overall, it was more managing the whole than only the system." (Interviewee 1.)

Overall, Business Finland made significant digital leap when the pandemic outbreak and the organization moved to a state where technology is at the heart of all interactions within in and outside the organization. A common view amongst interviewees was that the taken digital leap has further accelerated the adoption of new digital tools. Forward-thinking organization should focus on accelerating its competence initiatives by developing leadership and critical thinking skills, enhancing employees' capacity to engage with technology and use advanced analytics, and developing future-oriented services e.g., next-generation procurement and digital marketing and sales.

"After all, this has accelerated the provision of our digital self-services to customers. As an example, I could take this customer analysis tool." (Interviewee 1.)

“Corona forced us to start electrifying that process. Similarly, with customers where, for example, meetings related to financial audits, for example, were held live with clients face-to-face but because of such a corona, it was imperative that those are also considered remote” (Interviewee 12.)

“...the adoption and development of digital tools and all this has certainly made us more agile. We will also be better able to reach, not only our target market, but also the global field and thus achieve a better position.” (Interviewee 7.)

Respondents also agreed that there is no going back to the old, but a new hybrid model and its iteration will be a new opportunity to stand out for the entire organization. When talking about new normal, Business Finland should consider of technology not as a supporting capability but as integral part of every aspect of the organization. Another crucial factor for ensuring production was also the reinforcement and empowerment of senior managers, ensuring the engagement and challenges across the team are experimental enough to continue to learn from their mistakes.

“... and I think it would help everyone if those tools were good! That now that no one can use them, Mfiles in Helsinki is a good example of this, not to mention if you meet global regions, they close their eyes. And how much time we have spent on everything that people still don't even know how to use.” (Interviewee 10.)

4.2.7 Customer – Trust-based relations

The volatility of the pandemic surprised everyone. For Business Finland's customers, especially the year 2020 was a year of survival and recreation. A total of more than 20,000 projects were granted with development funding for disruptive circumstances. The large number of applications was a challenge for customer work. At the same time, the demand for normal innovation financing was also more than 20 per cent higher than a year earlier. What was surprising, Business Finland's SME customers even managed to increase their exports in challenging conditions, despite that the general development of exports for Finnish SMEs was declining (Business Finland, 2021).

Corona funding in particular received a great deal of interest from customers and the media. Due to the exceptionally large number of applications, applications received were

processed on a first-come, first-served basis in seven days in a week to unload the amount. To enhance the process and agility, special attention was paid for communication and transparency. The problems encountered were solved one by one using the sprint thinking familiar from software development.

“... the publicity that it was then that the great hulabaloo set off when the people saw it and the media saw how much money we were being given. In hindsight, however, it was a better decision that we set out to do it so transparently, but it was also a big decision, because we have never done that before, even though the funding decisions are public information. In other words, when a company applies for funding money from us, the amount of funding applied is public information, so we started taking advantage of this injecting it directly into the public to get rid of the rush caused by individual inquiries.” (Interviewee 2.)

“The first numbers when discussed were around 30 million. Well, the end result we all know is that it was about roughly a billion euros. And the opening of the application service, of course, contributed to such a tsunami that it completely stalled the process. Then, always piece by piece, simple choices were made to get it back up quickly. However, this always caused a terrible blockage at the next point in the process which had to be resolved next. And so, it was taken forward. In other words, there was no time for such an overall design or to simulate the entire process at once, but due to the circumstances, such an agile development model was introduced, in which one problem at a time was always solved in sprints. When one was ready, preparations were made for the next day's sprint.” (Interviewee 1.)

“The website was a really good example, i.e., we made own website for corona funding and then when it was noticed that they didn't work we started to change them. We redesigned the website at least 3 times with customer feedback from March to June to guide customers through our process.” (Interviewee 2.)

“If I recall correctly, the customer portal opened on late Wednesday 18th of March, 2020 or on Thursday 19th of March, 2020. Immediately in April 2020, the first clinics were organized for the clients as we noticed that the need for more detailed advice arose from the new customers. In about a month's time, other stakeholders were also involved, i.e., Finnish entrepreneurs and development communities with whom online trainings were held, in order to enable them to respond to their own customers about Business Finland's Funding Services. And as of now, we are further developing this communication model with Team Finland.” (Interviewee 2.)

“Auditors named by the Ministry of Economic Affairs and Employment discovered the fact that the guidance from Ministry of Economic Affairs and Employment was really deficient in the current changing environment, which led to the creation of “logbook”, describing on how we should act in any possible situation. The document was available for employees, and it was editable, meaning that there was

conscious risk that the guidelines might change, and the challenge when changing the guidelines was that it was not known, for example, whether a previously made funding decision had been made with the old guidelines. BF has prepared an internal manual based on feedback from customers and internal development work. The manual describes the procedures and funding conditions at different stages of the processing process. In addition, the manual contains typical issues that recur from one funding decision to another and includes examples based on operating system guidelines.” (Interviewee 2.)

Corona funding also received widespread criticism. It has been argued, among other things, that funding has been provided to companies that were not most in need of support. With the criticism, the clarity of the funding criteria, the appropriateness of the processing process, the compliance of the decisions with the regulations, the criteria for granting and rejecting, the processing times and the compliance of the practices were examined in the first instance by BDO Auditor. The performed audit provided Business Finland with clean papers. Of the 9,000 funding decisions reviewed, only a few where observations were found that required further clarification. Business Finland responds to the feedback by increasing control measures subsequent steps in the processing process so that the observations found would not repeat (BDO, 2020). Further, according to follow-up audit in spring 2021, Business Finland's model for internal control for corona subsidies was comprehensive and well organized. Based on the audit, Business Finland has been successful in the clarity, adequacy, and communication of the customer's instructions and advising (BDO, 2021). Transparency, open channel reaching and active action, in turn have resulted in achieving competitive performance and further social and economic impact.

Moreover, also Business Finland's "old" customers, were affected by the pandemic and new practices to face the customer were also needed outside of Team 800 and funding operations. Despite the huge impact COVID-19 had on the business of Business Finland's customers, it has been a business enabler like never before: new targets have been set and achieved followed by further iterations for new aims.

“We managed to get a Finland travel pro platform that is an e-learning platform intended for our international tour operators. The platform is something that I am not fully sure would it have been invented without the pandemic, or at least it

would have not been created with this schedule without the pandemic.” (Interviewee 7.)

“...it was decided that the resources would preferably be used in a way that if and when the dust settles, we will have the tools in order, and this was the starting point, for example for the further development of [service] websites. The website Version 2.0 will be appropriately developed, so that it gives access to the next generation of customer work.” (Interviewee 4.)

4.3 Impact of Government organization

In the final part of the interview, respondents were asked to examine the government organization role and impact for Business Finland’s agility during the COVID-19 pandemic. The findings argue that COVID-19 pandemic provided an opportunity to see proof of agility in government organization and learn about its principles. Despite the recognized public organization features, Business Finland proved ability be responsive and nimble in the time of crisis. Based on the interview data; legal framework, political guidance, budget, network structure and obligation of transparency emerged as public organization features that have the most significant impact on enterprise agility in the VUCA environment. The observations agree with the results reported by OECD (2015). The legacy and legal framework were the only notable exception here.

The participants on the whole indicate that organizational complexity and legal framework were the main internal forces for resistance to make a government organization agile.

“Legislation in particular is always a bit that has affected us and is rigid and slows down our activities” (Interviewee 6.)

“One such factor influencing agility is that there are certain things that need to be done and documented according to the law” (Interviewee 10.)

“...the laws associated with this. As a concrete example, tendering and procurement is a clear entity that is perceived to slow down” (Interviewee 7.)

However, as one of the key findings, in time of crisis it became evident that the force behind many practices or rule is the organization's own habit not legislation or other feature that comes with performance agreement.

“Our type of actor fundamentals of legislation is at a very high level, and in a crisis, we have experts who will be able to apply the law, regulations, rules related to the management of public administration activities quite quickly if necessary” (Interviewee 4.)

When discussing on complexity further, the majority of the respondents agreed that agency-company structure was useful during a corona pandemic, only one of the respondents argued that it would be clearer if Business Finland were just a company or an agency.

Next feature that emerged from the interview was policy tools i.e., budgets and human resources. Although the budget and resources limit the organization's operations under normal conditions, from the point of view of Business Finland, the preservation of the existing budget and resources brought security and agility in a crisis.

“During the corona, it is so that they have all been able to keep our jobs and we have been able to continue doing business as usual.” (Interviewee 7.)

“...in terms of strategic agility, a larger organization like this that is able to reorganize resources like this has proved its worth.” (Interviewee 3.)

“Money talks is here always the financial issue that, of course, affects our planning a lot on an annual basis. When our budget comes from the Ministry of Economic Affairs and Employment it is, of course, one that causes headaches every year when we are not able to make much of an impact on ourselves, except when we are lobbying for different actors. But then, on the other hand, there are years behind us where we have received additional funding and we have been able to make additional investments, acquire more resources and new markets.” (Interviewee 7.)

Further, a common view amongst interviewees was that role of policy government activities has increased and thus played significant role also during a COVID-19 pandemic.

“In other words, we now get orders that are very detailed, in a way, from performance management and political guidance. And they often show up in our budget guidance as well.” (Interviewee 3.)

This view was echoed by another informant who argue that the owner's control has moved step by step more towards micromanagement, where the ministry mutates the service and then entrusts it to Business Finland. In a crisis, however, political guidance was exactly what forced Business Finland to be agile and develop.

Public accountability proved in the crisis the need to work towards the customer in a way that seems fair and predictable. Although the media's interest in Business Finland after the outbreak of the COVID-19 pandemic was enormous, this attention was also utilized to enhance the agility.

"I don't think any private organization or company would do that or have no need to deliver, but for us, public accountability is a prerequisite. I feel the need for public accountability has increased in recent years." (Interviewee 5.)

"...the reality is that we are using Finnish tax funds, and we need to be able to show that we have received value for money." (Interviewee 12.)

"We need to be able to respond to the opinions of citizens and the writing in the media that came and will come. For example, in our team, when we took projects for review, we did make some use of public debates and looked at them simply because they are in the media ... we need to justify things very clearly and give them answers as well" (Interviewee 12.)

Finally, one respondent reported the network structure and external stakeholders as government organization features influencing enterprise agility in VUCA environment. In the case of Business Finland, the Team Finland network and international partnerships came up for discussion. From the point of view of agility, the model is seen as very functional and favorable for a small, open economy like Finland. However, the model is very individual-dependent, i.e., it is good to consider the ambassador's ways of working and the country leader's style of leadership as they have been felt to play a significant role in a crisis. At its best, the model can enable Business Finland to become more agile or, on the other hand, further stiffen operations.

The findings showed that public organization features do not significantly affect enterprise agility in government organization during a COVID-19 pandemic because where

legitimacy and the legal framework might be perceived as an agility-slowness feature, for other features the effect in a crisis situation could at best be agility-promoting. As one respondent put it:

“...many things that now would require re-arrangements, I do not think are hindered by Mika Lintilä. Yes, it is up to us to resolve those issues and I do not think we need more people or more resources or even owner’s consent – that they are in our own hands, and we have the right knowledge, resources and ability if we just start doing.” (Interviewee 5.)

Overall, these results indicate that a comprehensive agile implementation in government organization would be a massive undertaking that would require sustained commitments of energy and resources as well as a focus on the customer’s end-to-end journey. These large-scale change call for perseverance and visionary leaders who push for organizational and cultural change. However, the application of even some agile practices can already have a significant impact on organization’s productivity and customer satisfaction.

4.4 Summary of the findings and the revised framework

This study set out to explore how a government organization embraced enterprise agility in a VUCA environment. Taken together, these findings show that a government organization can be nimble and utilized enterprise agility in their responses to external changes in a crisis. By embracing agile practices, the case organization was able to display uncommon resilience throughout the pandemic. Despite the study recognize government organization features as a frame to the operations, one of the more significant findings to emerge from this study is that behind the rules and complexity that make it hard for government organization to apply enterprise agility at scale is not the legal framework or other features but more the habits. Agility was exposed to be as much about values and principles as it is about concrete working practices, techniques, and organizational structures. However, the findings provides that in government organization indeed application of even some agile practices can have significant impact. Altogether, six agility

providers with embedded practices (see figure 9) emerged from the findings to thrive and sustain government organization's enterprise agility in a VUCA environment.

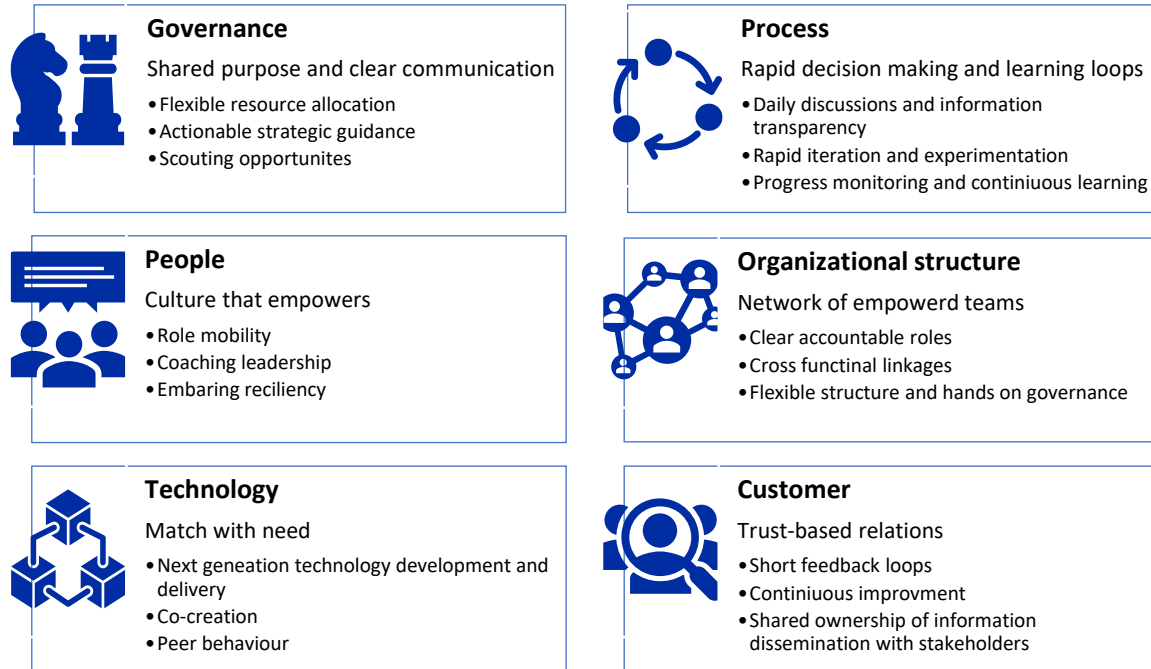


Figure 9. Summary of agility providers and practices.

Another of the more significant findings to emerge for the study is that in a crisis, mistakes are no longer feared; they are anticipated, accepted—and revised through constant iterations. By the given matter, there was a sense of emergency, and the case organization was ready to shift their mindset and gather the whole organization to work towards a shared goal. Compared to “normal” circumstances, during the pandemic employees were set to represent a broader perspective than their own personal expert opinions. The employees had a clear mandate, feedback was collected and distributed more widely among one's own line organization, and communication was more active. Further, in a crisis the urgent need to produce solutions broke down typical barriers within the organization and other authorities. Slow-moving communication was replaced by rapid, cross-functional, and often personal collaboration. Actionable strategic guidance spoke out the shared purpose that embraced the agility. Subsequently, procrastination itself became a risk, and entrepreneurship mindset and lean approach were

valued over hierarcia and long decision-making processes. Leaders collaborated on solutions and abandon the hierarchical model that they may be more accustomed to in normal times in favor of engaging a greater number of stakeholders and encouraging a multiplicity of viewpoints and debate. Participatory decision-making made the entire organization run along one line despite the dynamics of the environment. Moreover, the empirical findings call that empowering culture and leadership that were the most visible in the service areas or unit where the crisis affect the most and agile characters such a strong co-creation, coaching, team spirit and opportunity to influence one's own work were applied. Finally, as the government organization nature brought job security, realigning the organization's resources and capabilities with its highest-priority objectives and initiatives to deliver maximum value outcomes for the stakeholders and customers was possible.

To summarize the figure 10 gathers the synthesis of theory and empirical finding. As expected COVID-19 pandemic added another dimension to the already VUCA environment and the special disruptive circumstances assignment given by the owner was pointed out as agility driver for the case company. The evidence from this study suggests that as the no immediately know relationship between cause and effect of the COVID-19 was known, the most effective response for was found to involve rapid iteration through exploration. The study confirmed the fundamental capabilities of agility by demonstrating with empirical findings that responsiveness, flexibility, competency, and quickness are needed to respond to the need of agility. Additionally, that low complexity, culture of change, integration, and speed were valued and applied in the case context.

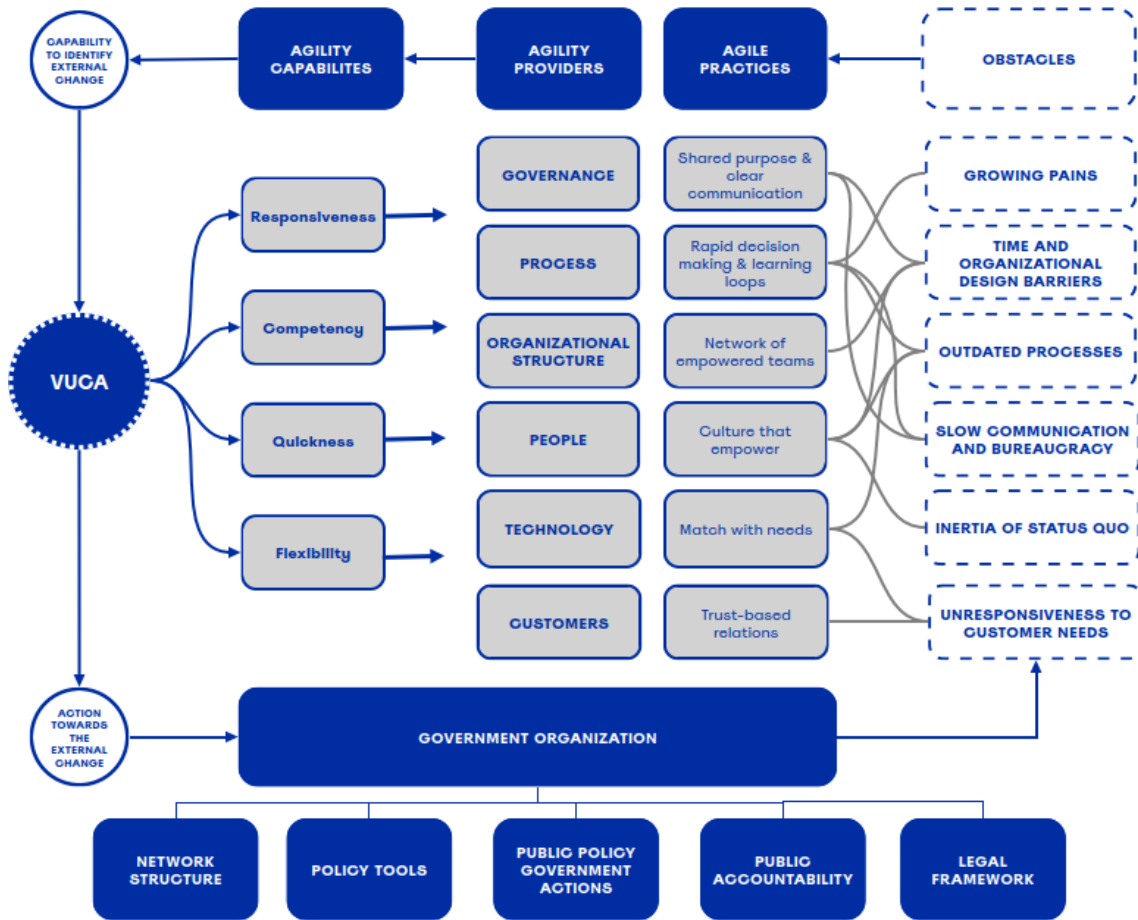


Figure 10. Synthesis of the theory and empirical finding.

5 Discussion

5.1 Theoretical implications

As reasoned in literature review the key issue vital in the field of strategic management is how to become resistant to creative destruction and how to thrive sustainable competitiveness in such a high volatile and uncertain environment (Teece et al., 1998). This study extends our knowledge of enterprise agility in government organization by fulling the presented research caps (Christofi et al., 2021; Kettunen et al., 2019). The current study adds the government organization context to prior research on agility and examines how a government organization embrace enterprise agility in environment where recent changes due to COVID-19 pandemic has contributed especially to the uncertainty and volatility of the business environment. The findings implicate that government organization are not immune to the rate of environmental change and they call for fast actions through experimentation (McCarthy et al., 2019). These findings challenge the work of Mazzucato and Kattel (2020) and despite argued to be rigid, evidence that government organization can have the needed capabilities and capacity to embrace enterprise agility in a crisis. The enterprise agility model, that combines a stable backbone of primary attributes with a dynamic capability for rapid insight and change, is a powerful way of dealing with VUCA challenges also in the government context. In line with Sherehiy et al. (2007), the findings displayed typical enterprise characterizes e.g., flexibility and responsiveness and possess features of cultural change in rapid pace and hence enjoy support in the case evidence.

The current findings extend the revealed government organization features by OECD (2015) and introduced the legal framework alongside the network structure, policy tools, public accountability, and public policy government actions. While the findings agree that prior evidence from a private sector have been acknowledged (Hämäläinen et al. 2012), they need be framed to the features available for developing the government organization. Accordingly, it is somewhat surprising that the organizational features as such did not hinder government organization's ability apply enterprise agility in a VUCA

environment but more often the driving force behind the complexity is a habit. The finding takes the idea of cultural change (Sherehiy et al., 2007) and suggests that developing a culture that empowers people and allows employees to release the inner entrepreneurial drive. Moreover, when discussing on enterprise agility and people in the literature, attributes such as organizational learning and knowledge development arises often (Gunasekaran, 1999; Sherehiy et al., 2007). However, these attributes tend to overlook the significance of the well-being and resiliency on agility. As the findings show with a great level of ambition, the well-being of people may be left behind when the crisis prolongs. If left unaddressed, an attempt to embrace organization's agility could, in the worst case, turn against itself. Therefore, despite its exploratory nature, this study proposes some insight into importance of the emotional components of workforce agility.

Further, the findings challenge the existing literature (McHugh et al., 2001; Piening, 2013) by highlighting government organization's awareness to take risks and learn from the mistakes in a crisis. Interestingly, lean start up methodology, build, measure, and learn, was found to cause the most significant enhancement for the enterprise agility in the VUCA environment (Ries, 2011). Such an approach brought effectiveness also to feedback loops and collaboration within the team network (Mundra et al., 2018). Applied daily discussion, information transparency, co-creation, and experimentation (Sherehiy et al., 2007) allowed the organization to eliminate the common red tape and hierarchy that had resulted in rigid and time-consuming decision-making. Thus, decisions that under normal circumstances could take weeks or even months were made in one day during a crisis when people were not riskware and so focused on doing things "right". One possible explanation for this behavior can be associated with public accountability and the fact that government organizations are eventually accountable to the stakeholders and await permission or acceptance from the range of public (OECD, 2015). Overall, these finding has important implications for developing the concept for "new" normal, as with the speed of change expected to continue, it can be suggested that government organizations should pay attention to processes that help to navigate through the global pandemic and identify caps and complex processes that might hinder the further application.

Finally, this study contributes to existing literature by presenting empirical evidence how a network of empowered teams can provide enterprise agility in crisis. While McHugh et al. (2001) argue that on the public sector majority of the employees are employed in offices across the country and are engaged in routine task within clearly defined roles and responsibilities, the findings implicate that the flexible recourse allocation and cross functional linkages could embrace agility in a crisis while the existing budget and secured resources bring security for the government organization. While the remote working enhanced empowering cross-functionality and involvement of individuals regardless of location (Rigby et al., 2016), the results challenged the involvement, showing that, especially during a crisis, occasional over-involvement could lead to complexity even if the intentions were good. More effort is required to reach a suitable balance, as well as the thrive to continue to improve the behaviors and hence the change. Enterprise agility and agile large-scale software developments both benefit from an organizational-wide approach and an emphasis on sustaining agility (Barrocca et al., 2019).

5.2 Managerial implications

In an organization that is affected by VUCA, managers have a choice. Either one allows VUCA to control and overwhelm them, or one accepts and manages it so that the organization and the team can mitigate its effects. Taken together, the results suggest several principles to make success possible. First, the study shows that establishing a transparent operation model for teams, especially in remote working, was essential to provide straightforward basics. From a manager's point of view, special attention should be paid to leadership style as, in the worst case, leadership style can act as a barrier to team agility. Teams trust their managers and mirror their behavior through the manager, in which case the manager's trust plays a crucial role in the success of team agility. Managers should adopt the role of visionary, agile coaches as their roles are emphasized when teams move and learn agile practices. For employees to benefit from Agile Coach support, the support should be available and visible even in non-crisis situations so that the support can be used more proactively. The important thing is that agility is not done

lightly or ostensibly, making teams frustrated when the desired changes will not succeed. Implementing an agile operating model comes to avoid "gluing on," where agile practices are attempted to permeate the daily lives of teams on top of old practices. It is essential to holistically observe team activities and build own ways for each team to implement an agile operating model. Teams' old practices should be dared to challenge and break to make room for an agile operating model to arise. By "gluing on" agile practices only causes chaos and feels like a theater with an agile operating model at its core, and the benefits are inaccessible.

The findings also imply that as the volatility rises, managers should stop starting and start finishing to ensure employees' commitment and wellbeing. To stay focused on the critical things, teams should maintain a sustainable leap, concentrating on doing the right things. Change requires willpower, so it is important to decide what you want to change and just focus on it. Likewise, learning takes time and energy. Therefore, in development work, it would be recommended to utilize the Lean Startup ideology, to provide products or services that actually meets the needs of customer and stakeholders. The Lean Startup ideology provides right tools for continuous iterations and feedback loops, creating an order instead of energy-consuming chaos. To remain relevant, an organization might need to restructure and re-allocate its resources to new priorities. Therefore, organizations should continue to use the rapid decision-making cycles that were implemented during the COVID-19 crisis, but in a more sustainable manner. Daily stand-ups with the leadership teams or senior directors may be unrealistic, but embracing the mindset where decisions are made in quickly in sprints one by one would sustain enterprise agility. Further, making certain that teams are driven by a clear, empowering purpose and mandate to make which allows employees to participate to the decision making will result in a greater facility to response and thrive in VUCA environment.

Finally, another noteworthy practical implication is that to succeed, organizations need to create a culture that empowers employees and allows individuals to release entrepreneurial spirit. Make time in virtual meetings for informal conversations that typically

transpire in the hallways or by the coffee device. To ensure that meetings motivate and energize the team, do not forget to bring joy and fun to one's daily interactions. By examining previous learnings, the organizations can avoid the same managerial pitfalls and provide insights into which elements of their operating models proved most useful in practice.

5.3 Limitations

Although rich in literature-related elements, this study is not without its limitations. As aforementioned, the main limitation of this study concerns the scope of the study. As the study is carried out in a single organization that operates under a special task, the generalizability of these results to other countries or organization is subject to certain limitations. Furthermore, COVID-19 is a broad issue, and the pandemic is still spreading around the world. Hence, the cross-sectional data collection and vast scope of the subject raises limits for this study.

In addition, researcher bias should be considered, as the findings may be influenced by the researcher's subjective feelings or a lack of research experience. From the researchers bias point of view, it is also noteworthy that the researcher has an employment relationship with the case company at the time the research is conducted. Lastly, a reader should pay attention to a variety of factors that may impact the study's findings as a single case study was conducted. Here, for example, the time, cultural aspects and respondents' roles, and previous work experience could influence the study results

5.4 Suggestions for future research

The focus of this study was to shed light on the government-owned organization and how they applied enterprise agility in a high-velocity environment during the COVID-19 pandemic. As constant change seems to dominate the current business environment,

there remain lots of research opportunities in enterprise agility. Since this single case study provided more knowledge from a unique case study from the government-owned organization's perspective, the next stage could be to repeat the same type of exploration but applying some multiple case studies so that the findings could be more generalizable. Moreover, the study could broaden and conduct in an international context. A comparison or assessment of similar innovation, trade and funding agencies in diverse countries could be the subject of additional research to uncover similarities and dissimilarities between other government organizations and agencies globally in the high-velocity environment. However, this would demand a comprehensive understanding of how the various organizations operate in order to describe how they are equivalent. Further, from the case, the company's point of view, at the time of writing, activated the geopolitical crisis in Ukraine again provides a new kind of context in which to examine enterprise agility. A natural progression of this work could be to study, for example, how the Agile practices and learning identified as a result of this study would have facilitated the organization's adaptation to the momentous geopolitical crisis.

From the theoretical point of view, aligned with Dikert et al. (2016), a comprehensive survey on challenges and success elements for large-scale agile projects is recommended. Here specifically, the perspective of government-owned organizations would perform an interesting survey. In addition, further research regarding the employee's perspective would be worthwhile as most of this study's interviewees operate at the managerial level. Agile activities are considered to increase resilience at work, especially in the face of growing job-liking. Still, especially in an abruptly changing environment, responsibility and chaos resulting from an agile approach can also burden an already marginalized employee. Therefore, it would be interesting to look more closely at how employee resilience develops in an Agile enterprise in the VUCA world.

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Appendices

Appendix 1. Semi-structured interview guide

Service area / Unit:

Basic information:

1. What is your role in the company, how long have you worked in the company?
2. What does your service area / unit do?
3. How did the organizational transformation affect your role?
4. How did you experience Business Finland's agility before the COVID-19 pandemic?

Agility Driver:

5. Describe your own experience when the COVID-19 pandemic began
6. How did COVID-19 appear in your service area / unit?

Agility providers:

7. How did your service area / unit respond to the challenges and uncertainties caused by the COVID-19 pandemic?
8. What kind of agile practices have you utilized in your operations?
 - a. Governance
 - b. Processes
 - c. People
 - d. Organizational structure
 - e. Technology
 - f. Customer
 - g. Others?
9. What do you see as the biggest success during COVID-19 from your service area / unit point of view?
10. Where did Business Finland fail / what would you do differently now in retrospect?

11. Do you feel that bureaucracy, risk aversion or other characteristics of a public organization have limited or facilitated the operation of your service area / unit during the Covid-19 pandemic?

Agility capabilities:

12. What capabilities and values have you found central to organization's success during a corona pandemic?

Obstacles:

13. What obstacles / challenges did your unit / service area face in responding to the change?
14. Do you feel that something within the organization limits / affects Business Finland's agility, what and why?
15. Do you feel that something outside the organization limits / affects Business Finland's agility, what and why?
16. Do you feel that government ownership / other special features of a government organization affect the agility of Business Finland, how and why?

Appendix 2. Interviewees' summary

Interviewee	Service area	Years in a organization	Teams interview duration (hh:ss)
1	Funding	16	58:50
2	Customer Management	20+	46:47
3	Strategy	20+	1:01:45
4	Finland Promotions Services	6	56:14
5	Fast Growth	20+	1:05:09
6	Renewal	11	54:16
7	Finland Promotion Services	14	1:01:36
8	Customer Management	2	53:34
9	Global Growth	11	51:31
10	Network Services	3	59:53
11	Experience & MarCom	2	49:22
12	Strategy	20+	55:26