# Cultural aspects of organizational agility affecting digital innovation

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***Abstract***

*The purpose of this study is to understand how the cultural aspects of organizational agility affect digital innovation capability. In the context of increasing demand for fast-paced digital innovation, organizational agility becomes strategically crucial for large incumbent companies to increase their competitiveness. The literature on organizational agility shows that incumbents, with their vast access to resources, still can have limited ability to innovate and respond to change. This is in sharp contrast to startups, who sometimes are impressively innovative despite their very limited resources. Sometimes the incumbents are even outcompeted and disrupted by startups because of their ability to embrace change, and rapidly seize new business opportunities. However, we know little about why some incumbents are not able to use their resources efficiently for digital innovation and why some smaller startups can transcend these resource limitations. In this context, we find that cultural aspects are especially crucial as enablers for organizational agility in digital innovation. We designed a comparative study to investigate the differences in the influence of culture on organizational agility; and how it hinders or enables digital innovation, at both incumbent firms and startups in the automotive industry. We applied a qualitative research approach and selected semi-structured interviews as our main research method. The Competing Values Framework was used as a tool to categorize different cultures that affect organizational agility, but also to identify how and when tensions between values supported or hampered the organizations' ability to innovate. Our findings show that, while a blend of Hierarchy and Market cultures inhibited the innovation capability, Clan and Adhocracy cultures promoted innovation. In our*

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*sample, the incumbents predominantly adhered to the first two cultures, while the startups typically belonged to the second group. The most successful startups were even able to create a combination of Clan and Adhocracy cultures — a concept we here term 'Agile culture.' This culture allowed them to reach a beneficial state of digital innovation growth. When it comes to the implications for research and practice, we found the need to analyze the role of culture for organizational agility; and how to utilize culture as an asset to enable digital innovation growth. One contribution is the identification of 'Agile culture' that is an amalgamation of Clan and Adhocracy culture. The value agile culture creates when applied, enables organizational agility, which can enhance digital innovation capability.*
***Keywords:*** *agile culture, organizational agility, entrepreneurial culture, competing values framework, digital innovation capability*

## INTRODUCTION

The purpose of this study is to understand the influence of cultural values on organizational agility. The paper reports on a comparative study of startups and incumbent firms in the automotive industry; and how they work with enabling organizational agility to enhance digital innovation. We applied the Competing Values Framework (CVF) by Cameron and Quinn (2011) as a theoretical lens to identify the influence of cultural values on organizational agility, including to identify how and when tensions between values supported or inhibited the organizations' ability to innovate. We defined an incumbent firm as already having a position in a market, at least one or more products available, and to a high extent, financed through company-generated revenue. A startup was defined as being at an early stage in the enterprise life cycle, with no or few products released, and often financed through venture capital.

While the role of organizational agility has been approached from different academic strands since the beginning 1990s, the influence of cultural values on organizational agility and innovation capability in firms has recently gained attention. However, only a few qualitative studies have focused on how cultural values drive organizational innovation. Crocitto and Youseef (2003) noted that research has mainly focused on the technical and/or quantitative side of organizational agility and has had little focus on the qualitative side of how organizations achieve the agility that is crucial to their success. Here, we have chosen a qualitative study for a better understanding of how cultural values impact organizational agility and enable innovation. In this study, we are particularly interested in tensions between different cultural traits, i.e. how they compete. Cameron and Quinn (2011) argue that different cultural values can enhance organizations' ability to act in a flexible

and agile way, but when values compete, this may lead to reduced efficiency. We propose that transformative companies, such as the incumbents found in the contemporary automotive industry, are particularly relevant to study. They need to change their culture to meet the challenges of digitalization and demands for organizational agility.

With its large international actors, the automotive industry was chosen because of its maturity and because they recently have been challenged by newcomers with very different approaches to innovation. The newcomers are "born globals" with the ability to grow fast — largely through co-creating with network partners (Andersson, 2011). Another reason for choosing the automotive industry was because of how digitalization has changed prioritization for automotive industries, especially for industries organized in hierarchical structures supported by a culture that promotes vertical integration (Schimpf, 2016). For example, when the Original Equipment Manufacturer (OEM) Tesla, already in their startup phase, challenged established automakers with their innovation speed and capability it spurred discussions on how new companies can take such a fast leap from a garage startup to a challenger of future transportation (Say, 2017). According to Pontes (2019), the forecast for 2019's top ten best-selling fully electric vehicle brands is: 1. Tesla, 2. BAIC, 3. BYD, 4. Nissan, 5. Renault, 6. Gradually, 7. Chery, 8. JMC, 9. JAC, 10. Hawtai. The European premium brands, e.g. BMW and Volkswagen are replaced by brands of Chinese origin. Just in the USA, Tesla's best-selling vehicle, the Model 3 luxury sedan, not only outsold every other electrical vehicle by at least 750% between Jan–Jun 2019 (Matousek, 2019) but also threatened none EV midsize models of luxury automakers from Europe (Shahan, 2019). The market change is not only a change in technology, going from combustion engines to electric. Another aspect is the company's capacity to enhance digital innovation. Tesla's success can also be explained by their "born digital" approach to innovation: their software mindset has developed the car into a mobile digital platform, where digital service innovation can take place at speed and be continuously deployed over the air (Sebastian et al., 2017). This means that a Tesla car can be seen as an investment by the owner, as mostly everything continuously gets enhanced regardless of whether it is increased engine performance or new services, which become available at no additional cost to the car owner. Digital innovation then becomes a differentiator, a means for global competitiveness. This is radically different from any ordinary automaker where the car value starts to decline as soon as you put in the car key. The traditional automakers normally have their business on aftermarket services adding extra costs for the owner and the bulk of profits for OEMs. Normally, there is a limitation on compliant services that can be added. This is a major mindset change in

innovating products and business models in the digital era. This also leads to radically different user experience and added customer value. This kind of reinvention of how companies do business to stay competitive indicates that an organization's capability to be agile has increasingly become important for innovation among incumbent firms in the automotive industry. This is one of the reasons why organizational agility has become a strategically important competence for these companies in their continuous innovation effort (Yusuf, Sarhadi, & Gunasekaran, 1999). Felipe, Roldán, and Leal-Rodriguez (2017) have shown that organizations often go through a cultural transformation when implementing an efficient innovation process. However, while organizational culture is important in the process of enhancing organizational agility, culture can also hamper such transformational attempts, regardless of whether the company is an incumbent or a startup. Competing cultural values in the organization can reduce organizations' ability to develop agility, thereby reducing their ability to effectively support innovation processes (Felipe et al., 2017; Naranjo-Valencia, Jimenez-Jimenez, & Sanz-Valle, 2011).

This study explores the influence of culture as an important key factor for the automotive companies' to enhance organizational agility by asking the following research question: How do cultural values shape organizational agility when incumbent firms and startups within the automotive industry explore digital innovation opportunities? The automotive industry is particularly suitable for investigating this question because of its long tradition of manufacturing products that is currently challenged by digital innovation.

The paper is organized in the following way: first we review previous research on organizational agility and culture followed by a presentation of the theoretical lens for the classification of organizational cultures, the CVF. The methods section then describes the design of the empirical study involving both incumbent and startup companies in the automotive industry. The result section places the data in context and analyzes the result using the CVF lens. We end with a concluding discussion, limitations of the study, and suggestions for future research.

## LITERATURE REVIEW

The influence of cultural values on organizational agility is a growing field of interest within information systems research. The following section provides an overview of literature on organizational agility, the four core concepts characterizing an agile enterprise (leaders and people, virtual organization, capability for reconfiguration, and continuous learning*),* and capabilities that

enable such agility. Finally, we present organizational culture that leads to the introduction of the Competing Values Framework (CVF).

## Organizational agility

Organizational agility is a firm's capability to manage expeditious, persistent, and uncertain change to prosper in the competitive environments of continually and unpredictably changing circumstances (Dove 2002; Teece, Peteraf, & Leih, 2016). Agility is a dynamic, context-specific, aggressively change-embracing, and growth-oriented system (Goldman, Nagel, & Preiss, 1995). It goes beyond speed and requires massive structural and infrastructural changes (Youssef, 1994). According to Conboy (2009) the definition of agility in information systems is "the continual readiness of an information systems development method to rapidly or inherently create change, and learn from change while contributing to perceived customer value (economy, quality, and simplicity), through its collective components and relationships with its environment." The main driving force for agility is change (Conboy, 2009), and an organization must be able to sense, seize and transform, in order to seize new business opportunities as they arise. Agility and reliance are essential 'soul mates' according to Holbeche (2018). Organizational agility is regarded as crucial for organizations' innovation and competitive performance in contemporary business (Sambamurthy, Bharadwaj, & Grover, 2003; Tallon & Pinsonneault, 2011). In the digital world, organizations are increasingly relying on information technologies, knowledge processes, and communication technologies that enhance their agile ability (Sambamurthy et al., 2003). Agility depends on leadership at all levels to promote agility as an organizational value and create an agile vision and mission (Crocitto et al., 2003). Leaders need to create a supportive culture of innovation, diffusion of information, teamwork efficiency, and employee learning and rewards for agile employees (Crocitto et al., 2003; Kraśnicka, Głód, & Wronka-Pośpiech, 2016).

There are four core concepts that define organizational agility; *virtual organization*, *capability for reconfiguration*, *core competence and management* (sometimes referred to as leaders and people), and *knowledge driven enterprise* (sometimes referred to as continuous learning) (Yusuf et al., 1999). An agile organization can act proactively with fast decision making, and has an ability to maximize its knowledge utilization, which means that it is able to use its competence where it is most needed in order to rapidly re-configure and re-align the business to serve a particular purpose as the window of opportunity opens up. According to Goldman et al. (1995), there are four strategic dimensions of agile competition: A) enriching the customer, meaning selling solutions instead of products; B) cooperating to

enhance competitiveness, meaning to fully apply the virtual organization concept, use whatever resources are needed regardless of whether they are within or outside the organization, even direct competitors could be used to leverage resources through cooperation; C) organizing to master change and uncertainty, important to have people that are motivated and knowledgeable enough to convert change and uncertainty into new opportunities for innovation growth, they need to be empowered, routinely and rapidly; D) leveraging the impact of people and information, important having management that nurtures an entrepreneurial organizational culture enabling leveraging the impact of people and information on operations. This is achieved by distributing authority, providing what is needed for people to get the job done by reinforcing a climate of mutual responsibility for joint success, and nevertheless reward innovation.

Although the term "agility" was coined in 1991 by a committee at the Iacocca Institute, Lehigh University (PA), to study the US industry's lack of international competitiveness (Yusuf et al., 1999), agility has become a paradigm for how organizations should prepare for digital innovation that puts speed and efficiency in focus. To achieve organizational agility, companies tend to promote a culture of change and development that enables continuous innovation (Brettel, Mauer, Engelen, & Küpper, 2012; Holbeche, 2018). In 1986, Takeuchi and Nonaka stated, "In today's fast-paced, fiercely competitive world of commercial new product development, speed and flexibility are essential. Companies increasingly realize that the old, sequential approach to developing new products simply won't get the job done." Goldman et al. (1993) claims that "Agility is becoming a condition of survival" and that the agile capabilities are not limited by equipment, only by the "imagination creativity and skills of the workforce". Steiber (2017) goes even further by claiming that it is an urgent need for companies to apply a fundamentally new approach to managing firms in the digital era. According to Steiber (2017), the traditional model for incumbent management is 'outmoded.' The current market landscape favors companies that put a premium on qualities like continuous innovation, adaptability, and rapid response. Another important remark is that it is not enough just to adopt modern tools and procedures because, if companies continue to keep their core of bureaucracies, locked into the old structure, procedures, and culture, it will make them slow to change course effectively. According to Appelbaum, Calla, Desautels, and Hasan (2017, p. 5), "The nature of sustainability also has a major influence on an organization's capabilities of performing with agility, as it is a topic which is continuously in flux." Innovative business units are more open towards an "all-in" agile and skipping an initial bimodal setting (Gerster, Dremel, Brenner, & Kelker, 2019). Agile structure adoption

takes place at enterprises at large scale regardless of industry or size (Gerster et al., 2019). The 'all-in' agile holistic approach works as an accelerator for continuous innovation since it enables innovation and speed to become embedded capabilities in the agile 'business as usual' daily work (Goldman et al., 1995; Holbeche, 2018).

Appelbaum et al. (2017) highlight the gap in literature with respect to agility, in that most research focuses on the characteristics of agile organizations, with little attention to how organization can develop agile capabilities and embed the commitment to continuous change deep into the corporate DNA. According to Appelbaum et al. this goes beyond the level of processes and more into the psyche of the people driving the organization. Social implications are also highlighted by Appelbaum et al. (2017), where they claim that the challenge of the next century for large organizations will be to regain their innovative, agile beginning, and for startups to continue to foster dynamic capabilities as they grow. Gerster et al.'s (2019) research showed that agile transformations are not a short-term, transitory trend, and will play a significant role when companies need to increase speed and flexibility to innovate new digital products and services. There is some learning to capture and some capabilities to be built when companies evolve from a state of "doing" agile to instead "being" agile (Gerster et al., 2019, p. 4965).

## Capabilities enabling organizational agility

Capabilities enabling organizational agility have been reported in different academic strands with the following common abilities; the ability to think and act as a founder (entrepreneur) with the customer in mind; the ability to adjust and adapt to change; the ability to use whatever resources are best suited to build and optimize the needed resources, regardless of whether these resources are within or outside the organization; to fail fast and learn fast in order to keep a fast innovation pace.

Entrepreneurial capabilities have been discussed for a long time, and according to Drucker (2015, p. 30), the term "entrepreneur" can be attributed to Jean Baptiste Say, who coined the term around 1800. Say defined the term entrepreneur as "shifts economic resources out of an area of lower and into an area of higher productivity and greater yield." However, Drucker (2015) states that Say's definition does not say anything about who this "entrepreneur" is, just that the resources need to be "economic." Furthermore, Drucker (2015) states that the entrepreneur is often defined as one who starts his own new small business in the USA. A remark, though, is that not every new small business is entrepreneurial or even represents entrepreneurship (Drucker, 2015). Joseph Schumpeter (1934) was the first of the major economists to go back

to Jean Baptiste Say, suggesting that dynamic disequilibrium is brought on by the innovating entrepreneur, rather than optimization and equilibrium (Drucker, 2015). According to Schumpeter, this is the "norm" of a healthy economy and is central to economic theory and practice. Schumpeter (1943) contributed to the understanding of innovation, stressing the role of large companies as the main drivers of innovation (Hagedoorn, 1996).

A company that is entrepreneurial does not automatically equal an agile organization; not only does it require physical, structural resources, it also depends on an innovation- and risk-oriented culture (Breu, Hemingway, Strathern, & Bridger, 2002; Crocitto et al., 2003; Holbeche, 2018). Management in an agile company nurtures an entrepreneurial organization culture that leverages the impact of people and information on operations (Goldman et al., 1995). Steiber and Alänge (2016) identified that an important difference between "traditional" incumbents and innovative firms, was the overarching orientation of the company that rippled through the system, affecting both the behavior of the employees and the ultimate growth and profit or loss of the company. Steiber and Alänge (2013) conclude that a strong innovation-oriented culture together with creative smart employees with passion to transform generates a strong drive towards continuous innovation. Therefore, involving people that support the company's entrepreneurial culture and acknowledge accountability (Goldman et al., 1995; Holbeche, 2018) enables innovation growth and competitiveness (Steiber & Alänge 2016). The shortage of talent and their expectations will drive the need for organizations to look into a more open win-win employment relationship with their employees. Culture is the foundation of any innovative ecosystem (Hwang & Horowitt, 2012) as well as a key differentiator; it defines the identity of a company. According to Steiber and Alänge (2016), Silicon Valley companies compete with culture as a means to attract and retain talent. Holbeche (2018) states that the most agile organizations are usually entrepreneurial startups that works as a power plant for innovation. These companies are obsessed with providing customer value and are prepared to put in significant effort to establish exactly what it is that their customers want or need – a customer first strategy (Holbeche, 2018). Drawing on Say and Schumpeter's definitions of entrepreneurship, social entrepreneurship is a relatively new concept in the digital context (Robert & Woods, 2005). The social and challenging big vision like e.g. "How to save the world?," and similar types of socially challenging big visions, are applied by successful Silicon Valley companies (Steiber & Alänge, 2016). According to Robert and Woods (2005), social entrepreneurship aims at larger social values than only the business values that characterize classical entrepreneurship. This works as a powerful driver

to attract the born-global generation, and for social change, which also involves the ability to learn continuously and keep delivering customer value.

## Continuous learning

Knowledge in the digital era holds a notion of "knowledge is power" (Yusuf et al., 1999, p. 39), but it has an expiration date, and people need to embrace continuous and fast learning in order to cope with the speed of business that has increased gradually during the last decade (Kuusisto, 2017). Steiber (2017, p. 1) states that incumbent companies are like "computers running on an outdated operating system" with limited upgrade options. Continuous learning has been suggested as a way to counter these limitations and enable innovation and process effectiveness (Holbeche, 2018). Another important aspect is that incumbent companies have difficulties to attract staff with digital competence and to tap into their creative abilities (Steiber, 2017). This underlines the breadth of how important it is for all human resources in organizations to apply continuous learning to its workforce, in order to have a chance to keep pace with the rapid development of technology (Takeuchi & Nonaka, 1986; Nonaka, Toyama, & Konno, 2000). People learn in different ways and this requires that companies apply a dynamic process involving much reliance on trial and error and learning by doing (Takeuchi & Nonaka, 1986; Goldman et al., 1995; Schwaber & Beedle, 2001). As of now, there is a need to focus thoroughly on new learning and create value through knowledge, leading to constant innovation in a world of constant change (Takeuchi et al., 1986; Nonaka et al., 2000; Steiber, 2017; Holbeche, 2018). According to Holbeche (2018), resilient organizations, thanks to their increase in learning and resilience, can turn crises into a source of strategic opportunities. With that said, one can conclude that learning is the key to adaptation and innovation, e.g. Google, Apple, Amazon, and 3M are all "changeable". They learn faster, better and have significantly better economic growth than their peers (Holbeche, 2018).

## Virtual organizations

Another way to capture and utilize new learning is through virtual organizations. Abbe Mowshowitz first coined the term virtual organization in the North American linguistic area in 1986. This concept includes different kinds of cooperation inside as well as outside of companies. According to Goldman et al. (1995) the virtual organization is a pragmatic tool for organizations to use if seeking a strategic concept they can apply in an environment of change and uncertainty. This could also be applied as a context resilient dynamical network where many integrating networks enable the organization to gather

knowledge and use expertise quickly and effectively (Holbeche, 2018). But already back in 1986, Takeuchi and Nonaka presented a holistic method that would get the job done on a volatile market. This holistic approach consists of six characteristics: built-in instability, self-organizing project teams, overlapping development phases, multi-learning, subtle control, and organizational transfer of learning. The approach was compared to a six pieces jigsaw puzzle, fitted together, forming a fast and flexible process for new product development. Each element, by itself, does not bring speed and flexibility but taken as a whole, it develops a powerful new set of dynamics that will make a difference. This approach acted as a change agent; and was seen as a vehicle for introducing creative, market-driven ideas and processes into stagnated organizations (Takeuchi & Nonaka, 1986). Goldman et al. (1995) identified six strategic reasons that organizations should take into account when applying the virtual organization concept to ensure they focus on strategic company benefits when adopting the virtual organization model of cooperation:

- sharing infrastructure, R&D, risk, and costs;
- linking complementary core competencies;
- reducing concept-to-cash time through sharing;
- increasing facilities and apparent size;
- gaining access to markets and sharing market or customer loyalty;
- migrating from selling products to selling solutions.

## Organization reconfiguration

Agile enterprises have the capability to make a significant shift in focus easily, diversify, configure and re-align their business to serve a particular purpose rapidly as opportunity windows open up (Yusuf et al., 1999). These types of organizations are well-positioned to take advantages of speed by getting to the market before competitors with new products, and in a proactive way, by providing a product or solution to market just before the customer need arises. Many incumbents are facing the challenges because they have lost the agility that they once had when they were smaller. The agile capability is something that Silicon Valley companies have been able to mitigate while growing (Steiber & Alänge, 2016), e.g. Google even created the title Chief Culture Officer in 2006 just to ensure that their Google startup culture wouldn't get lost even when the company grows (Steiber & Alänge, 2013; Steiber, 2017). Holbeche (2018) mentions that companies must be prepared to divest resources that no longer add value. It is ruthlessly decisive. Companies must constantly be adaptable, able to change their working methods in order to deliver optimum value to customers, and do so at a glance. It is a resilient behavior. According to a former Google manager,

Mo Gawdat, radical innovation is better than incremental improvements – "The easiest way to innovate is to see what resources you have, what the market requires and then choose the shortest path to profitability". But the problem with this approach, according to Gawdat, is that you do not change anything fundamentally and that you also get stuck in old mindsets and habits. Gradual improvements will not do the job, but a tenfold improvement will (Wallenberg, 2019; Takeuchi & Nonaka, 1986; Schwaber & Beedle, 2001).

### Organizational culture

The literature on organizational agility recurrently emphasizes the importance of organizational culture as a determinant factor, e.g. learning, resilience, reconfigurability, and other capabilities that enable organizational agility towards an innovative orientation (Schein, 2017; Naranjo-Valencia et al., 2011). Holbeche (2018) and Schein (2017) define culture as the assumed shared beliefs, values, norms and priorities that lead to a certain behavior enabling innovativeness. This can also be a powerful enabler for stability, since familiar practices are reinforced over time, and become habits and routines that maintain the status quo, regardless of whether these serve their business well or not (Holbeche, 2018). A well-known citation on this topic is Peter Drucker's, 'culture eats strategy for breakfast,' meaning culture is more important than strategy in determining an organization's fate (Holbeche, 2018). A company that has taken this seriously is Google by establishing the role of a chief culture officer in order to retain their startup culture over time (Steiber & Alänge, 2013). Google has a recruiting strategy to recruit just the 'right' people who 'fit' the organization culture, to ensure that people with skills that align with the company's core values can thrive and deliver in alignment with organizational culture (Holbeche, 2018; Steiber & Alänge, 2013). According to Steiber (2017, p. 24), an executive at Google stated, "We hire people that are curious and want to be part of something bigger". "The kind of people you recruit matters for innovation" (Steiber & Alänge, 2013, p. 247). Google's founders laid the ground for the company's culture; subcultures are permitted as long as the core values remain intact (Steiber & Alänge, 2013).

## ANALYSIS FRAMEWORK

To explore the role of culture in organizational agility, we chose the Competing Values Framework as the analytic lens for this study. As shown in Figure 1, this framework works as a holistic navigator helping us understand the

different case companies in this study regarding their corporate culture and orientation towards innovation.

## Competing Values Framework (CVF)

According to Cameron and Quinn (Cameron et al., 2014) tensions arise between different logics that coexist in organizations. The CVF helps in understanding how and why tensions arise in organizations and how the organization can cope with such tensions. Each quadrant in the framework describes a logic. An organization is not locked within a certain quadrant; however, it cannot fully focus on all logics at the same time. Companies typically tend to move their focus between the different quadrants and when doing so tensions are generated within the organization because of the multiple logics present at the same time.

The application of the CVF emerged from studies of factors that account for highly effective organizational performance. The x-axis captures competing value logics between internal (maintenance) and external (positioning) focus. Typical questions asked internally are: "What is important for us?" and "How do we want to work?." The right half of Figure 1 describes the external focus: "What is important for the outside world, our clients, and the market?". The y-axis captures competing values ranging between individuality and flexibility (top) and stability and control (bottom). This creates four approaches to culture.

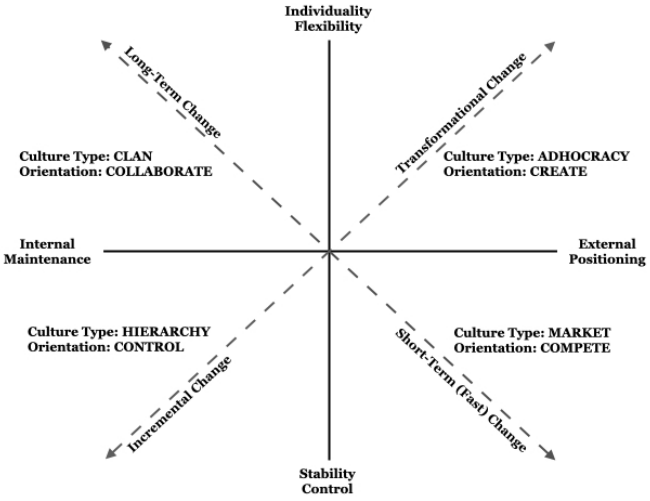



**Figure 1.** Competing Values Framework

**Source:** Cameron et We added al. (2014).

## Four approaches to culture

Each type of culture is described based on the following attributes: orientation, leader type, value drivers, and the theory of efficiency (Cameron et al., 2014). *Clan culture*: environment similar to a large family, where there is a great involvement, teamwork, and participation; emphasis on continuous learning, and bonding to colleagues by morals; executives are mentors or father figures that value the needs of the clients and caring for their people. *Adhocracy culture*: dynamic and creative environment; leaders are innovators, entrepreneurial, visionary and risk takers; focus on experiments and innovation; value drivers are innovative outputs, transformation, and agility; success factors are availability of new products or services; organizations promote individual initiative and freedom. *Market culture*: focus on results, finishing work, and getting things done; people are competitive and focused on goals; leaders are ambidextrous, hard drivers, producers, have high expectations, promote winning; reputation and success are important. *Hierarchy culture*: formalized and structured work environment, formal rules and policy keep the organization together; leaders organize around command and control; success factors are trustful delivery, smooth planning, and low cost.

The CVF has been identified as one of an important framework for identifying the role of cultural values for business efficiency (Yu & Wu, 2009). It helps identify the criteria of effectiveness that organizations must pursue when it comes to what leadership and managerial competencies are most effective in the underlying organizational culture. The framework describes the core approaches of how to think when designing an organization depending on what the organization should emphasize; innovation, creativity, entrepreneurship, collaboration, teamwork, or controlling, goal achievement, assessing and measuring.

## Studying organizational agility from a culture perspective

The purpose of an agile enterprise is to increase the speed of response to change, leaders perseverance of continuously scanning the environment, and provide market-creating innovations that lead the company to so called “blue oceans” of profitability (Denning, 2019). Blue-ocean strategy is about doing business where there is no competitor by redefining e.g. the product, service, customer, business model, or work methods (Kim & Mauborgne, 2004). This kind of behavior permits the agile enterprise to react to what they see coming earlier than competitors, and serves as a mitigation strategy to enable the company to respond proactively to changes within increasingly competitive global markets (Schwaber & Beedle, 2001). As Appelbaum et al. (2017, p. 73)

concluded, "Becoming and maintaining an agile organization is not easy. It is a journey, perhaps without an end." By using the CVF as our analysis lens, we have found that organization culture is of huge importance for enabling the creation of a "greenhouse" environment where innovation will thrive, but this requires a gardener, i.e. a certain type of leadership to make it flourish.

Naranjo-Valencia et al. (2011) concluded that Adhocracy cultures better promote innovation, while Hierarchy cultures preferably drive an imitation orientation. However, it becomes evident from our studies that only growing an Adhocracy culture is not enough to successfully drive innovation. Continuous learning is also a cornerstone to create a state of continuous innovation (Drucker, 2015; Cameron et al., 2014). This cultural aspect is predominantly found in the Clan culture. Furthermore, as Drucker (2015) states, "bureaucracies" in big organizations (hierarchical culture) and their "conservatism" are serious impediments to entrepreneurship and innovation. This could be further explained by defining "culture" as a recurring pattern of behavior and values that lead to an ability to do something (capability). Practices are needed in order to create an entrepreneurial climate. A company that wants to operate in a fast-paced digital market needs continuous innovation capability. The inability to mitigate the temptation of "starve tomorrow" and just "feed yesterday" is deadly and inevitably ages and declines the organization (Drucker, 2015). Drucker (2015) meant that it is easier to continue allocating productive resources to existing business, and simply go for exploitation, by getting a little bit more of what they already have. Furthermore, in the rapid change in the digital landscape the decline will be fast (Drucker, 2015). It is important to keep in mind that innovation cannot be "commanded out." Organizations need to be receptive to innovation and view change as an opportunity rather than as a threat (Drucker, 2015). It is up to every company to decide what capabilities they want or need to create, in order to be a *driver* or a *follower* in the market (March, 1991; Naranjo-Valencia et al., 2011). Depending on their choices, they should choose to develop capabilities that lead to the desired organizational culture, which in turn suits their purpose in the best way. If the choice is to be a driver, choose to develop capabilities that lead to enabling a Clan and Adhocracy culture. If the choice is to be a follower, choose to develop capabilities that lead to enabling Hierarchy and Market culture. When the company has made their decision on their wanted culture they need to recruit or transform the leaders and people to match the wanted organizational culture.

## RESEARCH METHODS

### Research approach

To identify the influence of cultural values on organizational agility in the context of digital innovation in the automotive industry, we choose a qualitative research approach and conducted semi-structured interviews. We applied generic purposive sampling (Bryman, 2012), and chose five international automotive companies because of their active approach to digital service innovation since this is generally driving innovation in this domain today (Lyytinen, Yoo, & Boland, 2016). The selection of the incumbent companies was based on their ambition to master the new digital service market. The two startups were chosen because of their disruptive innovation capability on the global market within a couple of years, despite limited resources. The three incumbents and one startup were located in Sweden and one startup in the USA. The US company was chosen because of its interaction with OEMs in the Swedish market.

We interviewed individuals with management and strategic positions in the companies to understand how the company's board and top management lead their company, how the company structure and culture supported or hindered innovation, new business opportunities and business models, what major challenges they were facing for the upcoming one to five years, and how they tackled these challenges. We used an interview guide with 13 predefined open-ended questions. Examples of questions from this guide are: "Does your company culture hinder or support you in experimenting with new business opportunities?;" "In what way could it have supported you more?" These questions were grounded in the organizational agility theory's core concepts (leadership and people, virtual organization, continuous learning, capability for reconfiguration) discussed in the literature review. The question "To what extent do you involve external actors in order to try out and to understand new opportunities and threats? (in respect to innovation and development)," was specifically related to capabilities enabling organizational agility and innovation growth. The question "How would you describe your company board and their role?," was asked to capture how the board supported or hindered the companies' entrepreneurial capability and innovation growth. Another theme in the interviews aimed at capturing how the companies worked with business model innovation for their products/services and if they considered changing models to deal with new business opportunities, e.g. "How did you come up with this business model?" (from idea to current state).

## Data collection

We conducted ten semi-structured interviews (see Table 1). For the Swedish companies, we conducted all interviews at the company site. For the American company, we conducted the interview via an interactive on-line dialogue.

The interviews took approximately 1–1.5 hours per person and followed the common set of 13 predefined open-ended questions. All interviews were recorded and later transcribed. Some of the companies offered a guided tour as an introduction to the company (basic historic information). Additional secondary data collection included white papers, web pages, YouTube films, and a literature survey.

**Table 1.** Sample for this study

| Company ID | Size | Type | Roles |
|---|---|---|---|
| 1 | L | Incumbent | Vice President Consumer Connectivity Services<br>Senior Director Strategy & Innovation<br>Vehicle Software & Electronics |
| 2 | M | Incumbent | Delivery Manager |
| 3 | M | Incumbent | Director Product Innovation<br>Research Affairs & Innovation Manager<br>Strategy & Sustainability Manager |
| 4 | S | Startup | Marketing Director<br>Autonomous System Director<br>Innovation Manager |
| 5 | M | Startup | CEO |

## Data analysis approach

*First*, we transcribed and coded the recorded interviews using a bottom-up approach (Myers, 2013). *Second*, we compared each recorded answer to the corresponding interview question to systematically identify similarities and differences between the companies' approach to innovation. Our analysis of the interviews revealed four different recurring themes: company structure, company culture, external actors, and innovation. The analyzed results were categorized according to CVF directly in Table 2 and plotted in Figure 2. During our analysis, it became evident that the cultural values were clustered two by two in Hierarchy/Market and Clan/Adhocracy. *Third*, we have selected quotes from our interviews to better clarify our results and reasoning and to give a sense of how these companies actually think about their business and market. The results are further elaborated in the Results and Analysis subsections. *Fourth*, we applied quasi-quantification as an analysis method

to better understand the data. This enabled us to study the cultural spread and position in the CVF for the each company, and also to compare cultural properties between the different companies. A plot of the quasi-quantified data is showing in Figure 2 (geometric shapes fitted with cubic polynomials). The Discussion section is initially structured according to the described culture quadrants in the CVF followed by a discussion of culture values' impact on organizational capability related to extant literature.

## RESULTS AND ANALYSIS

### Organizational culture types and orientation

The findings showed a focus towards Hierarchy and Market among incumbents but with an increasing awareness that market opportunities change fast and that they needed to be able to adapt faster than before. This required major changes for the incumbent firms at all levels to become more agile, attract and retain talent, get a better understanding of their customers' needs, and prioritize to maintain competitiveness in the market. Four out of five companies mentioned that recruitment is one of the major challenges they face, particularly by the incumbent firms. The interviewed incumbents experienced a need to build dynamic capabilities to handle continuous change over time. Table 2 summarizes the main results based on the structure derived from the CVF culture attributes (orientation, leader type, value drivers, and the theory of effectiveness), capabilities that enable organizational agility, e.g., vision, people and innovation (Cameron & Quinn, 2014; Crocitto et al., 2003; Steiber & Alänge, 2016) and is followed by a thorough description. We found, as Table 2 shows, that the cultures dominating incumbents were a blend of hierarchy and market, while startups were dominated by a blend of clan and adhocracy.

### Incumbents – Hierarchy & Market

Orientation: The incumbent firms felt that their current organizational structure was an obstacle for enabling innovation work to happen and to take their products and services fast to market. All incumbent firms had started an agile transformation journey by rolling out the Scaled Agile Framework for enterprise (SAFe). The reason to start an agile transformation journey at company level was mostly to gain new capabilities, e.g. speed, transparency, greater visualization enabling better prioritization regarding what needed to be done. A transformation success was seen as crucial to attracting the needed talents and accelerating innovation speed and reducing time to market with

solutions that were not obsolete already when launched. Company-3 differed by mainly covering one culture (Hierarchy).

**Table 2.** Cultural attributes and their influence on the studied companies

| Cultural Attribute | Incumbents | Startups |
|---|---|---|
| **Orientation** | High organizational complexity. Well-defined responsibilities. Long decision process. | Low organizational complexity. Flat structure enabling transparency, fast learning, quick decision making. |
| **Leader Type** | Competitor, organizer, coordinator but moving towards agile leadership. Hierarchy creates distance between top-leaders and people on the floor. | Leaders are very present, transparent, involving, sharing. Focus promoting the company's challenging big social vision inside and outside the company. |
| **Theory of Effectiveness** | Hybrid stage-gate model and SAFe (ongoing roll-out). | Social entrepreneurship, effectuation, born globals. |
| **Vision** | Could have a challenging vision but still something that is achievable. | Challenging big social vision contributing to a greater influence to a more sustainable world. |
| **People** | Relying on role descriptions, focus on expertise domain and titles. Passion for cars and to drive them. | Empowered people, entrepreneurial mindset, fast learners, self-organized/driven. A passion to make a greater contribution to a more sustainable world. |
| **Innovation** | Hybrid traditional innovation and open innovation. | Radical open innovation / disruptive. Transparency enabling increased resources and speed, with limited means. |

Vision: The incumbents had developed a challenging vision but still something that everyone would be able to achieve. Company-3 had a vision that reminded of a bigger social challenging vision as found in the successful Silicon Valley companies, but they were not open regarding what the meaning of their vision was to them.

Leaders: According to Company-1, agile transformation required an extensive mindset change. It was important that the first attempts were handled by management in a way that would not jeopardize the idea with agile transformation. Incumbents' top management supported the agile transformation but were not directly taking part or being present in the organization to motivate people as to why the changes were needed. Instead,

they delegated this to middle management who experienced lack of support, transparency, engagement and courage in communication and decisions. Even though top leaders wanted the agile efficiency and innovation growth, their way of leading had not changed.

Culture: The incumbent firms were aware that they had a culture within their company that was not optimal for a change towards an agile philosophy and/or agile working methods, and that it would be a struggle to move to a new more agile culture. However, there were differences between the studied companies. Company-2 has been able to retain some degree of startup culture and practices from before they were acquired by the current owner. They explained that their culture actually still differed from the mother company units even though the same rules, values, etc., applied for all units.

People: Results show differences between incumbents in the way the organizational culture and orientation attracted talents. Company-2 pointed out that some employees had different behaviors depending on whether they originally came from the startup or the new mother company. People from the mother company were seen as less driven, engaged and passionate compared to the ones originating from the startup firm. Much of the tension in this company was explained by these differences in internal organization and cultural values. All studied incumbents' agile transformation was challenged by different traditions carried by the different domain groups, e.g. hardware, software, supply chain, for how to organize people around the new agile mindset.

Innovation: The automotive industry is going through four major challenges: autonomous drive, electrification, digitalization and increased degree of shared mobility. In order to increase innovation speed to reach market impact, the studied incumbents were aware that they needed more open innovation and co-creation with external actors. This kind of co-creation was limited to joint ventures. Company-1 had several innovation centers, but it was hard to get new ideas approved by senior management. They realized that a broad innovation approach, with several forms of innovation strategies, was needed and that competitiveness was dependent on the ability to learn, develop, and deliver new products continuously to the market. Another insight was that there are differences compared to the past with new types of partnership even outside the automotive sector and the companies' comfort zone, such as electronic retail companies, energy companies, and the like. None of the studied companies had measurements in place for innovation growth and did not see the value in or need for this kind of measurement.

## Startups – Clan & Adhocracy

Orientation: The startups were comfortable with their current lean structure. This was also a necessity given their small margins. Agile meant that they had to be prepared for quick changes – completely if needed – regardless of whether it was due to internal or external reasons.

Vision: The studied startups were formed as answers to social challenges based on a vision about contributing to a more sustainable world.

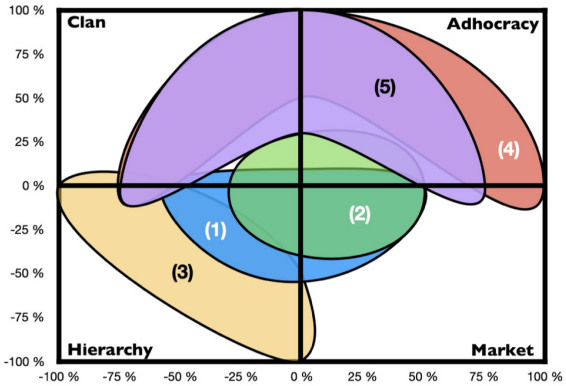
Leaders: Managers were present and communicated the need for openness, sharing and promoting the company's vision both inside and outside the company. Leadership was personalized with a focus on motivating people and supporting them. Company-4 explicitly applied social entrepreneurship, e.g. every Monday, they would kick off the week with a standup meeting hold by their CEO. "Our CEO created and maintains this culture." "Our CEO is very present, transparent, involving, sharing."

Culture: The startup firms had explicit cultural values that were communicated both internally and externally as part of their identity. Company-4 "Culture was an important driver for the startups." Company-5 stated, "Culture is of huge importance, and cannot be underestimated. This goes back to being able to retain people." They were convinced that it was important to make employees feel that they are part of a team and that sharing the same values positively affected their will to stay in the company. The startups mentioned that they verified that everyone had the same goals and made sure that they worked closely with their colleagues regardless of where they were located globally. For Company-4, cultural values such as the need for innovation and transparency were carried by the company founder. One of the interview persons at Company-4 stated "Compared to other companies we are very authentic with those values, you can feel them." The company had monthly status reports on YouTube to keep people outside the company updated about their latest progress and engaged open source communities in product development. Collaborating with larger incumbents could force them to step back on their openness.

People: The startups were very selective when hiring people, for them, it was important that talent could fit into the cultural values they embraced. This is in order to get the "right" talent that can function and take initiative in this type of innovation collaboration culture. Company-5 pointed out the importance of recruiting the right talent by stating the following: "It is hard to find the right people, still we are very selective. Last year we hired 80 people and for those we had 23,000 people applying. You give what you pay for. Hiring the wrong people is much more costly than spending the time hiring the right person – it has taken a lot of time – having engineers that spend 30% of their

time interviewing." They looked for empowered people with an entrepreneurial mindset who were self-organized and driven by passion rather than titles. Company-5 CEO stated, "We encourage people to be independent and to be self-driven and not wait for someone to tell them what to do." Employees were passionate about being part of a journey to make a contribution to a more sustainable world. Company-4 stated, "This place is driven by passion rather than rules." Most of the startups' recruitment was based on networks and weak ties: people who knew the founders' work and wanted to be part of the journey. For these companies it was important that employees had the right attitude, rather than having the right experience. Company-5 CEO, "I try to talk to everyone that we make an offer to." Company-4 stated, regarding what is important when it comes to recruitment, "It is all about attitude and mindset, be open-minded and want to do something great. Skills are important but without attitude it will not work."

Innovation: Startups stated that innovation was something they did by necessity. Innovation processes had to be lean. Novel and innovative methods and processes were used during the engineering, manufacturing and production phases. The startups competed with front-end technologies such as autonomous vehicles, which forced them to be innovative since the solutions did not yet exist. As startups they saw it as advantageous that there were no preconceived ideas about how particular problems should be solved. They continually tried to reduce time to get their innovations to market. According to the interviewed managers, success was dependent on a company culture of being open-minded, applying radical open innovation methodologies and fast feedback loops from target groups. Ideas for solutions could come from unexpected sources, according to Company-4, "Still today every idea counts." This was motivated by the scarce resources that forced them to continually identify and evaluate new ideas and being prepared to team up with external partners to have a chance to succeed. Various strategies were used: with some partners the collaborative tool was a software or hardware platform, with others, the collaboration was strategic with shared critical information, keeping core technologies and strategies internal. Company-5 was quite aware from the start that they would not be able to succeed without collaborating with others, "It is a big space and one cannot do it all; even though you can do it all maybe you shouldn't. Others might do it better." Company-4 applied a "digital first" strategy, which meant that they first built a digital model before developing a physical product that helped the developers in their design and manufacturing process. The startups viewed collaboration and partnership to get hold of experience and knowhow and gain speed as the approach to continually develop in the future.




| Company | Size | Type |
|---|---|---|
| 1 | L | Incumbent |
| 2 | M | Incumbent |
| 3 | M | Incumbent |
| 4 | S | Startup |
| 5 | M | Startup |

**Figure 2:** Culture focus for the five different companies

## DISCUSSION

The purpose of this study is to investigate how cultural values shape organizational agility in the automotive industry in the context of how these companies explore digital innovation opportunities. We compared how different organizational approaches and value systems in automotive startups and incumbents supported or hindered their ongoing work to develop organizational agility to increase their ability to innovate. Figure 2 summarizes the results presented in the results section (Table2) plotted on the CVF matrix. Below, we discuss four different ways culture affected the way the studied organizations were able to use different agile capabilities to promote innovation (Figure 1).

### Hierarchy: Incremental change

With its internal maintenance focus and value drivers such as control, efficiency and stable production and a controlling management, the hierarchical culture created a capability for small incremental change but left little room for experimentation and fast decisions. To innovate within this environment took time, and improvements developed stepwise in a controlled way. Hierarchical culture had a negative impact on organizational agility that requires flexibility, adaptability, and fast decision making. Empowered employees should be able to collaborate with other resources, regardless of whether they were within or outside company control. A risk was identified that the companies with hierarchical culture could not survive the current fast-pace innovation environment in the digital market, especially for Company-3 that almost entirely had its cultural focus in the Hierarchy quadrant (Figure 2).

## Market: Short-term change

The Market culture, with its external focus and value drivers such as market share growth, aggressive competition and goal achievement, provides a capability for fast change and short-term performance but does not promote collaboration and experimentation. The hard-driver and competitor leadership style of this culture values fast business profit and market share growth. Although this culture promotes a focus on external positioning in the market, it does not necessarily positively impact organizational agility, which promotes continuous learning, team collaboration, co-creation, and experimentation. The Market culture promotes competition both internally and externally. This generates agility in relation to the market, but can have a negative impact on the organizational environment for innovation due to the focus on aggressive competition and fast business profitability. The time and space for innovation is, therefore, not well supported. Because the Market culture focuses on external positioning and fast change it could easily be perceived as being an Agile culture. However, an Agile culture should also emphasize elements of openness and co-operation. This difference, between the "espoused theories" and the "theories-in-use" (in the terminology of Argyris & Schön, 1996), has also been observed in other domains. According to Argyris and Schön (1996), an individual is normally not aware of which are his theories-in-use, and can typically only become aware to a limited extent, and even then with substantial effort through 'double-loop learning,' when efforts are made to deeply reflect upon a situation, including questioning its basic assumptions. Company-1 and 2 (Figure 2) were well represented within this culture and they were both struggling to get innovation with external actors to happen. Company-2 stated that they were struggling to spend time on innovation since customer projects always took priority.

## Clan: Long-term change

The Clan culture contributed to a capability for long-term change, individuality and flexibility, with its internal focus and value drivers such as collaboration, team building, commitment and development that had a positive impact on organizational agility, as collaboration and continuous learning were key capabilities for organizational agility. Mentor leaders also had a positive impact on organizational agility as they promote people to be self-driven and make their own decisions, including permitting failure as long as people learn from their mistakes. Empowerment and commitment built openness and trust, enabling people to innovate. This culture alone did not fully drive innovation, as people also had to be inspired and passionate about

what they do, for innovation to take off. This was, in particular, promoted by Company-4 and 5 (Figure 2). At Company-4 all employees supported each other to meet the goals and targets. For example, during the visit to the site to interview people for this study, engineers could be seen working with a UX designer down on the garage floor, to solve the lighting design on the car in order to achieve the best-suited design both from a technical design perspective and from a user experience perspective. Even though Company-4 did apply "digital first", they sometimes needed to see and feel how it would work out in the real physical car. Both Companies-4 and 5 had great collaboration with external actors. Company-5 CEO stated that from the start they realized that their potential market space was large and they would not be able to do it by themselves – their strategy has been to collaborate with others. As he said, “It is a big space and one cannot do it all, even though you can do it all maybe you shouldn’t. Others might do it better.” Company-4 even had the well-established incumbents knock on their door to be part of their journey. They tried to find win-win solutions since Company-4 was not able to pay for the incumbents’ tools that they offered them to use in their development. The incumbents partnered up with Company-4 for branding, e.g. to gain some of the hype status to boost their incumbent image to attract talent, or to use Company-4 as a testbed for their own products. What Company-4 clearly stated was that it was never for charity, there needed to be a win-win for both companies.

## Adhocracy: Transformational change

With its flat structure, external positioning, focus on individuality and flexibility and value drivers such as a challenging social vision and a focus on innovative outputs, the Adhocracy culture had a positive impact on organizational agility and provided a capability for transformational change (Iivari & Iivari, 2011). The visionary leaders were able to inspire both people and customers and gain their loyalty and commitment to innovate and develop. This was a highly energetic environment where innovation took off, but for enabling continuous innovation “Clan” capabilities like continuous learning and collaborations were needed. This means that the Adhocracy culture is not enough to enable the continuous innovation needed in a fast-paced, innovating digital market. Company-4’s (Figure 2) frugal use of titles, unless needed to ease external communication, created a change-able mindset of all employees. As several of Company-4’s interviewed people stated, “Titles are of no importance, has no internal value,” “Team members are those in charge,” and “Ideas for solution can come from anywhere.” They

even stated, "This is due to the culture and the talent that we get into the company, to be open-minded until the last second."

## Organizational culture values

The organizational culture values' impact on organizational agility (capabilities) differs depending on whether it concerns non-competing, competing, or complementary values.

## Non-competing values

Company-3 (Figure 2) was unique among our interview companies since it was only placed within one culture, namely the closed hierarchical culture. An observation was that their external communication did not reflect the actual company inside, which could be an effect of their hierarchical culture. These were the most difficult interviews to do and where trust was not really in place. We experienced this company as a very closed company, which is not really suitable for open innovation that requires a high degree of openness and co-innovation (Kucharska, 2017). We did not find any competing values within this company.

## Competing values

For Company-1 and 2 (Figure 2) their hierarchical culture values with respect to formal rules, policies, control and their hierarchical cultures' organization glue dimension had a negative effect on innovation (Naranjo-Valencia et al., 2011). The difference between these two companies was that Company-2 showed more openness. As explained by them, it was due to keeping their startup culture and organization agility that they had prior to the acquisition by their mother company. This was something that Company-2 was struggling with in order to be able to retain its original culture now when being in the "new" environment where they had to be compliant with the mother company's processes and routines.

## Complementary values

Cameron and Quinn (2011) found that companies spanning several cultures are likely to generate internal tensions due to competing value systems that can make them less efficient and thus hamper their ability to innovate. Surprisingly the studied startups (Company-4 and 5, figure 2) showed a high degree of organizational agility while at the same time spanning two value logics – Clan and Adhocracy. The influence of these cultural values was seen

as crucial for the studied companies to develop organizational agility as a dynamic capability to enable innovation growth (Steiber & Alänge, 2013). The combination of Clan and Adhocracy culture generated a value system that supported a creative agile environment for both leaders and other employees, which moved the organizations into a hyper productive state (Takeuchi & Nonaka, 1986; Schwaber & Beedle, 2001). For the startups in this study it meant moving into a hyper-innovating state due to cooperative and knowledge sharing rather than competitive behavior, which also has been noted in other startup studies regarding organizational culture (Prystupa, 2017). As Company-4 stated, "Ambition level is 10 out of 10. It is all in by everyone." We could not identify a direct tension within the culture combination of Clan and Adhocracy. Instead, they blended into one compound culture, which we term *Agile culture*. The Clan culture focused on caring for people, fostering collaboration, enabling continuous learning to develop employees' skills and competence (Takeuchi & Nonaka, 1986; Schwaber & Beedle, 2001). Naranjo-Valencia et al. (2011) identified what they call organization glue that had a positive effect on innovation when employees shared values. In particular, these values were a commitment to innovation and change. The structure in these organizations was flat with little formal expression of Hierarchy.

The studied companies recognized the importance of what Yusuf et al. (1999) named the core concepts of an agile enterprise: virtual organization, capability for reconfiguration, core competence and management, and knowledge driven enterprise, e.g. continuous learning. This was especially evident in the incumbents' struggle to establish a culture that would let organizational agility permeate the whole work organization to obtain a holistic perspective. The startups had this approach as a cultural premise for the entire organization. As Goldman et al. (1995) has argued, to succeed, companies need to tailor their approach to fit their organizational context so that everyone can embrace the vision. There is no generic receipt that fits all (Goldman et al., 1995). In this study, the incumbents were all trying to organize their move around the Scaled Agile Framework, SAFe. This required both structural and cultural transformational change (Cameron et al., 2011). A culture move towards organizational agility also required top management to have a clear vision of why the move was needed (Paasivaara, Behm, Lassenius, & Hallikainen, 2018). The incumbents identified the innovation capability fostered by the startups' new type of agile culture. They realized that it put pressure on them to transform from an organization dominated by Hierarchy and Market culture, to an organization charged by Clan and Adhocracy culture. However, the study shows that it was hard for the incumbents to involve all levels of the company to embrace an agile approach

to the organization because of the dominating waterfall regime. While the startups managed to fuse Clan and Adhocracy into a new agile culture, the acceleration of the transformation towards organizational agility led to increased tensions between Hierarchy/Market culture and Clan/Adhocracy culture in the studied incumbents.

Felipe et al. (2017) concluded in their study on the relationship between competing values and organizational agility that Clan, Adhocracy, and Hierarchy cultures are positively related to organizational agility, while Market culture is negatively related to organizational agility. Their findings suggest that agile companies might benefit from a certain degree of stability, order and control in crisis and uncertainty times. It is noted by Felipe et al. (2007) that Hierarchy culture may lead to short-term success. However, our results show that short-term integration into a Hierarchy culture can have a negative impact on innovation capability. This was also an important reason why the three incumbents in our study transformed their organizations towards combining Clan and Adhocracy cultural values. All studied companies proposed that, in order to be able to create novel products and services and rapidly take them to market, they needed to collaborate with external actors in a more open and collaborative way than before. This required that they reassess criteria for effectiveness based on Clan and Adhocracy cultural values, such as present and committed leaders, flat organizations, co-creation, and agile techniques and tools, such as empowerment, teamwork and innovation (Cameron et al., 2014). Given the challenges facing companies today, incumbents in particular, in order to attract and retain the necessary talent needed within the digital era, a transformation towards an agile environment can be a way of mitigating the challenge of attracting and retaining this needed talent. According to Lund (2003), job satisfaction is negatively related to Hierarchy and Market cultures, and positively related to Clan and Adhocracy cultures.

## CONCLUSION AND CONTRIBUTION

This paper set out to answer the research question: How do cultural values shape organizational agility when incumbent firms and startups within the automotive industry explore digital innovation opportunities?

Our first conclusion is that organizational agility effectiveness is gained only when both Clan and Adhocracy cultures are present and integrated. We call the integrated sum of these two cultures 'Agile culture.' This is in contrast to the competing values between the Clan and the Adhocracy cultures identified by Cameron and Quinn.

A second conclusion is that Hierarchy and Market culture values are opposite to the amalgamation of Adhocracy and Clan culture, which we refer to as agile culture. Hierarchy and Market culture values competed with agile culture. This made it difficult for incumbents to gain organizational agility by incorporating a 'startup culture' that had the desired combination of Clan and Adhocracy values, e.g. as shown for Company-2 (Figure 2). This was also the main reason why all incumbents that participated in this study started an 'all-in' agile transformation journey, aiming to move their organization from a traditional culture (Hierarchy & Market) that had an inhibitory effect on their innovation capability, to an agile culture that would in particular enable their open innovation capability.

**Limitations and future research.** There are some limitations to this study. The data collection is primarily from three large, global Swedish automotive companies, except for one startup in Sweden and one startup in USA. Another limitation is that the data is from two startups from two different continents, and it would be interesting to further study startups from other continents. Therefore, generalization of the results must be made with caution. Further research is needed to better understand the influence of culture on organizational agility in the context of open innovation. This includes understanding how companies co-create with external actors in ecosystems or networks and the implications for continuous innovation growth.

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***Abstrakt***

*Celem tego badania jest pogłębienie wiedzy dotyczącej tego, w jaki sposób kulturowe aspekty zwinności organizacyjnej wpływają na zdolność do generowania innowacji cyfrowych. W kontekście rosnącego zapotrzebowania na szybko rozwijające się innowacje cyfrowe, zwinność organizacyjna staje się strategicznie kluczowa dla dużych firm, aby zwiększyć ich konkurencyjność. Literatura na temat sprawności i zwinności organizacyjnej jednoznacznie wskazuje, że obecnie nawet organizacje szerokim dostępem do zasobów, wciąż mogą mieć ograniczone możliwości wprowadzania innowacji i reagowania na zmiany. Sytuacja organizacji dojrzałych istotnie kontrastuje z sytuacją startupów, które bywają imponująco innowacyjne mimo bardzo ograniczonych zasobów. Czasami firmy zajmujące ugruntowaną pozycję rynkową są deklasowane przez startupy ze względu na ich olbrzymią zdolność do wdrażania zmian i szybkiego wykorzystywania nowych możliwości biznesowych. Jednak brakuje wiedzy o tym, dlaczego niektórzy obecni operatorzy rynkowi nie są w stanie efektywnie wykorzystywać swoich zasobów do wdrażania innowacji cyfrowych i dlaczego niektóre mniejsze startupy mogą swobodnie te ograniczenia zasobów przekraczać. Autorzy uważają, że na tą sytuację mają wpływ czynniki kulturowe. Aby zweryfikować to założenie, zaprojektowali badanie porównawcze dot. wpływu kultury na sprawność organizacji w firmach dużych (wieloletnich), jak i startupach z branży motoryzacyjnej. Zastosowali oni jakościowe podejście badawcze w oparciu o wywiady częściowo ustrukturyzowane. Ramy konkurujących wartości organizacyjnych zostały wykorzystane jako narzędzie do kategoryzacji różnych kultur, które wpływają na sprawność organizacji, ale także do określenia, w jaki sposób i kiedy napięcia między wartościami wspierały lub utrudniały zdolność organizacji do innowacji. Nasze odkrycia pokazują, że podczas gdy mieszanka kultur hierarchii i rynku hamowała zdolność do innowacji, kultury klanowe i adhokracyjne promowały innowacje. W badanej próbie wieloletnie firmy przeważnie należały do dwóch pierwszych kultur, podczas gdy startupy zazwyczaj należały do drugiej grupy. Zaobserwowano, iż startupy odnoszące największe sukcesy we wdrażaniu innowacji były w stanie stworzyć kombinację kultur klanowych i ad-hokracji, którą autorzy nazywali „kulturą zwinną". Ta kultura pozwoliła im osiągnąć korzystny stan wzrostu innowacji cyfrowych. Autorzy sformułowali również implikacje badawcze i rekomendacje praktyczne, stwierdzili potrzebę dalszego, głębszego przeanalizowania znaczenia elementów kultury zwinnej dla sprawności organizacyjnej; oraz zaznaczyli konieczność dalszej eksploracji wątku dot. tego jak wykorzystać kulturę jako atut umożliwiający rozwój innowacji cyfrowych. Oryginalność przedstawionych wyników polega na identyfikacji „kultury zwinnej", która jest połączeniem kultury klanowej i adhokracji. Kultura zwinna, a konkretnie wartość, którą ona tworzy, gdy jest stosowana, umożliwia sprawne wdrażanie innowacji cyfrowych.*

***Słowa kluczowe:*** *kultura zwinna, sprawność organizacyjna, kultura przedsiębiorczości, ramy konkurencyjnych wartości, zdolność do innowacji cyfrowych*

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**Dulce Goncalves** is an industrial Ph.D. student in her third year at Halmstad University. Dulce holds a master's degree in informatics and has substantial industrial experience in global R&D software product development. She has held several strategic and leading roles (e.g., R&D manager, Agile thought leader, business area manager, board member, and senior management consultant) since the beginning of 2000, supporting large incumbents within different industries through their all-in agile transformation journeys. Her research centers on organizational agility; and how it enables and drives continuous digital innovation growth.

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## Conflicts of interest

The authors declare no conflict of interest.

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